Über dieses Buch

Dies ist ein digitales Exemplar eines Buches, das seit Generationen in den Regalen der Bibliotheken aufbewahrt wurde, bevor es von Google im Rahmen eines Projekts, mit dem die Bücher dieser Welt online verfügbar gemacht werden sollen, sorgfältig gescannt wurde.

Das Buch hat das Urheberrecht überdauert und kann nun öffentlich zugänglich gemacht werden. Ein öffentlich zugängliches Buch ist ein Buch, das niemals Urheberrechten unterlag oder bei dem die Schutzfrist des Urheberrechts abgelaufen ist. Ob ein Buch öffentlich zugänglich ist, kann von Land zu Land unterschiedlich sein. Öffentlich zugängliche Bücher sind unser Tor zur Vergangenheit und stellen ein geschichtliches, kulturelles und wissenschaftliches Vermögen dar, das häufig nur schwierig zu entdecken ist.

Gebrauchsspuren, Anmerkungen und andere Randbemerkungen, die im Originalband enthalten sind, finden sich auch in dieser Datei – eine Erinnerung an die lange Reise, die das Buch vom Verleger zu einer Bibliothek und weiter zu Ihnen hinter sich gebracht hat.

Nutzungsrichtlinien

Google ist stolz, mit Bibliotheken in partnerschaftlicher Zusammenarbeit öffentlich zugängliches Material zu digitalisieren und einer breiten Masse zugänglich zu machen. Öffentlich zugängliche Bücher gehören der Öffentlichkeit, und wir sind nur ihre Hüter. Nichtsdestotrotz ist diese Arbeit kostspielig. Um diese Ressource weiterhin zur Verfügung stellen zu können, haben wir Schritte unternommen, um den Missbrauch durch kommerzielle Parteien zu verhindern. Dazu gehören technische Einschränkungen für automatisierte Abfragen.

Wir bitten Sie um Einhaltung folgender Richtlinien:

+ *Nutzung der Dateien zu nichtkommerziellen Zwecken* Wir haben Google Buchsuche für Endanwender konzipiert und möchten, dass Sie diese Dateien nur für persönliche, nichtkommerzielle Zwecke verwenden.

+ *Keine automatisierten Abfragen* Senden Sie keine automatisierten Abfragen irgendwelcher Art an das Google-System. Wenn Sie Recherchen über maschinelle Übersetzung, optische Zeichenerkennung oder andere Bereiche durchführen, in denen der Zugang zu Text in großen Mengen nützlich ist, wenden Sie sich bitte an uns. Wir fördern die Nutzung des öffentlich zugänglichen Materials für diese Zwecke und können Ihnen unter Umständen helfen.

+ *Beibehaltung von Google-Markenelementen* Das "Wasserzeichen" von Google, das Sie in jeder Datei finden, ist wichtig zur Information über dieses Projekt und hilft den Anwendern weiteres Material über Google Buchsuche zu finden. Bitte entfernen Sie das Wasserzeichen nicht.

+ *Bewegen Sie sich innerhalb der Legalität* Unabhängig von Ihrem Verwendungszweck müssen Sie sich Ihrer Verantwortung bewusst sein, sicherzustellen, dass Ihre Nutzung legal ist. Gehen Sie nicht davon aus, dass ein Buch, das nach unserem Dafürhalten für Nutzer in den USA öffentlich zugänglich ist, auch für Nutzer in anderen Ländern öffentlich zugänglich ist. Ob ein Buch noch dem Urheberrecht unterliegt, ist von Land zu Land verschieden. Wir können keine Beratung leisten, ob eine bestimmte Nutzung eines bestimmten Buches gesetzlich zulässig ist. Gehen Sie nicht davon aus, dass das Erscheinen eines Buchs in Google Buchsuche bedeutet, dass es in jeder Form und überall auf der Welt verwendet werden kann. Eine Urheberrechtsverletzung kann schwerwiegende Folgen haben.

Über Google Buchsuche

Das Ziel von Google besteht darin, die weltweiten Informationen zu organisieren und allgemein nutzbar und zugänglich zu machen. Google Buchsuche hilft Lesern dabei, die Bücher dieser Welt zu entdecken, und unterstützt Autoren und Verleger dabei, neue Zielgruppen zu erreichen. Den gesamten Buchtext können Sie im Internet unter `http://books.google.com` durchsuchen.

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

https://books.google.com

Princeton University Library
32101 079221303

Digitized by Google

.223
S

Library of

Princeton University.

The Book of Barr Ferree

Digitized by Google

Digitized by Google

Digitized by Google

VOLVME XCVII

JVLY TO DECBR 1909

THE BVILDER

AN : ILLUSTRATED : WEEKLY MAGAZINE : FOR : THE ARCHITECT : ENGINEER : ARCHÆOLOGIST : CONSTRUCTOR : SANITARY-REFORMER : AND ART-LOVER.

"EVERY man's proper mansion-house, and home, being the theater of his hospitality, the seate of selfe-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kind of private princedome, nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

"Architecture can want no commendation, where there are noble men, or noble mindes."—SIR HENRY WOTTON.

"OUR English word To BUILD is the Anglo-Saxon Býlsan, to confirm, to establish, to make firm and sure and fast, to consolidate, to strengthen; and is applicable to all other things as well as to dwelling-places."—DIVERSIONS OF PURLEY.

"ALWAYS be ready to speak your mind, and a base man will avoid you."—WILLIAM BLAKE.

OFFICE: CATHERINE ST. STRAND: LONDON: WC.

Digitized by Google

INDEX TO VOLUME XCVII.

JULY TO DECEMBER, 1909.

CONTENTS.

Articles, Notes, and Reviews ii
Reports of Meetings, Papers Read, Law Cases, etc. v
Correspondence :
Subjects of Letters vii
Writers of Letters vii
General viii
Architects, etc., of Buildings Illustrated x
Illustrations xi

ARTICLES NOTES, AND REVIEWS.

ABBEY : Bardney, 456 ; Westminster, 3, 73, 586
Abbey Pulpit, Shrewsbury, 233
Abbeys, the Yorkshire, 34
Academy, Royal (see 'Royal')
Accident : Assurance Buildings, Aldwych, 234 ; Building, Birkenhead, 516, 547 ; Building, Philadelphia, 232 ; Dock, Newport, 35, 205 ; Lift, the Oval, 329 ; Lock, Canadian, 61
Adams, Hy., on Standardisation, 403
Addington, Surrey, 37
Adelaide Galleries, Strand, London, 457
Advertisements : by Messrs. Selfridge & Co., 150 ; Campaign Against Disfiguring, 377 ; Legal Regulation of, 120
Agents and By-laws, 102
Aldersgate Fire, the, 4
Alderton, Model Cottages at, 335
Aldwych, Reinforced Concrete in, 234
Almshouses : Barnstaple, 11 ; Beaminster, 358 ; Bradford-on-Avon, 292 ; Corsham, 525, 526 ; Glastonbury, 67 ; Lyford, 236 ; Stratford-on-Avon, 315
America, Electricity in, 486
American : Committee on Reinforced Concrete, 229, 307, 429 ; Concrete Bridge, an Early, 582 ; Theory as to Paint, 634
Anslow *v.* Cannock Chase Colliery Company, 33
Antiquities, Egyptian, University College, 36
Apprenticeship, 575
Apprenticeship, National Institution of, 464
Aqueducts of Lyons, the Ancient, 357
Arbitration *v.* Strikes, 516
'Archæologia,' 268
Arch : Concrete, the Longest, 635 ; the Isonzo Masonry, 689
Architects : Assistants, Guild of, 456 ; Charges and Builder's Quantities, 513, 575 ; Responsibilities, 457 ; Technical Bureau, the, 15, 69, 96, 129, 386, 411, 464, 490, 524, 555, 613, 640, 669
Architects, Chancellors and, 260
Architect, the Profession of an, 43
Architectural and Topographical Society, 121
Architectural Association : Excursion, Sketches with the, 186, 214 ; Meetings, 236 ; Sketch-Book, 92, 100 ; Students' Work, 117
Architectural : Congress, Ninth International, 178 ; Copyright, 4 ; Department, the London County Council, 484 ; Development, Modern, 401 ; Library, the Avery, Columbia, University, 583 ; School, a New, 206
Architecture : Copyright in, 687 ; Influence of, on Modern Construction, 261, 282 ; in the United States, 661 ; Liverpool School of, 69, 91 ; Royal Academy Gold Medal Design in, 695 ; Shop, an Effort in, 362
Areameter, the, 593
Art : Commerce and, 150 ; the Value of Works of, 690
Art-Notes from Paris (see 'Paris')
Arts and Crafts, London County Council School of, Students' Work, 62
Arts Extension Building, Liverpool University, 183
Assopus Viaduct, the, 662
Attorney-General *v.* : Birmingham, etc., Drainage Board, 617 ; Gibb, 293 ; Grand Junction Canal Company, 102 ; West Gloucestershire Water Company, 3
BAILEY *v.* Kenworthy, 33
Baillie Gallery, the, 522, 640
Balconies and Verandahs, 62
Bank Premises, Parkstone, 217
Barcelona, 303
Bardney Abbey, 456
Barnes, F. J., on Portland Stone, 576
Barnet, East, Valley Urban District Council *v.* Stallard, 185
Barn, Monks', Peterborough, 282
Barnstaple, Penrose Almshouses, 11
Bath, Bath-street, 577
Beaminster, Almshouses at, 358
Beams, Concrete, Repetitive Loads on, 150
Bede House, Higham Ferrers, 92
Belgian Glass and Cement, 494
Bell, Miss G., on Palace of Ukheithar, 515
Bench Ends, St. Nicholas, Walcot, 17
Bentley Priory Estates, Middlesex, 91
Berkshire County Offices Competition, 285, 314, 338, 364
Birkenhead Building Mishap, 516, 547
Birmingham : Municipal School of Art, 206 ; University, Ceremonial Key, 41
Birthday and Other Honours, 4
Blackfriars Bridge, 205, 311
Board of Education Syllabuses, Changes in, 180
Boiler Explosion, the Workington, 356
Bond of Cement Mortar, 484

Books, Magazines, Pamphlets, etc., Notices, Reviews, and Articles as to :—
Abbey, Westminster, 573
Air-gas, Petrol, 73
Antiquities, Baronial, etc., of Scotland, 314
'Archæologia,' 268
Archæological Discoveries, a Century of, 556
Architects, British, Lives of the, 696
Architectural Association Sketch-Book, 92, 100
Architecture . Australian, 314 ; Greek, 556 ; Mediæval, 72 ; Norman, in Cornwall, 314
Australian Architecture, 314
Baker, I. O., Masonry Construction, 697
Baldwin-Wiseman, W. R., Consumption of Water, 179
Baronial, etc., Antiquities of Scotland, 314
Beautiful World, a, 378
Belgium, Cathedral Churches of, 697
Beresford, W., Memorials of Old Staffordshire, 697
Billings, R. W., Baronial, etc., Antiquities of Scotland, 314
Bond, F., Westminster Abbey, 573
Books Received, 19, 48, 74, 103, 134, 190, 215, 244, 295, 318, 341, 366, 393, 418, 440, 470, 498, 531, 593, 618, 646, 699
British Water-Colour Painting, History of, 72
Building : Construction, 557 ; Mechanics' Ready Reference, 315
Bumpus, T. Francis, Cathedral Churches of Belgium, 697
Cabinet Work, Furniture, etc., Modern, 412
Cahill, M. F., Householders and Repairs, 413
Cambridge, Oxford and, 697
Catalogues, Trade, 18, 74, 134, 260, 295, 318, 341, 366, 390, 440, 497, 531, 561, 618, 646
Cathedral : Churches of Belgium, 697 ; St. Paul's, Memorials of, 556
Books, Magazines, etc. (*continued*) :—
Cathedrals, French, 556
Cement : Portland, 314 ; Workers', etc., Ready Reference, 315
Chancellor, E. Beresford, Lives of the British Architects, 696
Chateaux and Gardens, French, 412
Chatley, H., Force of the Wind, 557
Churches : Cathedral, of Belgium, 697 ; of Coventry, the, 413
Clay, Rotha M., Mediæval Hospitals of England, 696
Coast Erosion, 697
Colby, A. L., Reinforced Concrete in Europe, 314
Coleman, G. S., Reinforced Concrete Diagrams, 314
Concrete : Construction, Reinforced, 314 ; Its Uses in Building, 314 ; Reinforced, 697 ; Reinforced, Diagrams, 314 ; Reinforced, in Europe, 314
Concrete Institute 'Transactions,' 73, 314
Cornwall, Norman Architecture in, 314
Coventry, the Churches of, 413
Craster, H. H. E., a History of Northumberland, 413
Cundall, H. M., British Water-Colour Painting, 72
Davis, A. C., Portland Cement, 314
Day, L. F., Nature and Ornament, 72
Decoration and Furniture of English Mansions, 412
Diagrams, Reinforced Concrete, 314
Dustless Road-tar Macadam, 697
Easdale, W. C., Sewage Disposal Works, 315
Encyclopædia of Practical Engineering, 73
Engineering and Plumbing, Domestic Sanitary, 557
England : Mediæval Hospitals of, 696 ; Stained-glass Tours in, 556
English House, Growth of the, 696
Erosion of the Coast, 697
Esdale, M., How Property is Valued, 557
Estate Management, Small, 557
Ferro-concrete, Hennebique, 73
Fletcher, H., Oxford and Cambridge, 697
Freeman, A. C., Small Estate Management, 557
French : Cathedrals, 556 ; Chateaux and Gardens, 412
Fresco Painting, 215
Frothingham, A. L., Monuments of Christian Rome, 413
Furniture : Cabinet Work, etc., Modern, 412 ; of English Mansions, 412
Glazing, Colour, Scumbling and, 697
Gotch, T. A., Growth of the English House, 696
Gray, H. St. G., 'Archæologia,' 268
Greek Architecture, 556
Haddon, R. J., Australian Architecture, 314
Halicarnassus, Restoration of Mausoleum of, 214
Hardy, E., Graphic Statics, 697
Hennebique Ferro-concrete, 73
Herring-Shaw, A., Domestic Sanitation and Plumbing, 557
Holley, C. Dyer, Lead and Zinc Pigments, 413
Holmes, C. J., Picture-making, 214
Hospitals, Mediæval, of England, 696
Houghton, C. E., Elements of Mechanics of Materials, 697
Books, Magazines, etc. (*continued*) :—
House, Growth of the English, 696
Householders and Repairs, 413
Johnston, E., and A. E. R. Gill, Manuscript and Inscription Letters, 697
Lead and Zinc Pigments, 413
Lenygon, F., Decoration, etc., of English Mansions, 412
Letters, Manuscript and Inscription, 697
Lives of the British Architects, 696
London : City, Relics and Memorials of, 697 ; County Council General Powers Act, 516
Macadam, Dustless Road Tar, 697
Magazines and Reviews, 73, 215, 315, 413, 557, 673
Malta, Prehistoric Monuments of, 59
Mansions, English, Decoration and Furniture of, 412
Manuscript and Inscription Letters, 697
Marquand, A., Greek Architecture, 556
Marsh, C. F., Reinforced Concrete, 697
Masonry Construction, 697
Materials, Elements of Mechanics of, 697
Mausoleum at Halicarnassus, Restoration of, 214
Mayr, Dr. A., Prehistoric Monuments of Malta, 59
Mechanics of Materials, Elements of, 697
Mediæval Architecture, 72
Memorials of Old : Staffordshire, 697 ; Sussex, 697
Michaelis, A., Archæological Discoveries, 556
Middlesex, Memorials of Old, 72
Millar, A., Scumbling and Colour Glazing, 697
Mill, H. R., British Rainfall, 314
Mitchell, C. F. and G. A., Building Construction, 557
Monuments : of Christian Rome, 413 ; Prehistoric, of Malta, 59
Mundy, P. D., Memorials of Old Sussex, 697
Municipal and County Engineers, 'Proceedings' of Association of, 697
Nature and Ornament, 72
Norman Architecture in Cornwall, 314
Northumberland, a History of, 413
O'Connor, H., Petrol Air-Gas, 73
Ogilvy, J. S., Relics and Memorials of London City, 697
Organ, the, 413
Ornament, Nature and, 72
Oxford and Cambridge, 697
Painting : British Water-colour, History of, 72 ; Fresco, 215
Pennell, J. and E., French Cathedrals, 556
Petrol Air-Gas, 73
Picture-making, Notes on Science of, 214
Pigments, Lead and Zinc, 413
Planning, Town, 214
Plumbing, etc., 557
Porter, A. Kingsley, Mediæval Architecture, 72
Portland Cement, 314
Potter, T., Concrete, 314
'Proceedings,' Association of Municipal Engineers, 697
Property : How It is Valued, 557 ; Real, Valuation of, 413
Rainfall, British, 314
Raynes, F. W., Domestic Sanitary Engineering, 557

Digitized by Google

ARTICLES, NOTES, AND REVIEWS (continued):—
Books, Magazines, etc. (continued):—
Relics and Memorials of London City, 697
Repairs, the Householder's Duty as to, 413
Richey, H. B., Building Mechanics' Ready Reference, 315
Road Tar Macadam, Dustless, 697
Rome, Monuments of Christian, 413
St. Paul's Cathedral, Memorials of, 556
Sanitary Engineering and Plumbing, Domestic, 557
Sanitation and Plumbing, Domestic, 557
Scotland, Baronial, etc., Antiquities of, 314
Scumbling and Colour Glazing, 697
Sedding, E. H., Norman Architecture in Cornwall, 314
Sewage Disposal Works Management, 315
Sherrill, C. H., Stained Glass Tours in England, 556
Sinclair, W. M., Memorials of St. Paul's Cathedral, 556
Sketch-Book, the Architectural Association, 92, 100
Smith, J. Cruickshank, Oxide of Zinc, 413
Smith, J. W., Dustless Road Tar Macadam, 697
Staffordshire, Old, Memorials of, 697
Stained Glass Tours in England, 556
Stamford and Its Surroundings, 73
Stanton, F. W. S., Coast Erosion, 697
Statham, H. H., the Organ, 413
Statics, Graphic, Elementary Principles of, 697
Stevenson, J. J., Mausoleum at Halicarnassus, 214
Surveys, Handbook on Tacheometrical, 315
Sussex, Old, Memorials of, 697
Tacheometrical Surveys, Handbook on, 315
Tavenor-Perry, J., Memorials of Old Middlesex, 72
Town Planning, 214, 412
'Transactions,' Concrete Institute, 73, 314
Triggs, H. Inigo, Town Planning, 214
Twelvetrees, W. N., Reinforced Concrete Construction, 314
Unwin, Raymond, Town Planning in Practice, 412
Valuation of Real Property, 413
Valuing of Property, 557
Walker, H., Stamford, 73
Ward, J. A., Fresco Painting, 215
Ward, W. H., French Chateaux and Gardens, 412
Water, National Consumption of, 179
Webb, C. A., Valuation of Real Property, 413
Wells, P. A., and J. Hooper, Cabinet Work, Furniture, etc., 412
Westminster Abbey, 573
Wind, Force of the, 557
Woodhouse, F. W., the Churches of Coventry, 413
Workmen's Compensation Statistics, 428
Xydis, C., Tacheometrical Surveys, 315
Zinc, Oxide of, 413

Boys and Girls, Trades for, 575
Bradford-on-Avon, Almshouses, 292
Brass, Earliest English Monumental, 177
Brentford High-street, 36
Brice *v.* Lloyd, Ltd., 134
Bricks: Conductivity, etc., of, 267; Sand-lime, 60
Brickwork, Supervision of, 236
Bridge: Albero Bello, Rome, 609, 635; an Early American Concrete, 582; Blackfriars, 205, 311; Guildford, 265; Kingston, 456, 484; Manhattan, 91; Ngawun River, 179; Philadelphia, 307; St. Paul's, London, 1, 329, 429, 545, 689; the Sioule Gorge, 403, 457
Bridges: Concrete, 403; Newcastle-on-Tyne, 36; Nickel Steel for, 429
Bristol Gas and Tramway Companies, 102, 592
British: Forestry, 3; Housing Methods, Italy, 61; Pavilion, St. Louis Exhibition, 282; School at Rome, 545
Brooklyn, Troublesome Excavation at, 456
Bruges: a Note at, 308; the Sea and, 516
Budget (see also 'Finance Bill'): Building and the, 35, 179, 259, 329, 356, 381, 429, 456, 483, 531; Contractor, a, on the, 101; Land Taxation and the, 204; Playgrounds and the, 149; Surveyors, Auctioneers, and the, 575
Builder Competition for: a Fountain, 16, 46, 73, 100, 161; Design for Façade, No. 9, Conduit-street, W.C., 362, 437, 670, 688
Builders': Information Bureau, the, 380, 391, 418, 469, 500, 619, 647; Quantities, Architect's Charges and, 513, 575
Building Act, London: Building Notices Under the, 515; Euston-road Frontage and the, 42
Building Acts Amendment, London, 3, 147, 514
Building: Budget and (see 'Budget'); Code, New York, 149, 205; Collapse, Philadelphia, 232; Construction, Casualties in, 232; Estates and Restrictive Conditions, 592; Leases, Covenants and, 43; Notices Under the London Building Act, 515; Schemes and Restrictive Covenants, 42; Stones, Durability of, 355; Stones, Swedish, 365; Students, Board of Education Syllabuses for, 180; Trade, the, and the Chancellor of the Exchequer, 483; Trade, the Budget and (see 'Budget' and 'Finance Bill'); Trade, Wages and, 428
Buildings: Ancient, Society for Protection of, 178
Buildings: Demolition of, 60; in Montreal, 47; Old London, Engravings of, 181
Burlington Fine Arts Club, 640
Burmah, the Ngawun River Bridge, 179
Burslem Municipal Buildings, 214, 235, 240, 339
Byzantine Research Fund, 635

CAMBRIDGE, Museum of Archæology, etc., 130
Canada, New Lethbridge Viaduct, 90
Canadian Lock Mishap, 61
Canal: Panama, 634; Problem, the, 545
Canals Commission, the, 483
Canterbury Tower, 486
Cardiff: Corporation and Mr. Seward, 260; Welsh War Memorial, 584
Carron Company, the, 260
Casualties in Building Construction, 232
Catalogues, Trade, 18, 74, 134, 260, 295, 318, 341, 366, 390, 440, 497, 531, 561, 618, 646
Cathedral Church, Khartoum, 291
Cement: Belgian, 494; Chemical, etc., Study of, 152; Fineness and Strength of, 308; Mortar, Bond of, 484; Portland, Hydration, etc., of, 235; Portland in Seawater, 690; Portland, the Nature of, 484; White and Coloured, 120; Works, Modern, 662
Cements and Mortars, 383
Chancellor of Exchequer and the Building Trade, 483
Chancellors and Architects, 260
Chancels, Church, 178
Chapel: Mirfield, 364; of the Pyx, Westminster Abbey, 410
'Charco' Fuel, 575
Cheddar Cliffs, 121
Chelsea, Duke of York's School, 62
Chemical, etc., Study of Mortar, 152
Chillon Castle, the Crypt, 269
Chimney-piece, St. Peter's Hospital, Bristol, 189
Chiswick, Hogarth's House, 546
Church: Chancels, 178; of the Sacré-Cœur, Paris, 427; Tower, Lavenham, 314; Upper, of S. Francesco, Assisi, 130
Churches: Assisi, 130; Frensham, 315; Hackney, 330; Khartoum, 291; Kirkby-in-Ashfield, 466; London (Bishopsgate Without), 388; London (Christ, Spitalfields), 46; London (St. Alfege, Greenwich), 290; London (St. Bartholomew, Smithfield), 240; London (St. Margaret, Lothbury), 4; London (St. Mary Aldermary), 403; London (St. George-the-Martyr, Southwark), 528; London (St. Gregory and St. Paul), 486; London (St. Leonard's, Shoreditch), 160; London (St. Martin-in-the-Fields), 642; London (SS. Anselm and Cecilia, Lincoln's Inn-fields), 61; Lugano, Switzerland, 497; Lythe, 100; Plumstead, 361; Northampton (Holy Sepulchre), 430; Warrington, 389
Cirencester, Hospital, 613, 692
Clapham Junction Fire, the, 689
Cleaning, Vacuum, New System of, 531
Clearing-House, London Goods, 291
Clegg, Mr., on the 'G. B.' System, 356
Clergy House, Aberdeen, 497
Cliffs, Cheddar, 121
Club, Design for an Automobile, 529
Coatings, Preservative, for Iron and Steel, 179
Coke Breeze Concrete, 576
College and Trust, Gresham, 150
College, Hull Training, 557
Collins, A. E., on Sewage Purification, 150
Colorado River, the, 603
Columbia University, the Avery Architectural Library, 583
Columns; Reinfocred Concrete, 120; Strength of, 307
Commerce and Art, 150
Commission, Royal, on: Canals, 483; Sewage Disposal, 311
Commons and Development Bill, 402
Competitions: Berkshire County Offices, 285, 314, 338, 364; *Builder*, for a Fountain, 16, 46, 73, 100, 161; *Builder*, for Façade to No. 9, Conduit-street, London, 362, 437, 670, 688; Burslem Public Buildings, 214, 235, 339; Deptford Branch Library, 381, 413; Eltham Parish Hall, 330, 556; Grimsby Town Hall, 338, 364; Liscard Library, 62; Liverpool University Arts Extension, 183; National, the, 122; Preston Secondary School, 577; Stoke Town Hall Extension, 233, 240, 266; Waterloo, Three Schools for, 330; Weymouth, etc., School, 403; Wrexham Park, 37
Concrete: Arch, the Longest, 635; Beams, Repetitive Loads on, 150; Bridge, an Early American, 582; Bridges, 403; Coke Breeze, 576; House, the Edison, 328; Reservoir, a, 155; under Water, Depositing, 634
Concrete, Reinforced: Aldwych, 234; American Committee on, 229, 307, 429; Buildings, the Height of, 91; Columns, 120; Constructing Small Buildings in, 636; in India, 329; Novel Method of, 636; Regulations, New York, 3; Safe Construction of, 178
Congress: Architectural, Ninth International, 178; National Town Planning, 218; Trades Union, 281, 306
Construction, Modern, Influence of Architecture on, 261, 282
Contractor, a, on the Budget, 101
Contractors: Plant for East River Tunnels, 662; Quantities, 513, 575
Copyright, Architectural, 4, 687
Cornwall County Council Offices, 389
Corruption Act, Case under the, 493
Corstopitum, Roman, 36
Cottage Exhibition, Manchester, 151
Cottages: Model, at Alderton, 335; near Barnet, 184
Cotton Exchange, Liverpool, 16
County Council, London: Apprenticeship and, 575; Architectural Department, 484; Building Acts Amendment, and the, 3, 147, 514; General Powers Act, 516; London Labour, and the, 120; School of Arts and Crafts, 335; Students' Work, Central School of Arts and Crafts, 62; *v.* Metropolitan Railway, 42
Covenants: Building Leases and, 43; Restrictive, Building Schemes and, 42
Croydon, Whitgift Hospital, 121, 126, 334, 382, 429
Crypt, the Guildhall, London, 522
Cubitt, H., on Architecture and Modern Construction, 261

DAVOS, Queen Alexandra Sanatorium, 364
Daylight Saving Bill, 260
Decorations, Mural, for Liverpool Town Hall, 546
De La Hay-street, Westminster, 577
Demolition of Buildings, 60
Denby *v.* Evans, 645
Deptford Branch Library Competition, 381, 413
Dera Ghazi Khan, Doom of, 260
Detroit Tunnel, the, 634
Development Bill, the, 271, 329, 337, 402, 492, 633
Disinfectants: in Water Purification, 380; Notes on, 386
Disputes Act, Trade, 150
Doane, Mr., on Waste of Natural Resources, 281
Dock Disaster, Newport, 35, 205
Doulton's Inspection Yard Gullies, 70
Dover Harbour, 429
Dowdeswell Gallery, the, 669
Drainage: House, Supervision of, 331; Question, a, 185, 493
Dry Rot, Architects and, 429
Dudley Art Society, Old, 490
Dunblane and Doune, 37

EAST Barnet Valley Urban District Council *v.* Stallard, 493
Eaves *v.* Blaenclydach Colliery Company, 33
Edison Concrete House, the, 328
Education Syllabuses, Changes in Board of, 180
Egyptian Antiquities, University College, 36, 64
Electrical: Association, Municipal, 36; Engineering, Progress in, 545; Industry, German, 634
Electric: Damage to Water Mains, 330; Lighting, 576; Light Standards, London's, 201; Water-heater, 308
Electricity: in England and America, 486; the Price of, 61
Electrolysis of Pipes, 689
Eltham Parish Hall Competition, 330, 556
Employer and Employed, 494
Enfield: Old Park, 516; Sanitary State of, 104
Engineering: Buildings, Manchester University, 120; Day, Imperial Exhibition, 286; Model Exhibition, 434
England and America, Electricity in, 486
English Monumental Brass, Earliest, 177
Engravings of Old London Buildings, 181
Estates: Bentley Priory, Middlesex, 91; Building, and Restrictive Conditions, 592
Excavations: at Brooklyn, 456; at Ostia, 150; at Sparta, 356; in Genoa, 121; Recent, in Malta, 59
Exchange, Cotton, Liverpool, 16
Exchanges, Labour, Proposed, 14
Excursion, Architectural Association, Sketches with the, 186, 214
Exhibition, Imperial, Engineering Day at, 286
Exhibitions: Cottage, Manchester, 151; Egyptian, University College, 36, 64; Engineering Model, 434; Picture, 14, 435, 490, 522, 557, 613, 640, 669; South Kensington Sketching Club, 464; Students' Designs at the Royal Academy, 660; Students Work, Architectural Association and Royal College of Art, 117; Students' Work at London County Council Central School of Arts and Crafts, 62, 335; Wedgwood, the, 635
Explosion, the Workington Boiler, 358

FAÇADE, *Builder* Competition for, 362, 437, 670, 688
Fairseat House, Highgate Hill, 205
Farm Buildings, Model, Ottawa, Canada, 241
Fees, Case as to Surveyors', 493
Ferro-concrete, Hennebique, 563
Fifty Years Ago, 16, 46, 72, 100, 160, 214, 266, 290, 314, 338, 412, 438, 466, 496, 528, 586, 616, 642, 670, 695
Finance Bill (see also 'Budget'): Amendments of the, 493; Building Trade and the, 356, 381, 429, 456, 483, 531; 'Minerals' and the, 43, 380; Open Spaces and the, 179; Playgrounds and the, 149; Surveyors and the, 575
Fine Art Society, the, 435, 522, 640
Fire: Aldersgate, 4; Clapham Junction, 689; London Wall, 380; Metropolitan Railway, 36
Fireclays, Valuation of, 119
Fire: Prevention in France, 260; Protection of St. Paul's Cathedral, 3; Tests of Stone, 634
Fires, Forest, 233
Flats: Access to, 493; Hampstead, 48
Flight from London, the, 356
Florence, the Strozzi Palace, 661
Forest Fires, 233
Forestry: British, 3; Germany, 575; Profitable, 575
Foundations, Waterloo Bridge, 661
Fountain: *Builder* Competition for a, 16, 46, 73, 100, 161; Memorial, London, 466
France: Fire Prevention in, 260; Industrial Association of, 607; Notes from, 40, 66, 127, 155, 214, 313, 364, 523, 557, 613; the Sioule Gorge Bridge, 403, 457
French Students' Work, 36
Fuel, Smokeless, 575

GALLERIES, Adelaide, Strand, London, 457
Galveston Sea Wall, 232
Gardens: at South Stoneham House, 670; Undeveloped Land Tax and, 60, 484
Garden Suburb, Hampstead, 89
Gare *v.* Norton Hill Colliery Company, 34
Gary City, Indiana, 380

555347
Digitized by Google

ARTICLES, NOTES, AND REVIEWS (continued):—
Gas : Companies and Tramway Companies, 102, 592 ; Companies' Liabilities, 239 ; Manufacture, Cheaper, 456 ; Petrol-Air, 2
'G. B.' Tramway System, the, 356
Genoa, Excavations in, 121
German : Electrical Industry, 634 ; Systems of Labour Exchange, 453
Germany, Forestry in, 575
Glamorgan County Offices, Design for, 616
Glass : Belgian, 494 ; Design for Simple Leaded, 671
Glastonbury, Almshouse, 67
Globe Theatre, the, Southwark, 333, 516
Goodwin, B. M., on Whitgift Hospital, 382
Gradiograph, the, 412
Grafton Gallery, the, 435
Granite, Norwegian, 380
Greenwich, Church of St. Alfege, 290
Gresham College and Trust, 150
Grimsby Town Hall Extension, 338, 364
Guildhall, London, the, 403, 484, 522
Guild of Architects' Assistants, 456
Gullies, Doulton's Inspection Yard, 70

HACKNEY Parish Church, 330
Hagetmau, Orthez and, 175
Halicarnassus, Order of Mausoleum at, 214
Hall : Chertsey, 496 ; Eltham Parish, 330, 556 ; Glamorgan County, Design, 438 ; Old Leathersellers' Company's, 208 ; Penrhyn Old, 639
Hamburg, Smoke Prevention in, 608
Hamlin, Professor, Lecture by, 661
Hampstead : Garden Suburb, 89 ; Waterlow Court, 48
Handcock and Dykes, Messrs., on Electric Lighting, 576
Harbour, Dover, 429
Harper *v.* Linthorpe Dinsdale Smelting Company, 494
Harrisburg, Viaduct, 576
Harvard House, Stratford-on-Avon, 380
Headlam, Rev. A. C., on Byzantine Studies, 635
Health : Act, the Public, 185 ; of City of Liverpool, 61 ; Public, Motor Traffic and, 260
Heating of Railway Stations, 636
Height of Reinforced Concrete Buildings, 91
Hellenic Society, 515
Hennebique Ferro-Concrete, 563
Hexham Abbey New Nave, 412
Heytesbury, St. John's Hospital, 215
Higham Ferrers, Bede House, 92
Highgate Hill, Fairseat House, 205
Hodgson *v.* West Stanley Colliery Owners, 134
Hogarth's House, Chiswick, 546
Holdings, Small, Act, 102
Holme Lacy, Herefordshire, 546
Home for Consumption, Westmorland, 97
Homes, Cottage, Cheddar Valley, 616
Honours, Birthday, etc., 4
Horsburgh, H., on Modern Cement Works, 662
Hospital : Cirencester, 613, 692 ; Croydon, the Whitgift, 121, 126, 334, 382, 429 ; King's College, Denmark Hill, 130 ; Heytesbury, 215 ; Lyddington, 153 ; Taunton, 39 ; Warwick, 384 ; Wimborne, 589
Hot-water Service Installations, 640
Hounslow, Whitton Park, 282
House : Aberdeen Clergy, 466 ; Dunsley, 72 ; 'Egypt,' New Broad-street, London, 160 ; Elsinore, 100 ; Fairseat, Highgate Hill, 205 ; Iver, 438 ; 'Upton Grey,' Hants, 643 ; Winchester, 72 ; Wokingham, 72 ; York, 530
House Drainage, Supervision of, 331
House of Lords and Housing Bill, 353
House Refuse, 103
Houses : of Historical Interest, 308 ; Unfit for Inhabitation, 281
Housing and Town Planning : Bill, 259, 482 ; Conference, 635
Housing : Bill, Parliament and, 279, 353 ; By-laws and, 313 ; Methods for Italy, British, 61 ; Reform Council, National, 218
Hughes *v.* Clover, Clayton, & Co., 134
Hull Training College, 557
Hydrolytic Sewage Purification, 150

ILLUMINATING Engineering Society, 576
Impact, the Theory of, 609
Imperial Exhibition, Engineering Day at the, 286
Indiana, Gary City, 380
India, Reinforced Concrete in, 329
Indre, St. Genou, 631
Industrial Associations of France, 607
Institute of British Architects, Royal : Essay Prize, 261 ; Library, 281 ; Private Meeting, 633 ; Professor Hamlin's Lecture, 661
Institute of Oil-Painters, 435
Ireland, Monuments of, 700
Iron and Steel : Preservative Coatings for, 179 ; Rust and Defective Welds in, 215
Irrigation in Victoria, 281
Isonzo Masonry Arch, the, 689
Italian Notes, 611
Italy, British Housing Methods for, 61

JEBB, G. R., on Waterways, etc., 545
Joints, the Strength of Riveted, 308

KAPP, Dr., on Electrical Engineering, 545
Kershaw *v.* Brooks, 102
Key, Ceremonial, Birmingham University, 41
Khartoum, Cathedral Church, 291
Kingston Bridge, 456, 484

LABOUR : Exchanges Act and the German Systems, 453 ; Exchanges, Proposed, 14 ; Local, Preference to, 120 ; Tenders and Direct, 545
Lambeth Palace Library, 690
Lamb's Conduits, etc., London, 232
Land : Duty, Undeveloped, and Gardens, 484 ; Taxation, 34, 60, 90, 119, 179, 204 ; Transfer Acts, 592
Landlord and Tenant, 645
Lanercost Priory, 99
Lavenham Church Tower, 314
Law Courts, Additions at the, 484
Leases, Building, Covenants and, 43
Leathersellers' Company's Hall, Old, 208
Lecture by Professor Hamlin, 661
Legal Column, 42, 102, 134, 185, 239, 271, 293, 313, 337, 439, 492, 531, 591, 617, 645
Leicester Gallery, the, 14, 435, 614
Lemmoin-Cannon, H., on Royal Commission on Sewage Disposal, 311
Lepine and Stelling, Messrs., on Electrical Industry, 634
Lethbridge Viaduct, Canada, 90
Lewis, M. H., on Waterproofing, 662
Lewis, T. M., on Coke Breeze Concrete, 576
Lewis *v.* Ronald, 493
Library : Avery Architectural, Columbia University, 583 ; Deptford Branch, 381, 413 ; Institute of Architects, 281 ; Lambeth Palace, 690 ; Liscard, 62
Lift Accident, the Oval, 329
Light, Electric, Standards, London's, 201
Lighting : Electric, 576 ; Street, in London, 90 ; Street, 232
Lime, Some Questions About, 66
Limitations, 285
Lincoln's Inn-fields, Church of SS. Anselm and Cecilia, 61
Liscard, Library Competition, 62
Liverpool : Cotton Exchange, 16 ; Health of City of, 61 ; Houses Unfit for Inhabitation, 281 ; School of Architecture, 69 ; Town Hall Mural Decorations, 546 ; University Arts Extension Buildings, 183 ; University, School of Architecture, 91 ; University and Town Planning, 335
Llantrithyd Church, Basset, etc., Tomb, 286
Loads : Repetitive, on Concrete Beams, 150 ; Upon Rocks and Soils, 259
Local Government Board Report on Unemployment, 231
Lock Mishap, Canadian, 61
London Building Act : Building Notices Under the, 515 ; Euston-road Frontage and the, 42
London Building Acts Amendment, 3, 147, 514
London : Buildings, Old, Engravings of, 181 ; Churches (see 'Churches') ; County Council (see 'County Council') ; Electric Light Standards, 201 ; Flight from, the, 356 ; Goods Clearing House, 291 ; Guildhall, the, 403, 484, 522 ; Labour, 120 ; Proposed St. Paul's Bridge, 1, 329, 429, 545, 689 ; Street Lighting in, 90 ; Trades for Boys and Girls in, 575 ; Wall Fire, the, 380 ; Water, Safety of, 35 ; Water Supplies, the, 205
London, etc., Builders' Bureau (see 'Builders')
Lothbury, Church of St. Margaret, 4
Low or Jackson *v.* General Steam Fishing Company, 185
Lucerne, Thorwaldsen's Lion, 307
Lunette, Design for a Modelled, 413
Lyddington, Jesus Hospital, 153
Lyons : Ancient Aqueducts of, 357 ; Public Works, 495
Lyons & Co. *v.* Mayor, etc., of London, 103

McLEAN'S Gallery, 557
Magazines and Reviews, 73, 215, 315, 413, 557, 673
Malta, Recent Excavations in, 59
Manchester : Cottage Exhibition, 151 ; Refuge Assurance Company, 47 ; University, Engineering Buildings, 120
Manhattan Bridge, 91
Mansion, A Nobleman's, 695
Mansions, the Rating of, 689
Map of the World, a New, 545, 619
Marks *v.* Carne, 33
Marshall *v.* Orient Steam Navigation Company, 592
Mausoleum at Halicarnassus, Order of, 214
Mavitta's Enlarging, etc., Scale, 317
Memorial, Welsh War, Cardiff, 584
Metropolitan Railway Fire, 36
Metz, 543
Minerals, 102
'Minerals' : the Finance Bill and, 43, 380 ; What Are ?, 617
Minsters, Yorkshire, 454
Montreal, Buildings in, 47
Mont Saint-Michel, 3
Monuments of Ireland, National, etc., 700
Monument to Newcomen and Watt, 356
Mortar : Bond of Cement, 484 ; Chemical, etc., Study of, 152
Mortars, Cements and, 383
Mosque, a Saracenic, in Palestine, 605
Motor Traffic and Public Health, 260
Municipal : Buildings, Burslem, 214, 235, 240, 339 ; Corporations, Powers of, 591 ; Electrical Association, the, 36
Mural Decorations for Liverpool Town Hall, 546
Museum : of Archæology, etc., Cambridge, 130 ; Victoria and Albert, 16

NATIONAL : Competition, the, 122 ; Trust, the, 149, 583
Natural Resources, Waste of, 281
Newcastle-on-Tyne Bridges, 36
Newcomen and Watt, Monument to, 356
New English Art Club, 613
Newport Dock Disaster, 35, 205
New Year's Number, 670
New York : Building Code, 149, 205 ; Reinforced Concrete Regulations, 3
Ngawun River Bridge, Burmah, 179
Northampton, Church of Holy Sepulchre, 430
North British Railway Company *v.* Budhill Coal, etc., Company, 617
Norwegian Granite, 380

OFFICES : Accident Assurance, Aldwych, 234 ; Berkshire County, 285, 314, 338, 364 ; Cornwall County Council, 389 ; Glamorgan County Design for, 616 ; New Broad-street London, 160, 466 ; Refuge Assurance Company, Manchester, 47
Open Spaces : Development and, 329 ; the Finance Bill and, 179
Ordnance Survey, 266
Orthez and Hagetmau, 175
Ostia, Excavations at, 150
Ottawa, Canada, Farm Buildings, 241
Oval Lift Accident, the, 329
Oxford-street Roadworks, 232
Ozone, Water Purification by, 91

PAINTS, American Theory as to, 634
Palace : of Ukheithar, the Persian, 515 ; the Strozzi, Florence, 661
Palestine, a Saracenic Mosque in, 605
Panama Canal, the, 634
Paris : Church of the Sacré-Cœur, 427 ; Memorial Statues in, 330 ; Notes from (see also 'France'), 14, 235, 265, 432 ; Street Improvement, 635
Park : Competition, Wrexham, 37 ; the Old, Enfield, 516
Parliament and Housing, etc., Bill, 279
Parthenon Frieze, Part of, 616
Patents : Act, the, 271, 646 ; Revocation of, 239, 618
Pavilion : a Garden, 529 ; British, St. Louis Exhibition, 282
Pegg & Jones *v.* Derby Corporation, 185
Penrhyn Old Hall, 639
Peterborough, Monks' Barn, 282
Petrol-Air Gas, 2
Philadelphia : Building Collapse, 232 ; Walnut-lane Bridge, 307
Picture Exhibitions, 14, 435, 490, 522, 557, 613, 64 , 669
Pipes : Electrolysis of, 689 ; Steam, Water-hammer in, 330
Planning : City, Pittsburg, 577 ; Town (see 'Town')
Plant, Contractor's, for the East River Tunnel, 662
Plaster, Lump, etc., 184
Playgrounds, the Finance Bill and, 149
Pollution, River, 617
Portland Cement : Hydration, etc., of, 235 ; in Sea Water, 690 ; the Nature of, 484
Portland Stone, 576
Portrait : of Dr. Evans, 496 ; Painters, Society of, 557
Powell *v.* Helmsley, 43
Powers of Municipal Corporations, 591
Premises, Oxford-street, London, 466, 670
Preston Secondary School, 577
Price of Electricity, 61
Priory : Estates, Bentley, Middlesex, 91 ; Lanercost, 99
Profession, a United, 634
Property : Compulsory Acquisition of, 293 ; for Street Widening, 591 ; Valuation of, 439, 592
Public Health Act, the, 185
Pulpit, Abbey, Shrewsbury, 233
Pyecombe Church, Window, 387
Pyx, Chapel of the, Westminster, 410

QUANTITIES, Builders', Architect's Charges and, 513, 575
Queen-square, and Lamb's Conduits, London, 232

RAILWAYS, Road Authorities and, 617
Railway : Stations, Heating of, 636 ; Tunnelling Under a, 531
Rating of Mansions, the, 689
Reading, County Council Offices, 285, 314, 338, 364
Refuse, House, 103
Registration, Transvaal Architects and, 385
Reid *v.* Bickerstaff, 42
Reinforced Concrete (see 'Concrete')
Reservoir, a Concrete, 155
Resources, Natural Waste of, 281
Reversions, Tax on, 119
Rhondda Urban District Council *v.* Taff Vale Railway, 617
Richmond Green and the Old Theatre, 357
River : Pollution, 617 ; the Colorado, 609 ; 'River, the,' 130
Riveted Joints, Strength of, 308
Road : Authorities and Railways, 617 ; Works, Oxford-street, London, 232
Roads, Development Bill and, 271, 492 (see also 'Development')
Robertson *v.* Willmott, 43
Rocks and Soils, Loads Upon, 259
Roman : Corstopitum, 36 ; Studies, Society for Promotion of, 456
Rome : Albero Bello Bridge, 609, 635 ; British School at, 545 ; Destroyed Spires of St. Peter's, 378, 388 ; Old and New, 87 ; Ponte Nomentano, 496 ; Published Plans of St. Peter's, 481
Royal Academy : Gold Medal Design in Architecture, 695 ; Mr. Norman Shaw and the, 689 ; Students' Designs at the, 660
Royal College of Art, Students' Work, 117
Rust and Defective Welds in Iron and Steel, 215

ST. BARTHOLOMEW, Smithfield, North Aisle, 240
St. Botolph, Bishopsgate, London, 388
St. Buryan's Rood Screen, 282
St. Genou, Indre, 631
St. George's Gallery, the, 14
St. George-the-Marytr Church, Southwark, 528
St. Gregory and St. Paul's, Church of, London, 486
St. Louis Exhibition, British Pavilion, 282
St. Margaret's Church, Lothbury, 4
St. Martin-in-the-Fields Church, London, 642
St. Mary Aldermary Church, London, 4 3
Saint-Michel, Mont, 3
St. Paul's Bridge, London, Proposed, 1, 329, 429, 545, 689
St. Paul's Cathedral, Fire Protection of, 3
St. Peter's, Rome : Destroyed Spires of, 378, 388 ; Published Plans of, 481
Salamon *v.* Holford, 645
Sanatorium, Queen Alexandra, Davos, 364
Sand-lime Bricks, 60
Sanitary : Institute, Sewage Distributors, 614 ; State of Enfield, 104
Saracenic Mosque in Palestine, a, 605
Sarum, Old, and Its Site, 635
Scale, the 'Best,' 317
Scarborough, Mayor of, *v.* Cooper, 591
School : a New Architectural, 206 ; Clapham London County Council

Digitized by Google

ARTICLES, NOTES, AND REVIEWS (continued):—
Girls', 644; Competition, Weymouth, etc., 403; Coopers' Company's, 438; Duke of York's, Chelsea, 62; Long Eaton, 130; Preston Secondary, 577; Waterloo, Liverpool, 330
School of: Architecture, Liverpool, 69, 91; Arts and Crafts, the London County Council, 62, 335
Schools, Technical, Universities v., 4
Scotland-yard, Old, Changes at, 205
Screen, Rood, St. Buryan's, 282
Sea Water, Portland Cement in, 690
Selfridge & Co., Messrs., Advertisements by, 150
Sewage: Disposal, Royal Commission on, 311; Distributors at Sanitary Institute, 614; Purification, Hydrolytic, 150
Seward, Mr., and Cardiff Corporation, 260
Shaw, Mr. Norman, and the Academy, 689
Shoolbred v. Wyles, 429
Shop Architecture, an Effort in, 362
Shoreditch, St. Leonard's Church, 160
Shrewsbury, Abbey Pulpit, 233
Soule Gorge Bridge, 403, 457
Sketch-Book, the Architectural Association, 92, 100
Sketching Club, South Kensington, 464
Skey & Co. v. Parsons, 102
Slating and Tiling, Measuring, 576
Small Holdings Act, the, 102
Smokeless Fuel, 575
Smoke: Prevention, 281; Prevention in Hamburg, 608; Suppression of, 258
Society for: Checking Abuses of Advertising, 377; Promotion of Roman Studies, 456; Protection of Ancient Buildings, 178
Society of: Architects, Students' Work, 524; British Artists, 435; Painters in Water-colours, 490; Portrait Painters, 557
Soils and Rocks, Loads Upon, 259
Somersby and the Tennyson Centenary, 91
South-Eastern Railway v. Portland Cement Manufacturers, 239
South Kensington Sketching Club, 464
Southwark: Church of St. George-the-Martyr, 528; the Globe Theatre, 333, 516
Sparta, Excavations at, 356
Spires, the Destroyed, of St. Peter's, Rome, 378, 388
Spitalfields, Christ Church, 46
Standardisation, 403
Statues, Memorial, Paris, 330
Steam-pipes, Water-hammer in, 330
Steel, Iron and: Preservative Coatings for, 179; Rust and Defective Welds in, 215
Steel, Nickel, for Bridges, 429
Stock, Page, & Stock, Messrs., 4
Stoke Town Hall Extension, 233, 240, 266
Stone: Fire Tests of, 634; Portland, 576; Swedish Building, 365
Stones, Building, Durability of, 355
Stratford-on-Avon: Almshouses, 315; Harvard House, 380
Streets: Improvement, Paris, 635; Lighting in London, 90
Street: Lighting, 232; Widening, Property for, 591
Streets, New, 293
Strikes v. Arbitrations, 516
Strozzi Palace, the, Florence, 661
Students' Designs at the Royal Academy, 660
Students' Work: Architectural Association and Royal College of Art, 117; French, 36; London County Council School of Arts and Crafts, 62
Stuttgart, Modernising, 340
Suburban Gas Company, South, v. Metropolitan Water Board, 439
Suburbia, 327
Surveyors, etc., and the Budget, 575
Surveyor's Fees, Case as to, 493
Swedish Building Stone, 365
Switzerland, the Wiesen Viaduct, 282
Sword Rest, All Hallows Church, London, 161
Syllabuses for Building, etc., Students, Board of Education, 180

TAUNTON, St. Margaret's Hospital, 39
Tavenor-Perry, J., on the Destroyed Spires of St. Peter's, Rome, 378
Taxation of Land, 34, 60, 90, 119, 179, 204
Tax on Reversions, the, 119
Teachers, Association of, in Technical Institutions, 96
Technical: Bureau, the Architects', 15, 69, 96, 129, 386, 411, 464, 490, 524, 555, 613, 640, 669; Institutions, Association of Teachers in, 96; Schools, Universities v., 4
Tenant, Landlord and, 645
Tenders and Direct Labour, 545
Tennyson Centenary, Somersby and the, 91
Tests: American, as to Paints, 634; Fire, of Stone, 634
Theatre: Globe, Southwark, 333, 516; Old, Richmond Green, 357
Thorwaldsen's Lion, 307
Tiemann, H. D., on Impact, 609
Tiling and Slating, Measuring, 576
Timber Seasoning, 329
Toledo, 255
Tomb: Basset, etc., Llantrithyd Church, 286; of Phillippe Pot, the Louvre, 161
Topographical Society, Architectural and, 121
Tower, Canterbury Cathedral, 486
Town Hall: Chelsea, 529; Grimsby, 338, 364; Liverpool, Mural Decorations for, 546; Stoke, 233, 240, 266
Town Planning: Architects and, 330; Bill, 259, 279, 353, 482; Conference, 635, 659; Congress, National, 218; Liverpool University and, 335
Trade Disputes Act, the, 150
Trades: for Boys and Girls in London, 575; Union Congress, 281, 306
Traffic, Motor, and Public Health, 260
Tramway and Gas Companies, 102, 592
Tramway System, the 'G.B.', 356
Transvaal Architects, Registration and, 385
Trowel, Design for Presentation, 438
Tubbs, P., and a United Profession, 634
Tunnelling Under a Railway, 531
Tunnel: Right to Make a, 239; the Detroit, 634
Tunnels, East River, Contractor's Plant for the, 662

UNEMPLOYMENT, 231
United Collieries v. Simpson, 102
United States: Architecture in the, 661; Smoke Prevention, 281; Timber Seasoning Tests, 329
Universities v. Technical Schools, 4
University: College, Egyptian Antiquities, 36, 64; Manchester, Engineering Buildings, 120
Upper Forest, etc., Company v. Thomas, 439

VACUUM Cleaning, New System of, 531
Valuation of: Fireclays, 119; Property, 439, 592
Vandalism and Anti-Vandalism, 577
Ventilation: Natural, 60; Wind and, 403
Verandahs and Balconies, 62
Viaduct: Harrisburg, 576; the Assopus, 662; the New Lethbridge, Canada, 90; the Wiesen, Switzerland, 282
Victoria and Albert Museum, 16
Victoria, Irrigation in, 281

WAGES, the Building Trade and, 428
Walker v. Crystal Palace Football Club, 591
Wall, Sea, Galveston, 232
Warwick, Leicester's Hospital, 384
Waste of Natural Resources, 281
Water Board, Metropolitan, v. Mulholland, 531
Water: Charges, 531; Depositing Concrete Under, 634; Hot, Service Installations, 640; London, the Safety of, 35; Mains, Electric Damage to, 330; National Consumption of, 179; Purification by Ozone, 91; Purification, Disinfectants in, 380; Rights, 102; Supplies, London, 205; Supplies Protection, 179; Supply, 3, 439
Water-hammer in Steam-pipes, 330
Water-heater, Electric, 308
Waterloo: Bridge Foundations, 661; Liverpool, Three Schools, 330
Waterproofing, 662
Watt and Newcomen, Monument to, 356
Wedgwood Exhibition, the, 635
Westminster Abbey: Chapel of the Pyx, 410; Decay of, 3; the Value of, 573, 586
Westminster, De La Hay-street, 577
Westmorland Home for Advanced Consumption, 97
Weymouth School Competition, 403
Whitehall, etc., Changes at, 205
Whitgift Hospital, Croydon, the, 121, 126, 334, 382, 429, 577
Whitten, H. W., on Wind and Ventilation, 403
Whitton Park, Hounslow, 282
Wild v. Woolwich Borough Council, 591
Willé v. St. John, 592
Wimborne, St. Margaret's Hospital, 589
Wind and Ventilation, 403
Window, Pyecombe Church, 387
Workington Boiler Explosion, 356
Workmen's Compensation, 33, 102, 134, 185, 439, 591, 592
Workmen's Compensation Statistics, 428
World, a New Map of the, 545, 619
Wrexham, Competition for Park, 37

YORKSHIRE: Abbeys, Among the, 34; Minsters, the, 454
Ystradowen Colliery Company v. Griffiths, 33

REPORTS OF MEETINGS, PAPERS READ, LAW CASES, ETC.

Abattoirs, public, 71
Abbey, Sawley, 244
Abydos, excavations at, 550
Adamson, E., on tests of cast-iron, 369
Adams, T., on town planning, 677
Aitken, G. S., on proportion and Grecian temples, 585
Alloys, copper-zinc, 463
Almshouses, Kingsland-road, London, 41
Aluminium-copper-tin alloys, 463
America, architectural education in, 662
American Institute of Architects, 186
Andrew, J. H., and C. A. Edwards on alloys, 463
Apprenticeship, etc., 590, 638
Apprenticeship system, the, 346
Arbitrators, borough engineers as, 166
ARCHÆOLOGICAL SOCIETIES: British Archæological Association, 585; Glasgow and Newcastle, 244; London and Middlesex Archæological Society, 133; Newcastle, 437; Royal Archæological Institute, 121, 151; Surrey, 133; Sussex, 387; Yorkshire, 244
Architects': Assistants, Guild of, 15, 699; law actions by, 138, 165, 703; libel action, 652; Technical Bureau, 15, 69, 96, 129, 386, 411, 464, 490, 524, 555, 613, 640, 669
ARCHITECTURAL ASSOCIATION, annual general meeting, 404; architecture of the Incas of Peru, 578; Cheltenham excursion, 457; conversazione, 584; Debating Society, 389, 438, 609, 614, 698; drainage, house, and sewage disposal, 517; election of members, 457, 517; excursion, annual, 180, 206; exhibition of drawings, 123; house drainage and sewage disposal, 517; meetings, syllabus of, 236; President's address, 404; prize-winners, 124, 404; prizes, etc., awards, 41; report and balance-sheet, 457; schools, the, 123; Varallo, Orta, and Varese, 665; visits (see 'Visits')
Architectural: developments during reign of Queen Victoria, 559; education in America, 662
ARCHITECTURAL SOCIETIES: Aberdeen, 615, 675; American Institute, 186; Birmingham, 469; Canada, 492; Derby, 536; Devon and Exeter, 317; Edinburgh, 37, 559, 585, 641, 675; Glasgow, 469; Glasgow (Craftsmen), 536; Glasgow (Philosophical Society), 623, 680; Gloucestershire, 492; Guild of Architects' Assistants, 15, 699; Institute, Royal (see 'Royal'); Ireland (Association), 439; Ireland (Institute), 439, 530, 698; Leeds and Yorkshire, 530, 553, 559, 615, 675; Liverpool, 469, 584; Manchester, 492, 585; Northern, 99, 317, 411, 526, 585, 675; Nottingham, 675; Sheffield, 438, 469, 559, 675; Society of Architects (see 'Society'); Victorian Institute of Architects, Royal, 292
Architecture: ancient, 370, 386; critical study of, 623; in Italy, Renaissance of, 430, 469; Liverpool School of, 69; of the Incas of Peru, 578; public taste in, 628; steel structures and, 680; town, and colour decoration, 609; town planning and, 677
Art, application of, to industry, 559
Artificial stone for roadways, 68
Assistants, Architects', Guild of, 15
Association of Master House Painters, etc., 321, 332, 346
Asylums Board, Metropolitan, 44, 104, 163, 419, 465, 532, 585, 648, 700
Athens, British School at, 431
Australia, wood floors in, 292
Badger, F. E. G., on reinforced concrete, 584
Bannister, C. O., and H. J. Tabor on solders, 463
Barr, H. R., on reinforced concrete, 675
Baynes, S. W., on electricity works, 246
Belgian builders, visit of, 217
Bell, Miss G., on a Persian palace, 515
Biggs, C. H. W., on dust, 641
Birmingham Building Trades Association, 563
Blackheath, Morden College, 133
Blair, W. N., address to municipal engineers, 12
Blanc, Hippolyte J., on Dunblane and Doune, 37
Bond, G., address to Society of Architects, 550
Bond, N., on the National Trust, 675
Borough Councils, London, etc., 20, 43, 71, 75, 105, 135, 162, 190, 220, 245, 272, 293, 317, 341, 366, 392, 418, 441, 470, 499, 531, 561, 595, 619, 647, 676, 701
Bowman, G. F., on housing, 125
Boyle, R., on architecture and steel structures, 680
Brasses, Somerset club, 585
Bridge, Kingston, 499
Briggs, M. S., on Lecce, 615
British: Association, the, 297; School at Athens, 431
Brixton School of Building, London County Council, 337, 647
Brodie, J. S., on house refuse, 676
Brodrick, Cuthbert, 675
Brown, A. W., on mill, etc., chimney construction, 585
Brown, G. T., address by, to architects, 526
Brown, R., on artificial stone for roadways, 68, 242
Bryce, J., on architecture, 187
Budget, the: a contractor on, 101; building and, 79
Builders' Benevolent Institution, 163, 637
Builders' Clerks' Benevolent Institution, 464
Builders' Information Bureau, 391, 418, 469, 500, 619, 647
Building Act, London, applications under the, 17, 42, 70, 101, 132, 316, 339, 417, 436, 468, 492, 530, 558, 590, 615, 640, 674, 698
Building Act, London, ferro-concrete structures and, 5, 66, 69, 165, 562, 594, 701
Building Act, London, law cases under the, 108, 165
Building line: Euston-road, 562, 594; Pentonville-road, London, 98
Buildings, proposed, in the provinces, 10, 20, 44, 74, 103, 134, 155, 188, 220, 245, 272, 294, 318, 340, 367, 392, 418, 441, 471, 499, 532, 562, 595, 620, 648, 677, 700
Building Trades Employers, Federation of, 136, 699
Burgess, S. E., on interceptor traps, 12

Cantrill, J. H., on apprenticeship, 346
Cardiff, sewage works, 433
Carpenters' Company: examinations, 108; lectures, 430
Carter, G. E., on rural roads, 416
Carulla, F. J. R., on magnetic oxide of iron, 360
Cass, R. W., on sanitary inspection of towns, etc., 96
Castle: Doune, 38; Somerton, 151; Sudeley, 207
Cathedral: Dunblane, 37; Gloucester, 206
Cement: Portland, 585; slabs, houses built of, 623
Challoner, W., on concrete, 269
Cheltenham and district, 180, 206, 457
Chimney construction, mill and factory, 585

Digitized by Google

REPORTS, etc. (continued):—
Church Building Society, 107, 597, 703
Churches: Broadway, 181; Campden, 181; Cheltenham and district, 180, 206; Godalming, etc., 133; Lincolnshire, 121, 122, 151, 152; North Stoke, 387; Sevenhampton, 180; Sudeley, 207; Tortington, 387; Upper Slaughter, 206; Whittington, 180; Winchcombe, 207
Civil and Mechanical Engineers' Society, 413
Clapham, F. D., on Cheltenham, 457
Clegg, S., on the 'G. B.' Tramway system, 359
Coal Smoke Abatement Society, 23
College, Morden, Blackheath, 133
Colls, H., on the Budget, 101
Colour decoration and town architecture, 609
Competitions, 614
Concrete: ferro, structures in London and steel skeleton framework, 5, 23, 66, 69, 165; Institute, the, 129, 611; in the United States, 611; its aggregates and mixing, 269; reinforced, 651, 675; reinforced, and steel frame buildings, 584; reinforced, and the new General Post Office buildings, 494
Congress, Royal: Archæological, Lincoln, 121, 151; Sanitary, Leeds, 93, 124, 156, 209
Contracts: rates of wages, etc., 693; trade union rates and, 131
Conversazione, Architectural Association, 584
Copper-zinc alloys, 463
Corbridge-on-Tyne, excavations at, 244, 317
Corrosion of iron, 360
Corstopitum excavations, 244, 317
Cotton, J. S., on Egypt exploration, 550
County: Council, London, General Powers Bill, 5, 23, 66, 69, 165; Hall, London, new, 98, 346, 557, 640, 641
Court of Common Council, 43, 104, 136, 412, 465, 533, 595, 642, 694
Cowsheds, 96
Cromer, Lord, on Egypt exploration, 550
Cullen, A., on architecture, 623

Dangerous structures, 40, 238
Davidge, W. R., on town planning, 586
Decoration: colour, and town architecture, 609; wall, materials and treatment in, 675
Decorative art for the masses, 332
Destructor, a modern, 288
Destructors, dust, bulk feeding of, 159
Dibdin, W. J., on sewage disposal, 440
Dinners: Birmingham Builders, 563; Builders' Benevolent Institution, 637; Edinburgh and Leith Builders, 677; Institute of Builders, 408; Institute of Sanitary Engineers, 590; London Master Builders, 217; Manchester Society of Architects, 585; Northampton Master Builders, 441; Sunderland Builders, 699; Tyne and Blyth District Building Trades Federation, 647
Disconnecting traps, 63
District Surveyors': Association, Lower Thames Valley, 393; fees, 624
Dixon, E. J., on architects' assistants, 15
Doddington, S. M., on abattoirs, 71
Dove, F. L., on Brixton School of Building, 337
Drainage: by-laws, London, 71; house, and sewage disposal, 517; interceptor traps and ventilation, 12
Drains, house, intercepting traps on, 95
Dry rot, law action as to, 446
Dunblane and Doune, 37
Durham sewerage works, 219
Dust: destructors, bulk feeding of, 159; mechanics of, 641
Dwellings, sanitary inspection of, 96

Easdale, W. C., on sludge disposal, 691
Eden, F. C., on Varallo, Orta, and Varese, 665
Edinburgh and Leith Building Trades Association, 677
Edinburgh, German-made schools, 533
Education: architectural, in America, 662; Committee, London County Council, 20, 21, 44, 70, 103, 129, 418, 442, 495, 533, 563, 594, 620, 647, 649, 678; industrial, and apprenticeship, 638
Effluents: quality of, 559; sewage, purification for, 95
Egypt Exploration Fund, 550
Electricity works, St. Pancras, 246
Engineering profession, status of the, 389
Engineering Societies: Association of Engineers-in-Charge, 335; Civil and Mechanical Engineers, 413; Engineering and Scientific Association of Ireland, 585; Illuminating Engineering Society, 321, 494; Institute of Sanitary Engineers, 440, 494, 590; Institution of Civil Engineers, 465; Institution of Electrical Engineers, 559; Institution of Municipal Engineers, 219, 389, 494, 559, 690; Junior Institution of Engineers, 42, 494, 641; Municipal and County Engineers, 11, 40, 68, 238, 242, 246, 269, 288, 358, 414, 433; Society of Engineers, 101, 335, 389, 530, 641
Enock, C. R., on architecture of the Incas of Peru, 578
Euston-road building line, 562, 594, 701
Evans, Dr., on Palace of Knossos, 488
Evennette, C. T., on Oriental sanitary engineering, 494
Examination Board, Sanitary Inspectors', 194
Excavations: at Abydos, 550; Corstopitum, 244, 317; Gilsland, 437; in North Greece, 297
Exchange, Glasgow Building Trade, 499
Excursion, Architectural Association, to Cheltenham, 180, 206

Factory chimney construction, 585
Fairley, T., on water supplies of Yorkshire, 158
Federation of Building Trade Employers: National, 136; Northern Counties, 699; Tyne, etc., 647; Yorkshire, 337
Ferro-concrete (see 'Concrete')
Ferromac, 159
Filtration, mechanical, 158
Fire and fire-resisting construction, 641
Fletcher, Banister, on ancient architecture, 370, 386
Fletcher, F. M., on wall decoration, 675
Floors, wood, in Australia, 292
Footways, artificial stone for, 68, 242
Fowler, G. J., on quality of effluents, 559
Freemantle, Dr., on Letchworth Garden City, 125
Friend, J. N., on iron, 360

Gammell, K., on competitions, 614
Garden City of Letchworth, 125
'G. B.' tramway system, the, 359
George, Ernest: address by, to the Royal Institute of British Architects, 486; on town planning, 64
German-made schools, Edinburgh, 533
Gilbert, Cass, on architecture, 186
Gladwell, A., on the road question, 159
Glasgow: Architectural Craftsmen's Society, 536; Building Trade Exchange, 499; Philosophical Society, 623, 680; Trades Council, 20
Gloucester, Architectural Association at, 206
Godalming, etc., archæological visit to, 133
Gourlay, C., on building a house, 536
Greece, North, excavations in, 297
Grecian temples, proportion and, 585
Green, E., on Somerset club brasses, 585
Greenwich generating station, 101
Grover, F., on smoke prevention, 159
Guild of Architects' Assistants, 15, 699

Hale, W. J., address to architects by, 438
Hall: Bashall, 244; County, new, London, 98, 346, 557, 640, 641
Hamlin, Professor, on architectural education in America, 662
Hampshire, rural roads in, 416
Harding, Col. T. W., on sanitary matters, 94
Harpur, W., on Cardiff sewage works, 433
Hart, G. A., on sewage treatment, 95
Haverfield, Professor, on Corstopitum excavations, 244
Heating, etc., Engineers, Institution of, 79
Hellenic Society, 515
Horsfield, J. N., on Registration, 389
House: building a, 536; drainage and sewage disposal, 517; drains, intercepting traps on, 95; painting of a, 615; refuse, collection, etc., of, 676
House Painters, etc., Association of Master, 321, 332, 346
Houses: built of cement slabs, 623; manor, Cheltenham district, 181, 206, 207
Housing of the working classes, 69, 411, 436
Housing: question, the, 125; Town Planning and, Bill, 103
Houston, A. C., on storage of water, 158
Howard, E., on planning of towns and estates, 698
Hudson, A. E., on intercepting traps, 95
Humphrey, R. L., on concrete in the United States, 611
Hunter, Sir R., on the National Trust, 583

Illuminating Engineering Society, 321, 494
Incas of Peru, architecture of the, 578
Industrial education and apprenticeship, 638
Industry, art and, 559
Institute of: Architects, American, 186; Builders, 408; Metals, 107, 321, 346, 463
Institute of Sanitary Engineers: annual dinner, 590; Oriental sanitary engineering, 494; sewage disposal, 440
Institute, Royal Archæological, 121, 151
Institute, Royal, of British Architects: architectural education in America, 662; business meeting, 633; deceased members, 486, 662; District and Building Surveyors, 486; examinations, 128; Gold Medal, Royal, presentation of, 488; Knossos, Palace of, 488; planning and laying-out of public places, 547; portrait of Mr. Collcutt, 547; President's address, 486; Special meeting, 41
Institution of Heating, etc., Engineers, 79
Institution of Municipal Engineers, 219, 389, 494, 559, 690
Intercepting traps on house drains, 95
Interceptor traps, drainage, and ventilation, 12
Ireland, Engineering and Scientific Association of, 585
Iron and Steel Institute, 360
Italian city, an unknown, 615
Italy, Renaissance of architecture in, 430, 469

Johnston, P. M., on Tortington Priory, etc., 387

Kingston bridge, 499
Kirkby, R. G., on elementary schools, 156, 209
Kirkcaldy, W. G., on testing of materials, 68
Kitson, S. D., on Sawley Abbey, 244
Klingender, F. L., on wood floors in Australia, 292
Knossos, the Palace of, 488

Labour clause, London, 669
Lancashire, W. T., on housing, Leeds, 126
Lecce, 615
Leeds, Royal Sanitary Congress, 93, 124, 156, 209
Legal: Bankart *v.* Tanner & Sons, contractors' claim against architect, 24, 108, 139; Blackwell & Co. *v.* Mayor, etc., of Derby, borough engineers as arbitrators, 166; Bramall *v.* Gowing, wrongful dismissal, 473; Brown *v.* Mickel & Co., architect's action against builder, 165; Building Act cases, 108, 165, 562, 594, 701; Corporation of London *v.* Pitcher & Sons, what is a 'builder'? 505; Corporation of London *v.* Willett, driving a traction engine, 394; Davidge *v.* Stanford's House Property Investment Company, Ltd., Building Act case, 165; Dawson *v.* Hibburn Colliery, etc., action for fees, 703; Dicksee, B. J., *v.* Galbraith Brothers, district surveyor's fees, 624; Dicksee *v.* Pusser, Building Act case, 108; East Barnet Valley Urban District Council *v.* Stallard, drainage dispute, 474; Evans *v.* London and Provincial Bank, Ltd., ancient light case, 349; Foley's Charity Trustees *v.* Dudley Corporation, claim for rent for land of highway, 652; Gray *v.* Central London Properties Association, action by a builder, 567, 598; Ham Hill and Doulting Stone Company *v.* Rees, appeal by an architect, 138; Harper *v.* Linthorpe Dinsdale Smelting Company, Ltd., claim by a bricklayer, 505; Harrison *v.* Clitheroe Roller Skating Rink Company, ancient light case, 349; Hawkins *v.* the King, action by contractors, 108, 346; Haydon & Sons *v.* Millis, action by builders, 505; Levy *v.* Patman & Fotheringham, injury to premises, 652; light and air cases, 24, 349; London County Council *v.* Bell, brickbats, 505; Macclesfield, Earl of, *v.* Pocklington, ancient light case, 24; Mason *v.* Fulham Borough Council, builder's claim, 139; Metropolitan Railway Company and others *v.* London County Council, Tribunal of Appeal case, 562, 594, 701; Queenborough Cement Company *v.* Page, alleged slander, 627; Rice *v.* Swansea United Breweries, wall dispute, 703; Shoolbred *v.* Wyles, dry rot case, 446; Smith *v.* Dowle, architect's libel action, 652; South-Eastern Railway Company *v.* Associated Portland Cement Company, right to make tunnel, 536; Tribunal of Appeal cases, 562, 594, 701; Tubbs *v.* Esser, breach of covenant, 681; Wild *v.* Woolwich Borough Council, withdrawing a notice to treat, 536; Willé *v.* St. John, Streatham building dispute, 567
Letchworth Garden City and town planning, 125
Libel action, architect's, 652
Light and air cases, 24, 349
Lincoln: Association of Municipal Engineers at, 358; Royal Archæological Institute at, 121, 151
Lincolnshire, main roads of, 359
Liverpool: Health Committee, 473; School of Architecture, 69
London and Middlesex Archæological Society, 133
London: Builders' Information Centre (see 'Builders'): County Hall, new, 98, 346, 557, 640, 641; drainage by-laws, 71; ferro-concrete structures in, and steel skeleton framework, 5, 23, 66, 69, 165; work for London men, 98
London County Council, 15, 20, 21, 22, 23, 41, 44, 69, 71, 97, 131, 411, 436, 464, 490, 527, 557, 589, 614, 640, 669, 693
London County Council Education Committee, 20, 21, 44, 70, 103, 129, 418, 442, 495, 533, 563, 594, 620, 647, 649, 678
London County Council: Powers for the, 5, 23, 66, 69, 165; School of Building, Brixton, 337, 647
London Master Builders' Association, 188, 217, 362, 462, 521, 583, 692
Loveday, W. F., on a modern destructor, 288

McDermid, J. H., on direct tendering, 346
MacDonald, F. A., on reinforced concrete, 651
Manor houses, Cheltenham and district, 181, 206, 207
Martin, A. J., on sewage treatment, 94
Martin, H., on the Budget, 79
Master Builders' Associations (see also 'Federation'): Bath, 20; Birmingham, 563; Coventry, 471; Edinburgh, 533; Edinburgh and Leith, 677; Leeds, 103; London, 188, 217, 362, 462, 521, 583, 692; Northampton, 441; Peterhead, 289; Sheffield, 289, 441; Sunderland, 699
Materials, testing of, 68
Maule, H. P. G., on the Architectural Association schools, 123
Mechanical ventilation, 79
Mellis, J. S., on painting a house, 615
Melvin, G. M., on: feeding dust destructors, 159; ferromac, 159
Menpes printing works, Watford, 42
Metals: Institute of, 107, 321, 346, 463; non-ferrous, elastic breakdown of, 463
Middlesex County Council, 19, 138, 499
Middleton, G. A. T., on registration, 389
Mill and factory chimney construction, 585
Morris, J. A., on art and industry, 559
Moss-Flower, T. J., on disconnecting traps, 63
Municipal and County Engineers, Association of: Cardiff meeting, 433; Lincoln meeting, 358; St. Pancras meeting, 11, 40, 68, 238, 242, 246; Westminster meeting, 269, 288; Winchester meeting, 414
Municipal Engineers, Institution of, 219, 389, 494, 559, 690
Municipal superannuation, 690

National Trust, the, 583, 675
Naville, Mr., on excavations at Abydos, 550
Nettlefold, Mr., on a practical town, 194
Norrington, J. P., on sewage, etc., 414

Oriental sanitary engineering, 494
Oxford, Architectural Association visit to, 4

Painters and public health, 346
Painting of a house, 615
Pegge, J. T., on municipal superannuation, 690
Persian palace, a, 515
Peru, architecture of the Incas of, 578
Peters, T., on painters and public health, 346
Pite, Beresford, on: architecture and town planning, 677; town planning, 64

Digitized by Google

REPORTS, etc. (continued):—
Planning: elementary school, 156, 209; of public places, 547; town, 64, 124, 698
Plumbers, registration of, 158
Plumbo-solvency in water, 158
Pordage, A., on fire-resisting construction, 641
Portland cement, 585
Presidents' address: American Institute of Architects, 186; Architectural Association, 404; Association of Master House Painters, 321; Civil and Mechanical Engineers, 413; Leeds and Yorkshire Architectural Society, 553; Municipal and County Engineers, 12; Northern Architectural Association, 526; Royal Institute of British Architects, 486; Royal Sanitary Congress, 94, 124, 125; Sheffield Society of Architects and Surveyors, 438; Society of Architects, 550; Surveyors' Institution, 523
Primrose, J. S. G., on spelter, 463
Printing works, Menpes, 42
Priory, Tortington, 387
Proportion and Grecian temples, 585
Puttrell, J., address by, 321

Quantities: non-provision of, by building owner, 435; quantity surveyor and, 553
Quantity Surveyors' Association, 15, 435, 553

Radcliffe, Professor J., on ventilation, 79
Refuse, house, collection, etc., of, 676
Registration of: architects, 389; plumbers, 158
Renaissance of architecture in Italy, 430, 469
Ricardo, H., on: colour decoration and town architecture, 609; Renaissance of architecture in Italy, 430, 469
Richmond, Sir W., on: coal smoke, etc., 23; decorative art, 321, 332
Roadmaking, 153
Roads: main, of Lincolnshire, 359; maintenance of rural, 416
Roadways, artificial stone for, 68
Robinson, Mr., address to architects by, 553
Robinson, P., on town planning, 124
Roman remains, Corstopitum, 244
Ross, R., and J. Race on mechanical filters, 158
Rothwell sewage works, 94
Rugan, H. F., and H. C. H. Carpenter, on the growth of cast-iron, 361

St. Pancras electricity works, 246
Sanitary: Congress, Royal, Leeds, 93, 124, 156, 209; engineering, Oriental, 494; inspection of towns, 96
Sanitary Engineers, Institute of, 440, 494, 590
Sanitary Inspectors': Association, 63; Examination Board, 194
Sanitary Institute, Royal: collection and disposal of house refuse, 676; Congress, Brighton, 505, 623; Congress, Leeds, 93, 124, 156, 209; examinations, 22, 49, 444, 565, 651, 680; quality of effluents in relation to standards, 559
Scholarships, trade, 411
School of: Architecture, Liverpool 69; Building, London County Council, 337, 647
School planning, elementary, 156, 209
Schools, the Architectural Association, 123
Scott-Moncrieff, W. D., on house drainage, 517
Sewage: disposal, 440; disposal, house drainage and, 517; effluents, standards of purification for, 95; purification, 530; treatment of, 94; waste liquors and, 414
Sewage works: Cardiff, 433; Durham, 219; Rothwell, 94
Sewer: contract difficulties, London County Council, 411; tunnelling, 14
Sewers: drains and, ventilation of, 63; ventilation of, 12
'Share and Mattock, With,' 675
Shelmerdine, A., on Liverpool Health Committee, 473
Shenton, H. C. H., on water sterilisation, 158
Silcock, E. J., on Rothwell sewage works, 94
Simpson, F. W., on architectural developments, 559
Simpson, J. W., on the Royal Institute of British Architects, 675
Slabs, cement, houses built of, 623
Sludge disposal, 691
Smith, C. A., on elastic breakdown of non-ferrous metals, 463
Smith, C. C., on plumbo-solvency in water, 158
Smith, J. G., on Portland cement, 585
Smoke: Coal Abatement Society, 23; prevention, 159
Snape, A. E., on sewer tunnelling, 14
Society of Architects: annual meeting, 432; President's address, 550; social evening and prize distribution, 524; town planning, 671; visit to Gatton and Merstham, 129
Solders, surface appearance of, 463
Sommerville, D., on sewage purification, 530
Spelter, production of pure, 463
Starkey, T. A., on water analysis, 158
Steel: frame buildings, reinforced concrete and, 584; skeleton framework and ferro-concrete structures in London, 5, 66, 69; structures, architecture and, 680
Stenning, A. R., address by, to surveyors, 523
Sterilisation of water, 158
Stone, artificial for: footways, 242; roadways, 68
Structures, dangerous, 40, 238
Sudeley, Architectural Association visit to, 207
Superannuation, municipal, 690
Surrey Archæological Society, 133
Surveyors' Institution: local taxation, 641; President's address, 523; town planning systems, 586

Tanner, H., address to Architectural Association, 404
Taste, public, in architecture, 623
Taylor, H. W., on Durham sewerage works, 219
Teachers in technical institutes, Association of, 96
Technical: Bureau, Architects', 15, 69, 96, 129, 386, 411, 464, 490, 524, 555, 613, 640, 669; institutes, Association of Teachers in, 96
Temples, Grecian, proportion and, 585
Tendering, direct, and subcontracting, 346
Testing of materials, 68
Thames Valley, Lower, District Surveyors' Association, 393
Thomas, G. A., on the engineering profession, 389
Thomson, J. T., on sewage effluents, 95
Thropp, J., on Lincolnshire roads, 359
Tortington Priory, 387
Town: a practical, 194; architecture and colour decoration, 609; planning, 64, 124, 547, 586, 671, 677, 698
Towns, etc., sanitary inspection of, 96
Trade: scholarships, 411; union rates and contracts, 131
Tramway system, the 'G. B.,' 359
Traps: disconnecting, 63; drainage interceptor, and ventilation, 12; intercepting, on house drains, 95
Tribunal of Appeal under London Building Act, 582, 594, 701
Triggs, H. Inigo, on planning, etc., of public places, 547
Tunnelling, sewer, 14
Turner, T., and M. T. Murray on copper-zinc alloys, 463
Twelvetrees, W. N., address by, to engineers, 413
Tyne, Building Trade Federation, 647

United States, concrete in the, 611
Unwin, R., on town planning, 65, 671, 698

Varallo, Orta, and Varese, 665
Ventilation: mechanical, 79; of sewers, 12, 63
Visit, Concrete Institute, works of Associated Portland Cement Manufacturers, 129
Visit, Edinburgh Architectural Association: Dunblane and Doune, 37
Visit, Society of Architects, Gatton and Merstham, 129
Visits, Architectural Association, to: Ardenrun Place, near Godstone, 129; Messrs. Martyn & Co.'s works, 208; Orient line S.S. *Orvieto*, 583; Oxford, 4
Visits, Junior Institution of Engineers: Menpes printing works, 42; embankment works, London County Council Hall, 641
Visits, Society of Engineers: Greenwich generating station, 101; organ building works, 335

Wages, rates of, etc., 693
Walker, W. B., on cowsheds, 96
Wall decoration, materials and treatment in, 675
Water analysis, 158
Water Board, Metropolitan, 48, 104, 419, 532, 648
Water: plumbo-solvency in, 158; sterilisation, 158; storage, 158; supplies of Yorkshire, 158
Watson, T. A., on General Post Office new buildings, 494
Westminster City Council, 20, 75, 160, 442, 498, 619, 676
Willis, E., on dangerous structures, 40, 238
Wilson, Butler, on Cuthbert Brodrick, 675
Wilson, W. G., on competitions, 614
Winchcombe, the Architectural Association at, 207
Woodward, W., on quantities, etc., 553
Yool, W. G., on: German-made schools for Edinburgh, 533; houses built of cement slabs, 623
Yorkshire: Federation of Building Trade Employers, 337; water supplies of, 158

CORRESPONDENCE.

SUBJECTS OF LETTERS.

Advertising boards, 418
Apprenticeship, National Institution of, 390
Architectural: copyism, 192; copyright and professional etiquette, 74
Architecture: a diploma course in, 19, 45, 74; mediæval, 135

Birkenhead building mishap, the, 560, 618
Budget, the, and: building, 162, 190; private enclosed gardens, 391
Builders taking out quantities, 593
Building Act amendments, London, 191, 220

Cheddar cliffs, 161
Competition: Eltham parish hall, 319; Middlesbrough Library, 19, 45, 74; Stoke-on-Trent Town Hall, 341
Concrete: ferro, 135; house, the Edison, 391; Institute, the, 699; reinforced, 295, 318, 470
Copyism, architectural, 192
Copyright, architectural, and professional etiquette, 74
Correction, a, 45
County Council, London, General Powers Bill, 191, 220

Decorators, Master, London Association of, 45
Diploma course in architecture, 19, 45, 74
Drainage, house, 560, 593, 646
Drains, ventilating trap on, 646
Dry rot: in buildings, 470, 498, 531; pugging and, 561

Edison concrete house, the, 391
Eltham parish hall competition, 319
Employment register, Society of Engineers', 440
Engineering, domestic, 295
Etiquette, professional, architectural copyright and, 74

Ferro-concrete, 135
Frieze of the Parthenon, 646

Gardens, private enclosed, the Budget, and, 391
Gateway, the XIIIth century Smithfield, 135
Greenwich, St. Alfege, 319

Hall, Eltham parish, competition, 319
Hamlin, Professor, lecture by, 676
Heating, methods of, 192
Hospital, Whitgift, 162
Hot-water radiators, effect of painting, 265
House: drainage, 560, 593; the Edison concrete, 391

Insects in timber roofs, 319, 391
Institute of British Architects: by-laws as to compulsory retirement, 45; Council of the, 19
Institute, the Concrete, 699
Intercepting trap, the, 561, 593, 646

Land taxes, *re*, 191
Lecture, Professor Hamlin's, 676
Library, Middlesbrough, 19, 45, 74
Lime burning, 19
Lion, Thorwalsden's, Lucerne, 342
London: Association of Master Decorators, 45; County Council General Powers Bill, 191, 220
Lucerne, Thorwalsden's lion, 342

Mediæval architecture, 135
Middlesbrough Library competition, 19, 45, 74

Painting hot-water radiators, effect of, 265
Parthenon, frieze of the, 646
Pugging, dry rot and, 561

Quantities, builders and, 533

Radiators, hot-water, effect of painting, 265
Reinforced concrete, 295, 318, 470
Resin in woodwork, 561
Roofs, timber, insects in, 319, 391
Rot, dry: in buildings, 470, 498, 531; pugging and, 561

St. Alfege, Greenwich, 319
Serpentine, the, 74
Shaw, Mr. Norman, and drainage, 593
Shoolbred *v.* Wyles, 498
Slating, 192, 220, 245, 273
Slating and tiling, measuring, 646
Smithfield gateway, the XIIIth century, 135
Society of Engineers' employment register, 440
Soil-pipe system, Mr. Norman Shaw's, 593
Sound, hollow walls conveying, 498
Steel skeleton framework in buildings, 45
Stoke-on-Trent Town Hall competition, 341

Tiling, slating and, measuring, 646
Town Hall, Stoke-on-Trent, 341
Trap, the intercepting, 561, 593, 646

Walls, hollow, conveying sound, 498
Whitgift hospital, 162
Woodwork, resin in, 561

WRITERS OF LETTERS.

Ackermann, A. S. E., Society of Engineers' employment register, 440

Babbitt, L., domestic engineering, 295
Ball, A. J. L., London County Council General Powers Bill, 220
Bullen, W., *re* land taxes, 191

Carmichael, J., correction, 45
Clarke, Max, dry rot in buildings, 470
Collier, R. W., St. Alfege, Greenwich, 319
Collins, A. E., the Concrete Institute, 699
Crow, Arthur, the Council of the Royal Institute of British Architects, 19

Davidson, A., London Association of Master Decorators, 45
Davis, A. C., Edison concrete house, the, 391
De Vesian, J. S. E., ferro-concrete, 135

Follit, W., measuring slating and tiling, 646
Fraser, G. de C., Birkenhead building mishap, 560

Garbutt, Matt, London County Council General Powers Bill, 191
Gotch, J. A., the Institute of Architects and compulsory retirement, 45

Hall, J., reinforced concrete, 470
Harris, E. Swinfen, dry rot in buildings, 498
Harston, C., reinforced concrete, 318
Honeyman, J., ventilating trap on drains, 646
Hopkins, W. B.: Mr. Norman Shaw's soil-pipe system, 593; Shoolbred *v.* Wyles, 498
Hoskins & Brown, Kitching & Le and W. H. Bourne, Middlesbrough Library competition, 19, 74
Humphreys, G. A., painting hot-water radiators, 265

Indented Steel Bar Co., Ltd., 618

Digitized by Google

CORRESPONDENCE (continued):—
Writers of Letters (continued):—
Jones, F., & Co., dry rot in buildings, 498
Kitchen, E. Stanhope, house drainage, 560
Kitsell, T. Rogers, architectural copyism, 192
Lang, H. H. B., insects in timber roof, 391
Lawrence-Hamilton, J., Budget, the, and private enclosed gardens, 391
Lethaby, W. R., frieze of the Parthenon, 646
Lovegrove & Papworth, the Budget and building, 190
Lovegrove, H., the lion at Lucerne, 342
Lynam, C., Stoke-on-Trent Town Hall, 341
MacAlister, J., Middlesbrough Library competition, 74
Mansford, F. H., hollow walls conveying sound, 498
Mouchel, L. G., and Partners, ferro-concrete, 135
Munby, A. E., Professor Hamlin's lecture, 676
Pepler & Allen, Whitgift hospital, 162
Phillips, R.: dry rot and pugging, 561; the disconnecting trap, 593
Porter, A. Kingsley, mediæval architecture, 135
Reilly, C. H., a diploma course in architecture, 19
Robson, E. R., 'dry rot' in buildings, 531
Sandwith, W. F. G., the XIIIth century Smithfield gateway, 135
Seth-Smith, W. H., a diploma course in architecture, 74
Shanks, R., insects in timber roofs, 319
Shaw, R. Norman, house drainage, 560
Simpson, F. M., a diploma course in architecture, 45
Smith & Brewer, dry rot in buildings, 498
Stetcher, J., advertising boards, 418
Tall, J. M., reinforced concrete, 318
Truscott, G. Wyatt, national institution of apprenticeship, 390
Waldram, P. J., London County Council General Powers Bill, 191
Weaver, E. R., the intercepting trap, 561
Wynne, J., methods of heating, 192

GENERAL.

Abattoir, Belfast, 650
Abattoirs, public, 71
Abbey: Arbroath, 192; Bardney, 107; Selby, 266; Tintern, 374
Abbey of Solesmes, sale of the, 138
Aberdeen: building in, 22, 164, 247, 344, 472, 535; deep-water berth, 535; granite and French tariff, 504; skating rink, 393, 431; variety hall, 621; water supply, 596
Academy: Bristol Fine Arts, 534; Forfar, 650; Hamilton, 443
Accidents: building, 473; building, school, Evesham, 624; in ferro-concrete, 107; on new post office buildings, 78
Advertisements, landscape, etc., Lake District, 504
Alhambra, the, 503
Almshouses: Bury St. Edmund's, 596; King's Lynn, 335; Nottingham, 534
Ambulance-station, Burnopfield, 273
Anthracite heating-stove, an, 297
Appointments, 22, 49, 78, 106, 137, 164, 222, 296, 369, 420, 597, 623, 702
Apprenticeship: in France, 680; Institution of, 194, 464; Southwark, 680
Arbitration, building trade, Southampton, 79
Architects and St. Paul's Bridge, 703
Architect's estates, deceased, 107, 165, 222
Architectural: competition, Rome, 394; drawing competition, 390
Art sales, recent, 503, 623
Association of Master House Painters, 194
Asylum: Bristol, 22, 193; Chester, 702; Gateshead, 502; Menston, 650; Wells, 344
Australia, building in, 624
Ayr Auld Brig, 300

Baltic and Black Sea, waterway, 565
Bank: Aberystwyth, 368; Ellesmere Port, Liverpool, 164; Lincoln, 48; London, 22; Maidstone, 22; Neath, 679
Banner, Church Congress, 445
Barracks, Egypt, 320
Baths: Abertillery, 164; Altrincham, 234; Gravesend, 621; Harrogate, 387; Jarrow, 368; Sheffield, 137
Bedford, Shire Hall, 502
Belfast: abattoir, 650; church, 192; church renovation, 21; factory extension, 443; housing, 623; sewage problem, 106
Belgian glass and cement, 494
Berlin: Friedrichstrasse gallery, 503; Ice Palace, the, 567
Bermondsey, benefactions for improvements, 651
Berne, postal union monument, 503
Berth, deep-water, Aberdeen, 535
Bilbao, building in, 346
Birmingham: building by-laws, 624; City Engineer's report, 108; electric supply, 193; extension of, 138; Municipal School of Art, 297; University, 297
Blackfriars bridge and subways, 222
Blyth's wharf, electricity supply station, 501
Boulevard: a Mile End, London, 504; by the Wandle, a, 566
Bournemouth, pier pavilion, 679
Bradford: Technical College, 564; Town Hall extension, 393
Brazil, British cement in, 446
Brazilian timber, 503
Breakwater, Hawaiian, 289
Brick: clay and the Budget, 248; making at Fletton, 370; trade, the, 369
Bridge: building, Russia, 703; old, of Cologne, 622
Bridges: Blackfriars, London, 222; Doncaster, 622; Durham, 641; Earlscolne, 247; Ely, Cardiff, 596; Fossdyke, 344; Frankfort, 222; Kirkstall, 444; London, St. Paul's, 197, 566, 703; Newport, 193; New Shoreham, 345; Norwich, 703; Prague, 107; Quebec, 370; Rome, 445; Russia, 503; Seaham Harbour, 502; Stakeford, 222, 321; Sunderland, 78; Warrington, 497, 646; Whitby, 193
Bristol: asylum, 22; Fine Arts Academy, 534; home for sailors, 344 motor garage, 621; the 'Dutch House,' 22
British: Academy, the, 49; Fire Prevention Committee, 535; School, Rome, 22
British Museum: annual report, 106; appointments, 137, 164; new buildings, 164; recent acquisitions, 78
Brixton School of Building, 106
Brussels International Exhibition, 164, 223, 623
Budget: brick clay and the, 248; proposals, the, 79
Buenos Aires, railway, etc., exhibition, 23
Builders as councillors, 420
Building: accidents, 473; contracts, Government, 445; proposed, in the Provinces, 10, 20; regulations, Zanzibar, 369; trades, employment in the, 24, 165, 248, 446, 598, 703; trade settlement, German, 108; trade unemployed, 394
Building in: Aberdeen, 22, 164, 247, 344, 472, 535; Australia, 624; Bedford, 472; Bilbao, 346; Bothwell, 273; Casablanca, 346; Chicago, 137; Clydebank, 597; Dundee, 702; Dunfermline, 164, 472; Edinburgh, 565; Folkestone, 516; Glasgow, 368, 393, 444, 502, 596; Greenock, 502; Hull, 443, 621; Lancashire, 393; London, 193, 296, 320, 344, 368, 622, 650, 702; Maidstone, 444; Mirfield, 344; Paisley, 565, 596; Renfrewshire, 320, 472, 535, 621; Slough, 137, 344, 444; Swansea, 296; Syria, 248; Ulverston, 221; United States, 248; Vancouver, 345; Yarmouth, 444; York, 296
Buildings on Crown property, designs of, 223
Burlington House, alterations to, 248
Burwen Castle Roman camp, the, 394
Bushey Park, 108
Bust, memorial: Isle of Man, 79; Lancaster, 374
By-laws: Birmingham building, 624; London County Council, 623

Cabot's sheathing, 624
Cambridge: Fitzwilliam Museum, 445, 681; Trinity College statue, 411; University loan collection, 623
Canadian Pacific Railway, 273
Canal: Leipzig, proposed, 138; Russian 247
Cancer houses, 370
Capital and labour: Blackburn, 505; employment in the building trades, 24, 165, 248, 446, 598, 703; Southampton, 79
Cardiff: armoured concrete work, 346; assembly hall, 164; Cambrian buildings, 368; Corporation, Mr. Seward and the, 439; County offices, 679; gasworks, 597; institute premises, 419; National Museum, 390; new buildings, 650; water, 22, 650; widening of Ely Bridge, 596
Carpenters' Company: examination, 108; lectures, 680; technical training and the, 703
Carrara marble, 23
Cassiobury Park building estate, Watford, 138
Cathedral: Exeter, 394; Liverpool, 394; Malines, 503; Truro, 345.
Cement: Belgian, 494; British, in Brazil, 446; industry, Germany, 193, 346
Cemetery, Nottingham, 77
Chapel: Little Portland-street, London, 23; the Thistle, Edinburgh, 137
Cherbourg stone, 247
Chicago, building in, 137
Chiswick Urban District, streets in, 623
Christmas holidays, the, 660
Church building news (for other church building news, see pages 15, 21, 22, 48, 49, 63, 76, 77, 78, 100, 105, 106, 129, 133, 137, 138, 163, 192, 193, 194, 204, 221, 222, 240, 246, 266, 272, 273, 295, 319, 343, 345, 363, 367, 368, 393, 394, 419, 442, 445, 471, 472, 500, 501, 504, 505, 533, 534, 549, 564, 565, 566, 596, 621, 622, 649, 651, 662, 679, 699, 702): Aberbeeg, 549; Belfast, 192, 319; Birkdale, 649; Birtley, 649; Bishop's Stoke, 651; Blagdon, 500; Brookwood, 192; Clifton Campville, 504; Cleveleys, 221; Dartford, 442; Dunstable, 48; Durham, 500; Edgbaston, 621; Edinburgh, 137; Elstree, 505; Epsom, 76; Esher, 565; Exeter, 394; Far Headingley, Leeds, 621; Glasgow, 319; Gosport, 163; Halifax, 21; Hayes, 651; Honiton, 500; Hull, 343; Ilminster, 49; Kingston, Jamaica, 204; Kirkby Malzeard, 596; Kirkdale, York, 345; Laleham, 504; Leven, 702; Litherland, Liverpool, 246; Liverpool, 76, 394, 649; London, 501; Natland, 163; Newbury, 343; Newquay, 319; Norwich, 319, 343; Partick, 319; Partrishow, 566; Pinner, 500; Purley, 471, 533; St. Albans, 76; St. Andrew's, 650; Selby, 266; Skipton, 649; Sneinton, 76; Southampton, 533; South Shields, 500; Stamford, 272; Starbeck, 343; Sutton-in-Ashfield, 163; Tarrant Crawford, 194; Thornton Heath, 192; Tonypandy, 533; Truro, 345; Vienna, 194; Watford, 505; Westcliff, 442; Willesden, 138; Wimbledon, 367; Winchelsea, 21; Worcester, 442, 500; Wrexham, 192; York, 564
Church: Christ, Newgate-street, London, 680; Farm-street, Mayfair, London, 165; Kingsway, London, 222; Tarrant Crawford, 194
Church: Congress banner, 445; House, Long Crendon, 564; House, Wrexham, 621; panels, ancient, 394
Churchyard, St. Paul's, London, 445
Clarke's tables, 680
Clay, brick, and the Budget, 248
Clifton, Leigh Woods, 681
Clinker blocks for road repairs, 107
Club: Coggeshall, 472; Coxlodge and Gosforth, 273; Derby, 77; Halifax, 534; Lawford, 650; Liverpool, 43; Netherton, 646; Newcastle, 472; Tunbridge Wells, 247
Clydebank, building at, 597
College: Bishops', Cheshunt, 651; Bradford Technical, 564; Dudley, training, 137; Exeter University, 564; Rutherford, Newcastle, 621; Worcester, Oxford, 21
Cologne, the old bridge of, 622
Colorado marble, 193
Commission, Royal, on ancient, etc., monuments, 624
Competition: an Italian, 107; architectural drawings, 390; architectural, Rome, 394; Saxon Snell prize, 108
Competitions: brickwork designs, glazed, 593; bridge, Warrington, 497, 646; church, Baptist, Mitcham, 560; clubhouse, St. Anne's-on-the-Sea, 646; college, training, Hull, 190, 470, 497; feuing, Hutcheson's Hospital, Glasgow, 417; gardens, Bath, 418; hall, parish, Eltham, 272, 497, hospital, Aberdare, 497; hospital: Surbiton, 74; hospital, Wimbledon, 439; houses, earthquake-proof, 190, houses for the working classes, 103; institute, church, Waterford, 676; library, Liscard, 18, 74; library, New Cross Gate, 389; library, St. Albans, 417; mosaic panels, Old Kent-road Library, London, 103; municipal buildings, Burslem, 161, 190; municipal buildings, Torquay, 161; museum, Cardiff, 390; museum, Welsh National, 244; offices, Berkshire County, 48, 295; offices, Council, Newburn, 341; Polyclinic Institute, Argentine Republic, 244; school, Acton, 618; school, Forest Hall and Whitley, 390; school, Harrogate, 418; school, Kendal, technical, 470, 560, 593; school, Kimberworth, 470; school, Preston grammar, 560; school, Rotherham, 190; school, Walton-on-Naze, 390; school, Warrington, 389, 440; school, Watford, 161; school, Whitby, 366; school, Workington technical, 531, 560; town hall, Grimsby, 190, 294, 318, 417; town hall, Marylebone, 74; town hall, Oldham, 618; town hall, Stoke, 219, 244, 318
Concert hall, Adelphi, London, 130
Concrete: armoured, Cardiff, 346; blocks, Plymouth Town Council and, 681
Congress of: Archæology appointment, 137; Health, Liverpool, 473; School Hygiene, Paris, 300
Consistory Court of London, 138, 192
Constantinople, ancient city walls of, 565
Copenhagen, French exhibition at, 503
Cordwainers' Hall, Cannon-street, London, 296, 622
Cornish and Devon granite quarries, 165
Correction, 10
Councillors, builders as, 420
County Council, London: powers for the, 23; tramways, etc., 22
Court of Session building, Edinburgh, 501
Crosby Hall, London, 445
Crown property, designs of buildings on, 223
Croydon, Whitgift Hospital, 248, 597
'Cup and Ring' stone, a, 445
Custom House, King's Lynn, 321

Derby: architects and Education Committee, 536; County offices, 472; Guildhall, 419; hippodrome, 393
Discoveries at Old Sarum, 313
Dispensary: Hull & Sculcoates', 565; Retford, 77, 679
Dock: Leith, 393; South Shields, 222; Swansea, 597; Wallsend, 624
Doulton's inspection yard gullies, 70
Drainage by-laws, London, 71
Drainage (see 'Sewage')
Drawing: competition, architectural, 390; perspective, Board of Education and, 622
Dublin: municipal improvements, 193; National schools, 21; post office, 679; statues in, 370; temperance hall, 534
Dundee: building trade, 702; Kinnaird Hall, 296; reading-room, 247, 472; water undertaking, 703
'Dutch House,' the, Bristol, 22
Dwellings: for workmen, Vienna, 194; workmen's, Merthyr, 297

Earthquake, the Messina, 558
Edinburgh: Art Hall, 535; Botanic Gardens, 443; building in, 565; cattle mart for, 596; Chapel of the Thistle, 137; drainage, 345; Court of Session building, 501; Gladstone

Digitized by Google

GENERAL (continued):—
memorial, 504; Linlithgow memorial, 504; municipal washhouse, 491; Royal Botanic garden laboratory, 566; Royal Institution, 650; Surgeons' Hall, 393; water supply, 444
Education, Board of, and perspective drawing, 622
Elections, London Borough, 564
Electricity: scheme, Walsall, 681; supply station, Blyth's wharf, 501
Electric: lighting, Mansfield, 393; Supply, Birmingham, 193
Ely Cathedral, lightning conductor, 297
Embankment extension, Thames, 345
Employment in the building trades, 24, 165, 248, 446, 598, 703
Endelline, 615
Engineering exhibition, model, Westminster, 370
Esher Church and Claremont, 565
Estate: development, Cheltenham, 320; W. F. Stanley's, 504
Estates: deceased architects', 107, 165; two deceased builders', 346
Evesham school building collapse, 624
Examination: Board, Sanitary Inspectors',165, 194; plumbers and, 536
Excavations: at Maumbury Rings, 345; in Italy, 566; Old Sarum, 248
Exeter: Cathedral, 394; memorial, 164; University College, 564
Exhibition: Alexandra Palace International, 394; Brussels International, 164, 223, 623; Buenos Aires, Railway, etc., 23, 473; Founders' Company, the, 622; French, Copenhagen, 503; Japan-British, 197, 702; Manchester building, etc., 297; Munich, 565; Municipal and Health, 597, 651; Venice Fine Arts, 585; Westminster Model Engineering, 370
Exhibition Hall, Frankfort, 564
Extinguisher, a fire, 23

Factories, temperature in, 49
Factory: Belfast, 443; Bootle, 77; Portaferry, 106; Wolverhampton, 443
Fades viaduct, the, 445
Ferro-concrete: accidents in, 107; Hennebique, 563; island, a, 566
Ferry, Egremont, Liverpool, 444
Finance Bill and developed land, 297
Fire: at Catford, 555; extinguisher, the 'Perfection,' 23; Prevention Committee, British, 535
Fire station: Guernsey, 77; Portslade, 368; Rishton, 48
Fletton, brickmaking, 370
Florence, statues in the Boboli gardens, 565
Founders' Company, the, 622, 703
Frames, hopper, for school-windows, 651
France: apprenticeship in, 680; white lead in, 652
Frankfort: Exhibition Hall, 564; the old main bridge, 222
French: Exhibition, Copenhagen, 503; paving-stone in Great Britain, 197; tariff, Aberdeen granite and, 504
Fresco decoration in Town Hall, Liverpool, 535
Furniture: at the Brussels Exhibition, 164; picture, etc., sales, 681

Gainsborough memorial, proposed, 23
Garage, motor, Bristol, 621
Garden city: Cheshire, 504; Eastbourne, 345; Hereford, 565; Knebworth, 321, 345; Letchworth, 703; Park Langley, 651
Garden suburb: Ilford, 369; Keswick and Bristol, 247; North Acton, 504; Wallington, 223
Gas: burners, spark ignition for, 49; works, Cardiff, 597
Geneva, Reformation monument in,107
German: building trade settlement, 108; cement trade, 193, 346
Glasgow: building in, 368, 393; church, 319, 500, 699; hospital, 472; Hutcheson's hospital feuing, 417; infirmary, 623; Kelvin memorial, 504; memorial windows, 320; new buildings, etc., 444, 502, 596; Royal Infirmary, 259
Glass and cement, Belgian, 494
Glazing, Victoria and Albert Museum, 138
Gloucester Cathedral, Ellicott memorial, 23
Government building contracts, 344, 445
Granite: Aberdeen, and French tariff, 504; quarries, Cornish and Devon, 165; quarry, Dalkey, 420
Greek marble, 108
Greenock Corporation Bill, 22
Guildhall: Derby, 419; London, 221; Londonderry, 649
Gullies, Doulton's inspection yard, 70
Gymnasium, Manchester, 502

Hall: Cordwainers', London, 296, 622; Crosby, London, 445; Shire, Bedford, 502; Shire, Nottingham, 443; Surgeons', Edinburgh, 393; the London County Council, 346; Trevelyan, Westminster, 679; Vintners', London, 320, 369
Halls (see also 'Municipal Buildings' and 'Town Halls'): Bedminster, 15; Bournemouth, 77; Caputh, 535; Cardiff, 164; Carron, 472; Chester, 22; Dublin, 534; Dundee, 296; Ebbw Vale, 77; Edinburgh, 535; Frankfort, 564; Kennington, 22; Kingussie, 621; London, 130; Luthrie, 535; Lytham, 420; Methlick, 534; Mortimer, 564; Newcastle, 534, 622; Newport, 344; Perth, 22; Portheawl, 344; Revesby, 534; Shrewsbury, 77; Strichen, 621; Wallsend, 246, 320; West Bridgford, Nottingham, 193; Westminster, 679; Willesden Green, 472
Hamilton's patent window fittings, 566
Hammersmith Palace of Varieties, 48
Hampshire County Council offices, 21
Happer Japanese prints, the, 49
Harbour: Blyth, 78; Kirkcaldy, 344; Leghorn, 502; Stranraer, 565
Harbour offices, Yarmouth, 344
Harwich, quay extension, 535
Hawaiian breakwater, 289
Health Congress, Liverpool, 473
Heating: Manchester Royal Infirmary, 48; St. Paul's Cathedral, 534, 536
Hellenic Society, 680
Hennebique ferro-concrete, 563
Hill-Trevor estate, Knightsbridge, 78
Hinge, a self-closing, 473
Hippodrome: Bishop Auckland, 193; Derby, 393; Dewsbury, 77
Holdings, small, and vacant lands, 164
Homes: Dr. Barnardo's, 596; receiving, for lunatics, 223
Homes, various: Bath, 22; Bristol, 344; Broomhill, 472; Gullane, 106; Harrogate, 368; Hornsea, 164; Portheawl, 320, 565; Southampton, 535; Tipton, 221; Uckfield, 137; Worthing, 22
Horsham, Christ's Hospital, 368, 443
Hospital, Whitgift, Croydon, 248, 597
Hospitals: Aberbargoed, 694; Bangor, Belfast, 702; Beddington, 368; Chelmsford, 48; Felixstowe, 246; Glasgow, 472; Hindley, 621; Hoylake, 106; Ilford, 45; Kilmarnock, 320; Leek, 164; London, 137; Loose, 502; Milton, 535; Plaistow, 501; Ramsgate, 472; St. Albans, 679; Saltaire, 564; Teignmouth, 137; Torrington, 193; Toxteth, 273; Tullow, 49
Hotel: Bude, 565; Sheffield, 679; Strand, London, 296, 344; 'Wellington House,' London, 472
Hotels, Austria-Hungary, 183
House, etc., Cobham, 235
Houses and streets, new, 566
Houses of historical interest, 565
Housing and Town Planning Bill, 345
Housing: Belfast, 623; Liverpool, 504, 679
Housing Congress, Vienna, 247
Hull: dispensary, 565; new buildings, 443, 621; orphanage, 502; Training College, 190, 470, 497; waterworks, 78; Wesleyan Hall, 534
Humberside, Roman remains on, 248
Hydro, Bournemouth, 320

Ice Palace, Berlin, 567
Improvements, Public: Bermondsey, 651; Bradford, 473; Burnham, 444; Dublin, 193; Eastbourne, 472; Edinburgh, 443; Gloucester, 420; Liverpool, 23; London, 22, 222, 703; Matlock Bath, 674; Middlesbrough, 503; Morecambe, 597; Newcastle, 138; Paris, 49; Portsmouth, 473; York, 651
Infirmary: Dewsbury, 527; Glasgow, 259, 623; Homerton, 369; Manchester Royal, 48; Perth, 320; Wandsworth, 702
Institute: Bolton Abbey, 534; Bristol, 357; Cardiff, 419; Cork, 596; Garndiffaith, 77; Garth, Maesteg, 534; Loughborough, 534; Newport, 77; Ogmore Vale, 368; Platt Bridge, Wigan, 77; Sleights, 193; Willesden Green, 472
Institute of Metals, 107
Island: a ferro-concrete, 566; and lock, Ray Mill, 503
Italian competition, an, 107
Italy: excavations in, 566; upkeep of roads in, 194

Japanese: Exhibition, 197, 702; prints, the Happer, 49
Japan white, 615
Johannesburg, proposed Town Hall, 268

Kensington, block-paving, 624
Ken Wood, North Hampstead, 393
King's College, London, 345
Knightsbridge, Hill-Trevor estate, 78
Kursaal scheme, Matlock Bath, 444

Laboratory, Royal Botanic Gardens, Edinburgh, 566
Labour: exchanges 651; local preference for, 420
Lambeth, sanitation in, 223
Landale's stone saw frame, 473
Land, developed, the Finance Bill and, 297
Lands, vacant, small holdings and, 164
Law Courts, London, new, 420
Lectures at Carpenters' Hall, 680
Leeds: Phil May memorial, 651; sewage scheme, 247
Leghorn: harbour works, 502; port of, 566
Leigh Woods, Clifton, 681
Leipzig canal, proposed, 138
Libraries: Birkenhead, 534; Bolton, 48; Burslem, 106; Cradley Heath, Blackheath, and Tividale, 621; Dudley, 344; Ellesmere Port, Liverpool, 557; Sunderland, 22; Treharris, 483
Lifts, Strand Palace hotel, 296
Lightning-conductors at Ely Cathedral, 297
Linlithgow Palace, 273
Liverpool: Cathedral, 394, 535; church, 76; fresco decoration in Town Hall, 535; golf club-house, 43; Health Congress, 473; housing, 504, 679; improvements, 23; Memorial Church, Wallasey, 419; School of Architecture, 69; skating rink, 679; Wavertree Church, 649
Lock, Ray Mill island and, 503
London County Council (see also 'County Council'): by-laws, 623; Hall, the, 346
Londonderry Guildhall, 649
London: drainage by-laws, 71; Royal Artillery memorial, 237; street improvements, 222, 703
Lunatics, receiving homes for, 223
Lyons public works, 495

Malines Cathedral, 503
Manchester: building, etc., exhibition, 297; gymnasium, 502; Royal Infirmary, 48; University, 419; washhouses, 320
Mansion-house: Glenisla, 185; London, 221
Marble: Carrara, 23; Colorado, 193; Greek, 108
Margate, new promenade, 651
Market: Edinburgh, 596; for South-east London, a, 566
Marylebone, changes in, 473
Maumbury Rings, excavations at, 345
Mayfair, Farm-street Church, 165
Memorial: Bust, Lancaster, 374; of Temple Bar,138; tablets, inartistic, 445; war, Winchester Cathedral, 446
Memorial to (see also 'Statue'): Baker, Sir Benjaimn, 651; Brown, T. E., 79; Buller, Sir Redvers, 651; Clive, 23; Coquelin, Constant, 23; Ellicott, Bishop, 23; Exeter Protestant martyrs, 164; Gainsborough, 23; Gladstone, Edinburgh, 504; Kelvin, Glasgow, 504; Lawson, Sir Wilfrid, 159; Linlithgow, Marquis of, Edinburgh, 504; Lloyd, Bishop 164; Maiwand, Reading, 624; Owen, Great Sutton, 622; Phil May, Leeds, 651; Royal Artillery, London, 297; Wilberforce, Bishop, Chichester, 473
Messina earthquake, the, 558
Metals, Institute of, 107
Middlesex County Council, 138
Mill, Ellesmere, 48
Mont Blanc, observatory on, 445
Monument: Berne (postal union), 503; Ellicott, Gloucester Cathedral, 23; Reformation, Geneva, 107
Monuments: ancient, etc., Royal Commission on, 624; Welsh, 321
Mortar, Plymouth, 680
Moscow circular railway, 273
Munich, exhibition of Mussulman art, 565
Municipal and Health Exhibition, 597, 651
Municipal buildings (see also 'Town Hall' and 'Offices'): Bethnal Green, 368; Burslem, 420; Newbury, 333; Perth, 22
Museum, British: annual report, 106; appointments, 137, 164; new buildings, 164; recent acquisitions, 78
Museum: Surrey Archæological, 246; Victoria and Albert, 138, 164; Vienna, 194
Museums Association, the, 222

National: galleries, 49; Portrait Gallery, 321
Naval base, Rosyth, 650
Newcastle: City Engineer's report, 222; club, 472; Hall, 534; memorial to Bishop Lloyd, 164; parochial hall, 622; Rutherford College new wing, 621; street improvement, 138
New York, lower Hudson tunnels, 296
Northampton Polytechnic Institute,297
Norwegian stone trade, 78
Norwich sewerage scheme, 106
Nottingham Shire Hall, 443
Numantia, Roman camp of, 337

Oak stake, ancient British, 566
Obituary: Alexander, H., 564; Bellamy, G. D., 76; Bullen, R. N., 319; Campbell, J. A., 136; Choisy, Auguste, 342; Cutler, T. W., 678; Frith, W. P., 500; Garling, H. B., 649; Hall, H., 471, 500; Hall, R., 319; Harrison, H. E., 221; Hennessy, M. A., 620; Hutton, J., 221; Laverty, J., 48; Lee, Arthur, 192; McKim, C. Follen, 342; Owen, W., 192; Penfold, J. W., 76, 222; Proudfoot, D. C., 221; Roberts, C. P., 21; Saunders, J. E., 679; Sherrin, G. C., 678; Stanley, W. F., 221, 504; Turnbull, A., 163; Watson, H. E., 105; Wise, H., 192; Worthington, T., 533, 563
Observatory: at the Vatican, 505; Mont Blanc, 445
Offices: Buckhaven, 621; London, 77; harbour, Yarmouth, 344
Offices, Council, etc.: Barwick-in-Elmet, 106; Cardiff, 679; Cockermouth, 622; Cottingham, 106; Derby, 472; Hampshire, 21; Hunslet, 564; Isle of Ely, 164; Lancashire, 621; March, 178; Newbury, 333; Rishton, 48
Old Sarum, excavations at, 248
Open spaces, 194, 223, 321, 566, 692
Open spaces and recreation grounds, 503, 536
Opera-house, Guatemala, 273
Oratory, St. Piran's, Perranzabuloe, 345
Ordnance survey, 266, 346
Orleans, vandalism in, 23
Orphanage: Hull, 502; Woking, 22
Oxford, Worcester College, 21

Painters and decorators' work, 345
Painters, House, Association of Master, 194
Palace, Linlithgow, 273
Panels, ancient church, 394
Paris: Congress of School Hygiene, 300; improvements in the planning of, 49
Parish room, etc., Burton, 320
Park: Bushey, 108; Leatherhead, 624; Preston, 624; Stoke, 77
Park-lane, No. 26, London, 504
Parliament House, Machynlleth, 503
Parochial buildings: Gateshead, 221; Northampton, 99
Patents, 24, 49, 79, 111, 139, 166, 197, 223, 248, 273, 300, 321, 349, 374, 394, 420, 447, 474, 508, 539, 567, 598, 627, 652, 681, 706
Pavilion: Ayr, 48; Bishopbriggs, 106; Bournemouth, 679; Llandrindod Wells, 428; Torquay, 393
Paving: block, Kensington, 624; stone, French, in Great Britain, 197
Perth, City Hall, 22
Picture sales, 107
Pipes, stoneware, standardisation of, 22
Planning of Paris, improvements in the, 49
Plasterers' wages, Brussels Exhibition, 623
Plumbers: Admiralty, 23; Company, the, 583; examination, and, 536
Plymouth, mortar in, 680
Plymouth Town Council and concrete blocks, 681
Police station: Crowborough, 344; Southampton, 99; Southwick, 164; Sutton-in-Ashfield, 310
Polytechnic: Northampton Institute, 297; Regent-street, London, 273
Port: of Leghorn, 566; Said and Suez, 297
Portrait Gallery, National, 321
Port-works, Rosario, 344
Postal union monument, Berne, 503
Post office: Banchory, 390; Blackrock, 595; Brechin, 443; Dublin, 679; Holloway, 165; Hull, 77; New Zealand, 660; Taunton, 296
Post office: buildings, 502; new buildings, accidents on, 78
Prague, old bridge at, 107
Premises, business: Doncaster, 247; Exeter, 344; London, 164, 344, 389, 526; Swansea, 77
Premises, co-operative, Penrhiwceiber, 296
Professional and business announcements, 22, 49, 78, 106, 138, 164, 193,

Digitized by Google

GENERAL (continued):—
222, 369, 394, 420, 535, 565, 597, 622, 651, 680, 703
Promenade, Margate, 651
Property sales, 194, 321, 504, 623
Prussia, theatre regulations, 680
Pumps, recovering drowned-out, 345
Putty, the deterioration of, 445

Quantities, master builders and, 597
Quarrying on an old Roman camp, 22
Quay, Harwich, 535
Quebec bridge, new, 370

Railway: Canadian Pacific, 273; Moscow circular, 273; Vienna, proposed underground, 370
Railway exhibition, Buenos Ayres, 473
Railway station: Rugely, 77; Worthing, 320
Ray Mill Island and lock, 503
Reading-rooms: Burghill, Hereford, 534; Bursalem, 106; Dundee, 247; 472; Rednal and Rubery, 650
Recreation grounds, etc., 223, 321, 503, 536
Reformation monument, Geneva, 107
Reformatory, Langho, 621
Residence, Norwich, 596
Rialto, the, 370
Richmond: an old well at, 535; Hill, view from, 79
Road repairs, clinker blocks for, 107
Roads, upkeep of, Italy, 194
Roman camp: Burwen Castle, 394; Numantia, 337; quarrying on an old, 22
Roman remains: Humberside, 248; Kent, 222
Rome: bridge over the Tiber, 445; British School, 22; international architectural competition, 394
Rooms, parish: Bedminster, 443; Broxbourne, 192
Rosyth naval base, 650
Rowton House, Sheffield, 501
Royal Institute, Edinburgh, 650
Rule, 2-ft., attachments for, 370
Russia, bridge building, 503
Russian canal scheme, 247

St. Albans Abbey window, 502
St. Marylebone Charity School, 651
St. Paul's: Bridge, London, 566, 703; Cathedral, heating of, 504, 536; churchyard, 445
Sales: art, 503, 623; furniture, picture and, 681; picture, 107, 503; property, 194, 321, 504, 623
Sanatorium: Harpenden, 48; Worthing, 378
Sanitary Inspectors' Examination Board, 165, 194
Sanitation in Lambeth, 223
Sarum, Old, discoveries at, 313
Saw frame, stone, Landale's, 473
Scarborough Spa, 566
School building: collapse, Evesham, 624; London, 20
School Hygiene, Congress of, Paris, 300
School of: Architecture, Liverpool, 69; Art, Birmingham, 297; Art Wood-carving, 394; Building, Brixton, 106
School, St. Marylebone charity, 651
Schools (for other school building news, see pages 10, 21, 77, 105, 106, 129, 137, 192, 193, 221, 233, 246, 265, 272, 273, 295, 319, 320, 343, 344, 363, 367, 383, 381, 393, 402, 419, 442, 443, 472, 501, 533, 534, 564, 596, 621, 650, 651, 662): Abertridwr, 501; Acton Wells, 621; Alston, 501, 564; Ammanford, 246; Asfordby, 596; Banff, 621; Barnsley, 596; Barnstaple, 221; Birkenhead, 596; Bishop's Stortford, 621; Blantyre, 443; Brighouse, 272; Bristol, 77; Burnley, 320; Byker, 343; Caerphilly, 137; Cambuslang, 501; Cardiff, 650; Chessington, 367; Cramlington, 265; Darnall, Sheffield, 272; Doncaster, 472; Drax, Selby, 106; Dudley, 343; Enfield, 596; Gourock, 77; Great Harwood, 272; Handsworth, 295; Hexham, 564; Hindley, 442; Hulme, Manchester, 193; Keighley, 596; King's Norton, 319; Leeds, 106; Lemington, 368; Lochore, 319; London, 343, 534; Lydbrook, 320; Merthyr, 596; Newark, 21; Newcastle, 621; Northallerton, 533; Northampton, 367; Norwich, 343; Oxford, 193; Pinner, 650; Plymouth, 319; Pontycymmer, 443; Port Glasgow, 564; Ramsgate, 320; Rosyth, 564; Ryhope, 393; Scotstoun, 320; Scunthorpe, 272; Selly Oak, 233; Sketty, 534; South Shields, 221; Stepps, 501; Sunderland, 343; Sutton Valence, 651; Wallasey, 343; Warwick Bridge, 193; Whickham, 246; Wick, 137; Wimbledon, 137; Worcester, 402, 533; Wrexham, 192
Screen: Christ Church, Epsom, 106; Fowey Church, 420, 445; Great Sutton Church, 622; Warrington Church, 567
Sea: defence works, Teignmouth, 164; front, Burnham, 444; front, Eastbourne, 472; wall, Barry Island, 369
Selby Abbey, 266
Sewage: Barcombe, 680; Bath, 78; Belfast, 106; Edinburgh, 345; Hanford, 565; Headington, 369; Leeds, 247; Liss, 320; Little Heath, 596; Liversedge, 386; London, 137; Mansfield, 393; Middlesbrough, 503; Minworth, 680; Northallerton, 622; Norwich, 106; Okehampton, 622; Rosyth, 503; Sheffield, 535; Southend-on-Sea, 22; Sutton, St. Helens, 49; Wakefield, 503
Seward, Mr., Cardiff Corporation and, 439
Sewers and drains, London, 137
Shadwell, open space, 566
Sheffield: hotel, 679; Rowton House, 501; sewage works, 535
Shops, etc., Deptford, 10
Skating-rink: Aberdeen, 393, 431; Bedford, 444; Elgin, 596; Liverpool, 679; Warrington, 534
Slate clip, an invisible, 273
Slaughter-house, Stirling, 502
Small holdings and vacant lands, 164
Snell, Saxon, prize competition, 108
Solesmes, Abbey of, sale of, 138
Sound, deadening, 624
Southampton: police stations, 99; sailors' home, 535
Spark ignition for gas-burners, 49
Stained glass and decoration: Bishop Auckland, 444; Blandford and Weymouth, 369; Clapham Junction, 49; Glasgow, 320; Hexham, 680; Holborn, 22; Liverpool, 53; London, 49, 651; Newhaven, 420; Redland, Bristol, 296; St. Albans, 502; West Kirby, 222; Worcester, 106
Stake, ancient British oak, 566
Stalls, choir, Macclesfield, 502
Standardisation of stoneware pipes, 22
Statues in: Dublin, 370; the Boboli Gardens, Florence, 565
Statue: the Wilfrid Lawson, 159; Trinity College, Cambridge, 411
Stoke Park, 77
Stone: a 'cup and ring,' 445; Cherbourg, 247; French paving, Great Britain, 197; trade, Norwegian, 78
Stove, an anthracite heating, 297
Streets: Chiswick Urban District Council, 623; new houses and, 566
Street views in towns, protection of, 394
Subways, proposed, London, 591
Suez, Port Said and, 297
Sunderland bridge, 78
Surrey Archæological Museum, 246
Sweden, an inland waterway for, 565
Sydney, growth of, 618

Tables, Clarke's, 680
Tablets, inartistic memorial, 445
Tackle, testing of, 624
Tariff, French, Aberdeen granite and, 504
Technical: Institute, Newport, Mon., 77; training and the Carpenters' Company, 703
Temperature in factories, 49
Temple Bar, memorial of, 138
Testing of tackle, 624
Thames Embankment extension, 345
Theatre: Aberdeen, 621; Barry, 650; Kirkcaldy, 368; Wallsend, 501
Theatre regulations, Prussia, 680
Thorney estate, Cambridgeshire, 23
Timber, Brazilian, 503
Tintern Abbey, 374
Tower, water, York, 320
Town, a practical, 194
Town Hall (see also 'Offices'): Bradford, 393; Johannesburg, 268; Llandudno, 106; Marylebone, 420; Torquay, 393
Town Planning Bill, Housing and, 345
Trade news, 48, 78, 164, 193, 222, 247, 273, 296, 344, 393, 444, 622, 679
Tramways, etc., London County Council, 22
Truro Cathedral, 345
Tunnels, the lower Hudson, New York, 296
Turner, an early work of, 681

Unemployed statistics, 394
United States, building in, 248
University: Birmingham, 297; Cambridge, loan collection, 623; College, Exeter, 564; extension guild, 370; laboratory, Manchester, 419
Uruguay, public works in, 223

Vancouver, building in, 345
Vandalism in Orleans, 23
Vatican, observatory at the, 505
Venice, Exhibition of Fine Arts, 585
Viaduct, the Fades, 445
Victoria and Albert Museum, 138, 164
Vienna: dwellings for working men, 194; extension of, 194; Housing Congress, 247; new museum, 194; proposed underground railway, 370; rebuilding a church, 194
Views, street, in towns, protection of, 394
Villas, etc., Market Rason, 296
Vintners' Company and their hall, 369

Wages, plasterers, Brussels Exhibition, 623
Wallpaper Manufacturers, Ltd., 566
Wandsworth Infirmary, 702
Washhouse: Edinburgh, 491; Manchester, 320
Water supply: Aberdeen, 596; Annan, 565; Bangor, 247; Burntisland, 445; Cardiff, 22, 650; Dundee, 703; Edinburgh, 444; Exmouth, 193; Fraserburgh, 78; Hastings, 596; Keith, 247; Monmouth Valleys, 565; Northampton, 296; Pateley Bridge, 680; Penrith, 565; St. Andrews, 320; Shrewsbury, 565; West Fife, 444
Waterway: between the Baltic and the Black Sea, 565; inland, Sweden, 565
Waterworks: Camborne, 597; Hull, 78; Kelso, 393; Petersfield, 444
Watford, Cassiobury Park building estate, 138
Well, an old, at Richmond, 535
Welsh monuments, etc., 321
Westminster, Trevelyan Hall, 679
White lead in France, 652
Whitgift Hospital scheme, 248, 597
Winchester Cathedral, war memorial, 446
Window fittings, Hamilton's patent, 566
Windows, school, hopper frames for, 651
Wood-carving, School of Art, 394
Workhouse: Clayton, 501; Govan, 534; Guildford, 444; Homerton, 369; Mansfield, 420

York, water tower, 320
Young Men's Christian Association buildings: London, 22, 77, 344; Newport, 596; Rotherham, 337; Saltash, 502

Zanzibar, building regulations, 369
Zoological Society's headquarters, 502

ARCHITECTS, ETC., OF BUILDINGS ILLUSTRATED.

Ambler, L., Church Interior, Kirkby-in-Ashfield, 467
Atkinson, R., Design, Glamorgan County Offices, Cardiff, 616
Atkinson, R. F.: Garden Pavilion, 529; Premises, Oxford-street, London, 466
Ayling, R. Stephen, Proposed London Goods Clearing House, 291

Bailey, T. J., London County Council Clapham School for Girls, 643, 645
Bassett-Smith, C. A., South Transept, Westminster Abbey, 586, 587
Bassett-Smith, W. and C. A., St. Paul's Church, Plumstead, 361
Beaumont, Chevalier W., Design for an Automobile Club, 529
Brace, A. G., Lavenham Church Tower, 314
Brierley, W. H., House, Bishopthorpe, York, 529

Camm, W. H., Designs for Leaded Glass for Shipping Offices, Cardiff, 671
Carmichael, F. J., Sword Rest, All Hallows Church, London, 161
Caröe, W. D., 'Meulenborg,' Elsinore, 100
Castle & Warren, Deptford Branch Library, 413
Clemence & Moon, Footbridge, Guildford, 265
Crouch, Butler, & Savage, Training College, Hull, 556, 557

Derrick, T. C., 'The River,' 131

Eade, Johns, & Browne, Grimsby Town Hall Extension, 338
Eaton, W., the Basset and Mansel Tomb, Llantrithyd Church, 287

Figgis, T. P., and A. E. Munby, the Coopers' Company's Schools, Bow, 438
Friskin, W., Design for a Fountain, 101
Froelich, Herr, Design for Geneva Reformation Monument, 73

Garratt & Simister, Design for Additions to Town Hall, Stoke-upon-Trent, 266, 267
Goodwin, B. M., Whitgift Hospital, 382, 383
Green, W. Curtis: Chapel of Ease, Frensham, 315; Sketches with the Architectural Association, 186, 187, 208, 215
Guthrie, L. Rome, the Gardens at South Stoneham House, 670

Harvey, W., Sketches, a Saracenic Mosque in Palestine, 605-607
Haywood, W., Design for Stoke-on-Trent Town Hall Additions, 267
Heath, Sidney, Sketches, etc., by: Almshouses, Barnstaple, 11; Almshouses, Beaminster, 358; Almshouses (Hall's), Bradford-on-Avon, 292; Almshouses, Corsham, 525, 526; Almshouses, Glastonbury (Abbot Beere's), 67; Almshouses, Lyford, 236; Almshouses, Stratford-on-Avon, 315; Bede House, the, Higham Ferrers, 93; Chimney-piece, St. Peter's Hospital, Bristol, 189; Hospital, Cirencester (St. John's), 613; Hospital, Cirencester (St. Thomas's), 692; Hospital, Croydon (Whitgift), 127, 334; Hospital, Heytesbury (St. John's), 215; Hospital, Lyddington (Jesus), 153, 154; Hospital, Warwick (Leicester's), 385; Hospital, Wimborne (St. Margaret's), 589; Sculpture on Hospital, Taunton (St. Margaret's), 39
Henderson, A. E., the Mosque of Sultan Suleiman, Stamboul, 100
Honan, Matthew, Church, Warrington, 389
Houfton, P. B., Plan, Derbyshire School, 211
Hutchings, J., Plans, Schools, Biddulph, 209
Hutton, J., Westmorland Home for Advanced Consumption, 97
Irvine, G. G., Clergy House, Aberdeen, 467

Jackson, T. G., Museum of Archæology, etc., Cambridge, 130
Jeffery, G., Church, etc., Lugano, Switzerland, 497
Jewell, H. H., a Nobleman's Mansion (Royal Academy Gold Medal Design in Architecture), 695, 696, 697
Jones, R. P., Hall and Staircase, and Billiard-room and Library, Silverlands, Chertsey, 496, 497

Kemp & How, Model Cottages at Alderton, 336
Kirkby, R. G., Plans, Bradford Schools, 212, 213

Laycock, H. B., Prize Design for Fountain for a Public Park, 73
Leigh, D. C., Penrhyn Old Hall, 639
Livesay, G. A. Bligh, Bank Premises, Parkstone, 217, 218

McKim, Mead, & White, Montreal Buildings, 47
Marks, F. W., Egypt House, New Broad-street, London, 160, 161
Martin, A. E., Upper Chapel, S. Francesco, Assisi, 131
Matear, H. A., & F. W. Simon, Interior, Liverpool Cotton Exchange, 16

Digitized by Google

ARCHITECTS, etc. continued):—
Maxwell, E. & W. S., Church, Montreal 47
May, P., Design for a Fountain for a Park, 161
Moore, Temple, New Nave, Hexham Abbey, 412
Moscrop-Young & Glanfield & P. J. Waldram, Parish Hall, Eltham, 556
Murray, J., Business Premises, Oxford-street, London, 670, 671

Newton, E.: 'Dawn House,' Winchester, 72; 'Luckley,' Wokingham, 72, 73; 'Upton Grey,' Hants, 642, 643, 644

Orr, A. A., Window, Pyecombe Church, 387

Paul, Roland, Cottages near Barnet, 184
Paul, S., Presentation Trowel and Bag, 439
Pearson, F. L., Fountain, Hospital, Great Ormond-street, London, 467
Pepler & Allen, Whitgift Hospital, 162
Pite, W. A., Portico of Administrative Block, King's College Hospital, 130
Platt, J. E., part of the Parthenon Frieze, 616
Pleghard & Haefeli, Sanatorium, Davos, 365

Quekett, J., late Renaissance Churches of London: Christ Church, Spitalfields, 46; St. Alfege, Greenwich, 290; St. Botolph's, Bishopsgate, 388; St. George-the-Martyr, Southwark, 528; St. Leonard's, Shoreditch, 160; St. Martin-in-the Fields, 642

Russell, S. B., and T. E. Cooper, Burslem Municipal Buildings, 214

Schultz, R. Weir, Cathedral Church, Khartoum, 290, 291
Scott, M. H. Baillie, Waterloo Court, Hampstead Garden Suburbs, 47
Scott-Sawyer, H., Lanercost Priory, 99
Shrewsbury, E. J., Berkshire County Offices, Reading (second premiated design), 338
Silcock, T. B., and S. S. Reay: Cornwall County Council Offices, 389; Homes, Churchill Cottage, Somerset, 617
Simpson, F. M., House at Iver, 439
Smith, U. A., Plan, Letchworth School, 211
Stokes, L., Chelsea Town Hall, 528

Tapper, W.: Chapel for the Community of the Resurrection, Mirfield, 364; Lythe Church, Yorkshire, 101
Tavenor-Perry, J.: 'Metz,' 544; Ponte Nomentano, near Rome, 496; Sketch Restoration of Front of St. Peter's, Rome, 379, 388
Thomas, E. M., Design for Burslem Municipal Buildings, 241
Thompson, H. S., Crypt, Chillon Castle, 269
Toft, A., Sculpture from Welsh National War Memorial, 584
Toy, S., Tomb of Phillipe Pot, in the Louvre, 161

Voysey, C. F. A., Offices, Capel House, New Broad-street, London, 467

Walker, H., Old Bench Ends, St. Nicholas, Walcot, 17
Warwick & Hall: Burslem Municipal Buildings (third premiated design), 339; County Council Offices, Reading, 314, 315; Design for Glamorgan County Hall, 438; Design for Stoke-upon-Trent Town Hall Additions, 240
Waterhouse, Paul, Refuge Assurance Company Buildings, Manchester, 46
Weaver, Miss A. G., Photograph of Aisle, St. Bartholomew, Smithfield, 240
Webb, Aston, Interiors, Victoria and Albert Museum, 17
Widdows, G. H.: Higher Elementary School, Long Eaton, 130, 131; Plans of Derbyshire Elementary Schools, 210
Wills & Anderson, Berkshire County Offices (third premiated design), 365
Withers & Meredith, Grimsby Town Hall Extension (second premiated design), 365
Wright, W. H., Design for Modelled Lunette, 413

Young & Hall, House at Dunsley, 72, 73, 74

ILLUSTRATIONS.

[*The Illustrations will be found on, or immediately following or preceding, the pages indicated.*]

ABBEY, HEXHAM, New Nave Temple Moore, Architect, 412
Abbey, Westminster, South Transept: Drawn by C. A. Bassett-Smith, 586, 587
Aberdeen, Clergy House: G. G. Irvine, Architect, 467
Alderton, Model Cottages: Kemp & How, Architects, 336
Almshouses, Drawn by Sidney Heath: Barnstaple, the Penrose, 11; Beaminster, 358; Bradford-on-Avon, 292; Corsham, 525, 526; Glastonbury, Abbot Beere's, 67; Lyford, 236; Stratford-on-Avon, 315
American Concrete Bridge, an Early, Diagrams, 582
Architectural Association Excursion, Sketches with the: by W. Curtis Green, 186, 187, 208, 215
Architectural Association Sketch-Book, a Plate from the, 100
Architecture, Shop, an Effort in, 362
Assisi, Upper Chapel, S. Francesco: Drawn by A. E. Martin, 131
Assurance Offices (see 'Offices')
Automobile Club, Design for a: by Chevalier W. Beaumont, 529

BANK, MONTREAL: McKim, Mead, & White, Architects, 47
Bank Premises, Parkstone: G. A. Bligh Livesay, Architect, 217, 218
Barcelona Views, 304, 305, 306
Barnet, Cottages near: Roland Paul, Architect, 184
Barnstaple, the Penrose Almshouses: Drawn by Sidney Heath, 11
Beaminster, Almshouses at: Drawn by Sidney Heath, 358
Bede House, the, Higham Ferrers: Drawn by Sidney Heath, 93
Bench Ends, Old, St. Nicholas, Walcot: from photographs by H. Walker, 17
Berkshire County Council Offices: Warwick & Hall, Architects, 314, 315; Second Premiated Design, by E. J. Shrewsbury, 338; Third Premiated Design, by Wills & Anderson, 365
Billiard-room and Library, Silverlands, Chertsey: R. P. Jones, Architect, 497
Birmingham University, Ceremonial Key, 41
Bishopthorpe, House at: W. H. Brierley, Architect, 529
Bradford-on-Avon, Hall's Almshouses: Drawn by Sidney Heath, 292
Bridge: an Early American Concrete, Diagrams, 582; Barcelona, 306; XIVth Century, Orthez, 176
Bridge, Foot, at Guildford: Clemence & Moon, Architects, 265
Bristol, Chimney-piece in St. Peter's Hospital: Drawn by Sidney Heath, 189
Broadway, Sketches at: by W. Curtis Green, 187, 208
Builder, the, Competition for a Fountain: Second Prize Design, by H. B. Laycock, 73; Extra Prize Design, by W. Friskin, 101; Fourth 'Mention' Design, by P. May, 161
Buildings, Old London, Engravings of, 182
Burslem Municipal Buildings: Design selected, by Russell & Cooper, 214; Design by E. M. Thomas, 241; Third Premiated Design, by Warwick & Hall, 339

CABINET, LACQUERED, in the Holme-Lacy Collection, 546
Cambridge, Museum of Archæology, etc.: T. G. Jackson, Architect, 130
Cardiff, Leaded Glass for Shipping Offices: Designs by W. H. Camm, 671
Cardiff, Welsh National War Memorial Sculpture: Albert Toft, Sculptor, 584
Cathedral: Barcelona, 304; Toledo, 256
Chapel for the Community of the Resurrection, Mirfield: Walter Tapper, Architect, 364
Chapel of Ease, Frensham: W. Curtis Green, Architect, 315
Chapel, Upper, S. Francesco, Assisi: Drawn by A. E. Martin, 131
Chelsea Town Hall, New Front: Leonard Stokes, Architect, 528
Chertsey, Silverlands, Hall, etc.: R. P. Jones, Architect, 496, 497
Chimney-piece, St. Peter's Hospital, Bristol: Drawn by Sidney Heath, 189
Chillon Castle, the Crypt, 269
Chipping Campden Church Tower: Sketch by W. Curtis Green, 215
Chipping Campden, Grevel House: Sketched by W. Curtis Green, 187
Church, Cathedral, Khartoum: R. Weir Schultz, Architect, 290, 291
Church, Chipping Campden: Tower: Sketched by W. Curtis Green, 215
Church, Kirkby-in-Ashfield, interior of St. Wilfrid's: Louis Ambler, Architect, 467, 468
Church, Lavenham: Drawn by A. G. Brace, 314
Church, Lugano, Switzerland: S. Edwards: G. Jeffery, Architect, 497
Church, Lythe: W. J. Tapper, Architect, 101
Church, Montreal: the Messiah: E. & W. S. Maxwell, Architects, 47
Church, Plumstead: St. Paul's: W. &. C. A. Bassett-Smith, Architects, 361
Church, Smithfield: Aisle of St. Bartholomew: from photograph by Miss A. G. Weaver, 240
Church, Warrington: Proposed: Matthew Honan, Architect, 389
Church, Withington: Sketches by W. Curtis Green, 215
Churches, late Renaissance, London: Drawn by J. Quekett: Christ Church, Spitalfields, 46 (Plan, 47); St. Alfege, Greenwich, 290; St. Botolph, Bishopsgate Without, 388; St. George-the-Martyr, Southwark, 528; St. Leonard's, Shoreditch, 160; St. Martin-in-the Fields, 642
Cirencester, Hospital: Drawn by Sidney Heath, 613, 692
Clapham, London County Council Secondary School: T. J. Bailey, Architect, 643, 645
Clearing House, Proposed London Goods: R. Stephen Ayling, Architect, 291
Club, Automobile, Design for a: by Chevalier W. Beaumont, 529
Club, Montreal: McKim, Mead, & White, Architects, 47
College, New Training, Hull: Crouch, Butler, & Savage, Architects, 556, 557
Concrete: Reinforced, Novel Method of Constructing Small Buildings in, 636, 637; Reservoir for London Hydraulic Power Company, 155, 156, 157
Constantinople, Mosque of Sultan Suleiman: Drawn by A. E. Henderson, 100
Consumption, Westmorland Home for: J. Hutton, Architect, 97
Coopers' Company's Schools, Bow: T. P. Figgis and A. E. Munby, Architects, 438
Cornwall County Council Offices: Silcock & Reay, Architects, 389
Corsham, Almshouses: Drawn by Sidney Heath, 525, 526
Corstopitum, Sculptured Panel found on Site of, 37
Cottage Homes, Churchill, Somerset: Silcock & Reay, Architects, 617
Cottages, Model, at Alderton: Kemp & How, Architects, 336
Cottages, near Barnet: Roland Paul, Architect, 184
Cotton Exchange, Liverpool: interior: Huon A. Matear and F. W. Simon, Architects, 16
Croydon, the Whitgift Hospital: Drawn by Sidney Heath, 127, 334
Croydon, the Whitgift Hospital: Overmantel: Drawn by Pepler & Allen, 162
Croydon, the Whitgift Hospital: Sketches by B. M. Goodwin, 382, 383
Crypt: Chillon Castle, 269; Guildhall, London, 522

DAIRY, A LONDON, Fifty Years Ago, 214
Davos, Queen Alexandra Sanatorium, 365
Deptford Branch Library: Castle & Warren, Architects, 413
Diagrams: an Early American Concrete Bridge, 582; Areameter, the, 593; Attachments for the 2-ft. Rule, 370; Concrete Reservoir for London Hydraulic Power Company, 155, 156, 157; Conduit-street, No. 9, London, 363; Doulton's Inspection Yard Gullies, 7; Dry Rot in Buildings, 498; Electric Light Standards, 201, 202, 203; Glazing, Victoria and Albert Museum, 138; Hinge, 473; Illustrating Patents, 50, 167, 249, 394, 398, 420, 423, 447, 474, 509, 598, 602; Lethbridge Viaduct, Canada, 90; Mavitta's Enlarging, etc., Scale, 317; Means of Deadening Sound, 624; Reinforced Concrete and Small Buildings, 636, 637; Reinforced Concrete in Aldwych, 234; Rust, etc., in Iron and Steel, 216, 217; Slating, 245; Strength of Riveted Joints, 308, 310
Doulton's Inspection Yard Gullies, 70
Drury-lane, a London Dairy Fifty Years Ago, 214
Dunsley, House at: Young & Hall, Architects, 72, 73, 74

EGYPTIAN EXHIBITION, University College, Sketches at, 64
Electric Light Standards, London's, 201, 202, 203
Elsinore, House at: W. D. Caröe and Herr Tvede, Architects, 100
Eltham Parish Hall: Moscrop-Young & Glanfield and P. J. Waldram, Architects, 556
Engravings of Old London Buildings, 182
Evans, Dr. Arthur, Portrait of, 496
Evelyn's Plan for St. Paul's and Neighbourhood, 587
Exchange, Cotton, Liverpool: Interior: Huon A. Matear and F. W. Simon, Architects, 16

FAÇADE, No. 9, Conduit-street, London, 363
Farm Buildings, Model, Ottawa, Canada, 241, 242
Flats, Hampstead Garden Suburbs: M. H. Baillie Scott, Architect, 47
Font, Egloshayle Church, 314
Fountain: Design for a (*Builder* Competition:) Extra Prize Design by W. Friskin, 101; Second Prize Design by H. B. Laycock, 73; Fourth Mention by P. May, 161
Fountain, Drinking, Design for a, 338
Fountain, Hospital for Sick Children, Great Ormond-street, London: F. L. Pearson, Architect, 467
Frensham, Chapel: W. Curtis Green, Architect, 315
Frieze, Part of the Parthenon: Drawn by J. E. Platt, 616

GARDEN PAVILION: R. Frank Atkinson Architect, 529
Gardens, South Stoneham House: L. Rome Guthrie, Architect, 670
Geneva Reformation Monument: Design by Herr Froelich, 73

Digitized by Google

ILLUSTRATIONS (continued)—
Glamorgan County Offices: Design by Robert Atkinson, 616; Design by Warwick & Hall, 438
Glass, Leaded, for Shipping Offices, Cardiff; Designs by W. H. Camm, 671
Glastonbury, Abbot Beere's Almshouse: Drawn by Sidney Heath, 67
Gloucester, Tower and Cloister: Sketches by W. Curtis Green, 186
Greenwich, Church of St. Alfege: Drawn by J. Quekett, 290
Grimsby Town Hall Extension: First Premiated Design by Eade, Johns, & Browne, 338; Second Premiated Design by Withers & Meredith, 365
Guildford, Footbridge Over the Wey: Clemence & Moon, Architects, 265
Guildhall, London: Entrance Front, with Dance's Eastern Screen, 485; the Crypt, 522
Gullies, Doulton's Inspection Yard, 70

HAGETMAU, Sketches from, 176, 177
Halicarnassus, Order of the Mausoleum at, 215
Hall and Staircase, Silverlands, Chertsey: R. P. Jones, Architect, 496
Hall, Old Leathersellers', London, 208
Hall, Parish, Eltham: Moscrop-Young & Glanfield and P. J. Waldram, Architects, 556
Hall, Penrhyn Old: Drawn by D. C. Leigh, 639
Hall (see 'Offices')
Hampstead Garden Suburbs: Waterlow Court: M. H. Baillie Scott, Architect, 47
Hexham Abbey, New Nave: Temple Moore, Architect, 412
Heytesbury, St. John's Hospital: Drawn by Sidney Heath, 215
Higham Ferrers, the Bede House: Drawn by Sidney Heath, 93
Holme-Lacy Collection, Lacquered Cabinet in the, 546
Home for Consumption, Westmorland: J. Hutton, Architect, 97
Homes, Churchill Cottage, Somerset; Silcock & Reay, Architects, 617
Hospital Building, King's College: W. A. Pite, Architect, 130
Hospital Buildings, drawn by Sidney Heath: Bristol, Chimney-piece in St. Peter's, 189; Cirencester, 613, 692; Croydon (the Whitgift), 127, 334; Heytesbury (St. John's), 215; Lyddington (Jesus), 153, 154; Taunton (Sculpture), 39; Warwick (Leicester's), 385; Wimborne, 589
Hospital, Croydon: the Whitgift: Drawn by Sidney Heath, 127, 334; Overmantel, Drawn by Pepler & Allen, 162; Sketches by B. M. Goodwin, 382, 383
House at Bishopthorpe, York: W. H. Brierley, Architect, 529
House, Clergy, Aberdeen: G. G. Irvine, Architect, 467
House, Dunsley: Young & Hall, Architect, 72, 73, 74
House, 'Egypt,' New Broad-street, London: F. W. Marks, Architect, 160, 161
House, Elsinore: W. D. Caröe and Herr Tvede, Architects, 100
House, Iver: F. M. Simpson, Architect, 439
House, Silverlands, Chertsey: R. P. Jones, Architect, 496, 497
House, 'Upton Grey,' Hants: Ernest Newton, Architect, 642, 643, 644
House, Winchester: 'The Dawn': Ernest Newton, Architect, 72
House, Wokingham: 'Luckley': Ernest Newton, Architect, 72, 73
Hull, New Training College: Crouch, Butler, & Savage, Architects, 556, 557

INDRE, ST. GENOU, Sketches, 631-633
Iver, House at: F. M. Simpson, Architect, 439

KEY, CEREMONIAL, Birmingham University, 41
Khartoum, Cathedral Church: R. Weir Schultz, Architect, 290, 291
King's College Hospital Building: W. A. Pite, Architect, 130
Kirkby-in-Ashfield, Interior of St. Wilfrid's Church: Louis Ambler, Architect, 467, 468

LANERCOST PRIORY: Sketch by H. Scott-Sawyer, 99
Lavenham Church: Drawn by A. G. Brace, 314
Leathersellers' Hall, Old, London, 208
Lethbridge Viaduct, Canada, 90
Library, Deptford Branch: Castle & Warren, Architects, 413
Liverpool Cotton Exchange, interior: Huon A. Matear and F. W. Simon, Architects, 16
Llantrithyd Church, the Basset and Mansel Tomb: Drawn by W. Eaton, 287
London: Buildings, Old, Engravings of, 182: Electric Light Standards, 201, 202, 203; Hydraulic Power Company Concrete Reservoir, 155, 156, 157
London Goods Clearing House, Proposed: R. Stephen Ayling, Architect, 291
London, Late Renaissance Churches of (see 'Churches')
Long Eaton, Higher Elementary School: G. H. Widdows, Architect, 130, 131
Lugano, Switzerland: S. Edward's Church, etc.: G. Jeffery, Architect, 497
Lunette in Art Gallery, Modelled: by W. H. Wright, 413
Lyddington Hospital: Drawn by Sidney Heath, 153, 154
Lyford, Almshouses: Drawn by Sidney Heath, 236
Lythe Church: W. J. Tapper, Architect, 101

MANCHESTER, Refuge Assurance Company's Buildings: Paul Waterhouse, Architect, 46, 47
Mansion, a Nobleman's (Royal Academy Gold Medal Design): by H. H. Jewell, 695-697
Mausoleum at Halicarnassus, the Order of the, 215
Mavitta's Enlarging and Reducing Scale, 317
Metz: from a Drawing by J. Tavenor-Perry, 544
Mirfield, Chapel of the Community of the Resurrection: Walter Tapper, Architect, 364
Montreal: Bank: McKim, Mead, & White, Architects, 47: Church: E. & W. S. Maxwell, Architects, 47; Club: McKim, Mead, & White, Architects, 47
Monument, Geneva Reformation: Design by Herr Froelich, 73
Mosque of Sultan Suleiman, Stamboul: Drawn by A. E. Henderson, 100
Mosque, Saracenic, Palestine, 605-607
Municipal Buildings, Burslem: Design selected, by Russell & Cooper, 214; Design by E. M. Thomas, 241; Third Premiated Design, by Warwick & Hall, 339
Museum of Archæology, etc., Cambridge: T. G. Jackson, Architect, 130
Museum, Victoria and Albert: Interiors: Aston Webb, Architect, 17

OFFICES, Berkshire County Council, Reading: Warwick & Hall, Architects, 314, 315: Second Premiated Design, by E. J. Shrewsbury, 338; Third Premiated Design, by Wills & Anderson, 365
Offices, Capel House, New Broad-street, London: C. F. A. Voysey, Architect, 467
Offices, Cornwall County Council: Silcock & Reay, Architects, 389
Offices, Glamorgan County: Design by Robert Atkinson, 616; Design by Warwick & Hall, 438
Offices, New Broad-street, London: F. W. Marks, Architect, 160, 161
Offices, Refuge Assurance, Manchester: Paul Waterhouse, Architect, 46, 47
Orta, Chapel, etc., 666, 667
Orthez, XIVth Century Bridge at, 176
Ottawa, Canada, Model Farm Buildings, 241, 242

PALESTINE, Saracenic Mosque, 605-607
Panel, Sculptured, Found on Site of Corstopitum, 37
Parkstone, Bank Premises: G. A. Bligh Livesay, Architect, 217, 218
Parthenon Frieze, Part of the: Drawn by J. E. Platt, 616
Pavilion, Garden: R. Frank Atkinson, Architect, 529
Penrhyn Old Hall: Drawn by D. C. Leigh, 639
Plan, Block, St. Paul's, London, 486
Plans: for St. Paul's and Neighbourhood, Wren's and Evelyn's, 587; School, 209-213
Plumstead, St. Paul's Church: W. & C. A. Bassett-Smith, Architects, 361
Ponte Nomentano, near Rome: Drawn by J. Tavenor-Perry, 496
Pontorson, the Façade of, 135
Portrait of Dr. Arthur Evans, 496
Premises, Business, Oxford-street, London: J. Murray, Architect, 670
Premises, Oxford-street, London: R. F. Atkinson, Architect, 466
Priory, Lanercost: Sketch by H. Scott-Sawyer, 99
Pyecombe Church, Window: Designed by A. A. Orr, 387

READING, County Council Offices: Warwick & Hall, Architects, 314, 315; Second Premiated Design, by E. J. Shrewsbury, 338; Third Premiated Design, by Wills & Anderson, 365
Renaissance Churches, London (see 'Churches')
Reservoir, Concrete, London Hydraulic Power Company, 155, 156, 157
'River, the': Sketch by T. C. Derrick, 131
Rome, Front of St. Peter's: Sketch Restoration by J. Tavenor-Perry, 379, 388
Rome, Ponte Nomentano: Drawn by J. Tavenor-Perry, 496
Royal Academy Gold Medal Design: a Nobleman's Mansion: by H. H. Jewell, 695-697
Rule, the 2-ft., Attachments for, 370

ST. MARTIN-IN-THE-FIELDS CHURCH, London: Drawn by J. Quekett, 642
St. Paul's and Neighbourhood, Wren's and Evelyn's Plans for, 587
St. Paul's, London: Block Plan, 486
St. Peter's, Rome, Sketch Restoration of Front: by J. Tavenor-Perry, 379, 388
Sanatorium, Queen Alexandra, Davos, 365
Scale, Mavitta's Enlarging, etc., 317
School, Higher Elementary, Long Eaton: G. H. Widdows, Architect, 130, 131
School, London County Council Secondary, Clapham T. J. Bailey, Architect, 643, 645
School Plans, 209-213
Schools, the Coopers' Company's, Bow: T. P. Figgis and A. E. Munby, Architects, 438
Sculptured Panel found on Site of Corstopitum, 37
Sculpture on Leper Hospital, Taunton: Drawn by Sidney Heath, 39
Sculpture, Welsh National War Memorial, Cardiff, Albert Toft, Sculptor, 584
Shop Architecture, an Effort in, 362
Shoreditch, St. Leonard's Church: Drawn by J. Quekett, 160
Sketch-Book, Architectural Association, a Plate from the, 100
Sketches: at Egyptian Exhibition, University College, 64; St. Genou, Indre, 631-633
Sketches with the Architectural Association Excursion: by W. Curtis Green, 186, 187, 208, 215
Smithfield, Aisle of St. Bartholomew: Photographed by Miss A. G. Weaver, 240
Southwark, Church of St. George-the-Martyr: Drawn by J. Quekett, 528
Spitalfields, Christ Church: Drawn by Sidney Heath, 46
Standards, London's Electric Light, 201, 202, 203
Stoke-on-Trent Town Hall Additions: Design by Garratt & Simister, placed first by Assessor, 266, 267; Design by W. Haywood, placed third by Assessor, 267; Design by Warwick & Hall, 240
Stratford-on-Avon, Almshouses: Drawn by Sidney Heath, 315
Sword Rest, All Hallows Church, London: Drawn by F. J. Carmichael, 161

TAUNTON, Sculpture on Leper Hospital: Drawn by Sidney Heath, 39
Toledo Cathedral, etc., 256, 257
Tomb of Phillipe Pot in the Louvre: Sketched by Sidney Toy, 161
Tomb, the Basset and Mansel, Llantrithyd Church: Drawn by W. Eaton, 287
Town Hall Additions, Stoke-upon-Trent: Design by Garratt & Simister, 266, 267; Design by W. Haywood, 267; Design by Warwick & Hall, 240
Town Hall, Chelsea: New Front: Leonard Stokes, Architect, 528
Town Hall Extension, Grimsby: First Premiated Design, by Eade, Johns, & Browne, 338; Second Premiated Design, by Withers & Meredith, 365
Trowel and Bag, Presentation: Designed by Silas Paul, 439

UPPER SLAUGHTER, Sketches at: by W. Curtis Green, 187

VARALLO, Chapel, etc., 665, 666
Varese, Chapel at, 667
Viaduct, Lethbridge, Canada, 90
Victoria and Albert Museum, Interiors: Aston Webb, Architect, 17

WALCOT, Old Bench Ends, St. Nicholas: from Photographs by H. Walker, 17
Warrington, Proposed Church: Matthew Honan, Architect, 389
Warwick, Leicester's Hospital: Drawn by Sidney Heath, 385
Waterlow Court, Hampstead Garden Suburbs: M. H. Baillie Scott, Architect, 47
Westminster Abbey, South Transept: Drawn by C. A. Bassett-Smith, 586, 587
Westmorland Home for Consumption: J. Hutton, Architect, 97
Whitgift Hospital, Croydon: Drawn by Sidney Heath, 127, 334; Overmantel: Drawn by Pepler & Allen, 162; Sketches by B. M. Goodwin, 382, 383
Wimborne, St. Margaret's Hospital: Drawn by Sidney Heath, 589
Winchcombe, Sketches at: by W. Curtis Green, 187
Winchester, 'Dawn House': Ernest Newton, Architect, 72
Window, Pyecombe Church: Designed by A. A. Orr, 387
Withington Church: Sketches by W. Curtis Green, 215
Wokingham, House: Ernest Newton, Architect, 72, 73
Wren's Plan for St. Paul's and Neighbourhood, 587

Printed at WINDSOR HOUSE PRINTING WORKS, Bream's Buildings, London, E.C.

Digitized by Google

VOL. XCVII., No. 3465.—SATURDAY, JULY 3, 1909.

THE BUILDER

Contents.

	PAGE
THE PROPOSED ST. PAUL'S BRIDGE	1
PETROL-AIR GAS	2
NOTES	3
THE ARCHITECTURAL ASSOCIATION AT OXFORD	4
STEEL SKELETON FRAMEWORK AND FERRO-CONCRETE STRUCTURES IN LONDON	5
THE PENROSE ALMSHOUSES, BARNSTAPLE	11
THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS	11
NOTES FROM PARIS	14
PICTURE EXHIBITIONS	14
PROPOSED LABOUR EXCHANGES	14
GUILD OF ARCHITECTS' ASSISTANTS	15
THE ARCHITECTS' TECHNICAL BUREAU	15
THE LONDON COUNTY COUNCIL	15
MEETINGS	16
FIFTY YEARS AGO	16
"BUILDER" COMPETITION FOR A FOUNTAIN	16
ILLUSTRATIONS:—	
THE NEW COTTON EXCHANGE, LIVERPOOL	16
INTERIORS, VICTORIA AND ALBERT MUSEUM	16
BENCH ENDS, ST. NICHOLAS, WALCOT	17
APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1908	17
COMPETITION NEWS	18
TRADE CATALOGUES	18
BOOK RECEIVED	19
CORRESPONDENCE:—	
THE COUNCIL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS	19
"A DIPLOMA COURSE IN ARCHITECTURE"	19
MIDDLESBROUGH LIBRARY COMPETITION	19
LIME BURNING	19
MIDDLESEX COUNTY COUNCIL	19
SCHOOL BUILDING IN LONDON	20
WESTMINSTER CITY COUNCIL	20
MASTER BUILDERS' ASSOCIATIONS, ETC.	20
PROJECTED NEW BUILDINGS IN THE PROVINCES	20
LONDON AND DISTRICT BOROUGH COUNCILS	20
LONDON COUNTY COUNCIL EDUCATION COMMITTEE	21
OBITUARY	21
GENERAL BUILDING NEWS	21
APPOINTMENTS	22
SANITARY AND ENGINEERING NEWS	22
STAINED GLASS AND DECORATION	22
MISCELLANEOUS	22
CAPITAL AND LABOUR	24
LAW REPORTS:—	
CONTRACTORS' CLAIM AGAINST ARCHITECT	24
WEST-END ANCIENT LIGHT DISPUTE	24
PATENTS	24
SOME RECENT SALES	24
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	25
PRICES CURRENT	29
TENDERS	30

Illustrations.

INTERIOR: LIVERPOOL COTTON EXCHANGE. MESSRS. HUON A. MATHAR & F. W. SIMON, ARCHITECTS.

INTERIORS, VICTORIA AND ALBERT MUSEUM. SIR ASTON WEBB, C.B., R.A., ARCHITECT.

OLD BENCH ENDS, ST. NICHOLAS, WALCOT. FROM PHOTOGRAPHS BY MR. HENRY WALKER.

Illustrations in Text.

	PAGE
THE PENROSE ALMSHOUSES, BARNSTAPLE	11
GROUND PLAN, VICTORIA AND ALBERT MUSEUM	17

The Proposed St. Paul's Bridge.

AFTER mature consideration the Bridge House Estates Committee of the City Corporation has come to the conclusion that the cost of acquiring the property necessary for the provision of an adequate northern approach viaduct to Southwark Bridge would be absolutely prohibitive. It is considered further that even if Southwark Bridge were reconstructed with an approach communicating with Queen Victoria-street or Cannon-street, the effect would be to induce serious congestion in an area where traffic is sufficiently difficult to cope with as matters already stand.

Consequently the committee recommend that the present Southwark Bridge should merely be improved by lowering the crown of the arches somewhat and by reducing the gradient to 1 in 33. These alterations will doubtless encourage the increased use of the bridge and render it far more efficient than at present as a means of communication between Upper Thames-street and the busy mercantile region intersected by Southwark-street and Southwark Bridge-road. But however acceptable the improvement may be for traffic of more or less local character, the remodelled bridge cannot possibly be regarded as a substantial addition to the cross-river communications between the northern and southern districts of the metropolis.

Recognising the force of this point, the Bridge House Estates Committee are unanimous in advocating the suggestion made by their Consulting Engineer, Mr. Basil Mott, that an entirely new bridge shall be constructed between Southwark and the City.

The proposed structure, designated in the report of the Committee as "St. Paul's Bridge," will commence with a southern approach at the junction of Southwark-street and Southwark Bridge-road. Rising gradually thence towards Bankside, the approach will join the bridge proper crossing the river in three spans; then comes the northern viaduct passing over Upper Thames-street and the lower end of Queen Victoria-street and entering Cannon-street near St. Paul's Cathedral. If this project should be realised, it would be very desirable to afford ready access to the commencement of the northern approach for traffic coming down St. Martin's-le-Grand from Clerkenwell and the North of London, thus making the new bridge part of an additional main thoroughfare between the north and south of London. To provide for the last-mentioned facility it would only be necessary to clear a comparatively limited area between Cannon-street and Cheapside, and we gather that the Committee have suggested the absorption of the property involved as a future improvement.

The general idea of an additional bridge is of distinct merit, and its value is further increased by the proposal that the structure shall be of width sufficient to accommodate two lines of tramway rails, enabling the Southwark Bridge service to reach the City and to pass beyond to the north of London. Of course, it will be understood that tramways will not be allowed in the City except on part of the bridge, and to get over the difficulty created by this restriction it is intended that the tramway lines shall dive into a subway after crossing the Thames and emerge to the surface in Aldersgate-street, where a junction will be effected with the northern system of the London County Council.

As things stand to-day, Southwark Bridge is practically deserted by heavy traffic, which naturally gravitates towards London Bridge and Blackfriars Bridge, both of these being inconveniently crowded. The proposed new bridge ought to result in much relief, especially if connected with St. Martin's-le-Grand, with suitable regulation of the traffic at the top of Cheapside.

So far as tramway services are concerned, the establishment of another link between north and south should be an unmitigated boon. The connexion already existing *viâ* Westminster Bridge and Kingsway is rather circuitous and cannot possibly accommodate all the through cars which are required by the public. Hence the construction of the proposed new line is clearly desirable,

Digitized by Google

and if the new scheme should be carried out, as we imagine it will be, the inhabitants of London will have reason for much gratitude to the Corporation of the City of London, by whom the entire project will be executed without cost of any kind to the ratepayers. The estimated outlay is not far short of two millions, the whole of which can fortunately be furnished by the funds of the Bridge House Estates.

So far for the traffic considerations. But the proposed erection of a new bridge between London and Southwark Bridges is a matter of architectural importance also. It is to be hoped that an architect will be called in to design the architectural treatment of the bridge, and that some effort will be made to render it a worthy companion to Rennie's grand and monumental structure. And with this view we strongly urge that the bridge should be a granite erection of monumental character. A bridge over the Thames, in the heart of the capital, ought not to be governed in its architectural design by mere questions of waterway. It is easy to say that a wider waterway can be secured by a steel bridge with masonry abutments, but there would be no practical gain in that when the actual waterway is practically fixed by the openings of London Bridge only a little way below. There is no reason why a new bridge should not be erected as grand as Rennie's, if the same principles are observed—solidity, mass, and simplicity. A bridge bedizened with so-called architectural ornament is the last thing we want. What we desire to see erected is a bridge with the higher qualities of architectural expression; a bridge characterised by fine lines, monumental appearance, and well-designed mouldings—the last a most important point, and one in which bridges designed by engineers alone invariably fail. One remembers the preposterous mouldings and details which were at first proposed for Vauxhall Bridge. The history of that bridge, and of the final substitution of the present design for that which the County Council's Engineer was prepared to carry out, has to some extent awakened the public mind on the subject, and the design of the new bridge will not perhaps be a matter of entire indifference to the more educated portion, at all events, of the inhabitants of London. But Vauxhall Bridge, good as it is in many ways, is too light a class of design for a City bridge. We want another London Bridge; different perhaps, but not inferior to its grand predecessor.

PETROL-AIR GAS.

THE use of a mixture of air and petrol vapour as a lighting and heating agent is not novel, but the petrol-air gas which has become so popular during the last three or four years for lighting and heating country houses differs materially from the air gas used in the XIXth century. The old form of air gas contained so much petroleum vapour that it burned with a luminous flame. The proportion of petrol vapour it contained varied with the temperature of the atmosphere, and considerable quantities of liquid petrol and water often accumulated in the distributing pipes and interfered with the flow of gas. The modern form of air gas contains so little petrol vapour that it burns with a non-luminous flame, which is useful for lighting only when covered with an incandescent mantle. The machines for manufacturing the mixture are so contrived that the proportion of petrol vapour does not vary substantially with variations in atmospheric temperature, and the proportion of petrol in the mixture is so small that subjection of the distributing pipes to the temperature at which water freezes does not cause any of the petrol to condense to the liquid form.

When air flows through a vessel containing liquid petrol the air carries away with it some of the petrol in the form of vapour; and the temperature of the liquid petrol remaining in the vessel, and the temperature of the vessel itself, is reduced by the process of vaporisation. The quantity of petrol which escapes as vapour varies with its temperature. The colder the liquid and the colder the air, the smaller is the quantity of petrol vaporised. It is necessary, therefore, to maintain the vessel in which the petrol is vaporised at a uniform temperature, and in modern machines various devices have been adopted to prevent change of temperature. The vessel in which the petrol and air are mixed is called the carburettor. In most machines the petrol enters the carburettor drop by drop, and the speed of the petrol flow is automatically regulated by the rate of flow of air through the carburettor.

Although all petrol-air gas plants now sold in this country produce a mixture which burns with a non-luminous flame, yet these plants may be divided into two classes, viz.: (1) Those which produce "poor" air gas, or a mixture which contains so little petrol that the mixture is not explosive; and (2) those which produce "rich" air gas, or a mixture which contains so much petrol that the mixture is not explosive.

Poor Air Gas.

It is commonly stated that any mixture of air and petrol which contains less than 2 per cent. of petrol vapour is not explosive. The machines which produce poor air gas mix the vapour from one gallon of petrol with about 1,400 cubic ft. of air, and the composition of this mixture is approximately 98½ per cent. of air and 1½ per cent. of petrol vapour by volume. Some use a gallon of petrol to produce only 1,200 cubic ft. of mixture, and others produce 1,600 cubic ft. with the same quantity of petrol. The composition of commercial petrol varies considerably, the specific gravity ranging from 0·68 to 0·73. The lighter the specific gravity the more suitable is the petrol for air gas manufacture. The heavier petrols are liable to leave a residue which cannot be vaporised at normal atmospheric temperatures. When poor air gas flows under pressure from the end of an open pipe it cannot be ignited by the flame of a match, but blows out the flame. When, however, it is passed through a fine wire-gauze burner it can at once be lighted by a flaming match, and burns with a short blue flame. It is said that this so-called "non-explosive" mixture becomes inflammable when passed through gauze because the gauze causes the air and petrol vapour to become more intimately mixed, and the burner is often described as an "atomizer." The explanation is not altogether satisfactory, and it is probable that if the mixture were not under pressure it might be ignited. For all practical purposes the mixture may be regarded as non-explosive, and leakage of the mixture into the air of a room would not be dangerous.

Rich Air Gas.

Instead of using one gallon of petrol to produce 1,400 cubic ft. of air gas, three times that quantity of petrol may be used in the same volume of mixture. This richer air gas also burns with a non-luminous flame, but has a higher value for incandescent lighting and for heating purposes than the poorer gas. In Strode's "aerogen" plant one gallon of petrol (sp. gr. 0·68) is used to produce 520 cubic ft. of mixture, and this form of air gas has been used for several years in various parts of the world with satisfactory results.

Lighting Values.

The following figures represent approximately the illuminating values of air gas when used with an incandescent mantle under favourable conditions:—

Poor air gas (1 gallon of petrol in 1,400 cubic ft.) = 6 candles per cubic foot per hour.
Rich air gas (1 gallon of petrol in 520 cubic ft.) = 17 candles per cubic foot per hour.
Ordinary town gas (low pressure) = 20 candles per cubic foot per hour.

Heating Values.

Poor air gas (1 gallon of petrol in 1,400 cubic ft.) = 100 B. Th. U. per cubic foot.
Rich air gas (1 gallon of petrol in 520 cubic ft.) = 280 B. Th. U. per cubic foot.
Ordinary town gas = 600 B. Th. U. per cubic foot.

Distribution.

The quantity of petrol in the form of low-grade air gas we have described is so small that little or no condensation of petrol occurs in the distribution pipes. When properly manufactured the air gas may be stored in an ordinary gas-holder and distributed through miles of pipes, if desired.

Uses of Air Gas.

Low-grade petrol-air gas can be used for most of the purposes for which coal gas is employed, except for producing luminous flames or for internal combustion motors. It is most extensively used as a supply for inverted incandescent burners, but is also useful as a cooking agent and for gas fires. The initial cost of the generating apparatus and the trouble of feeding it with petrol prevent air gas from being a formidable competitor with coal gas distributed at a price lower than five shillings per 1,000 cubic ft.; but in many country houses air gas has been adopted, and has given great satisfaction to the inhabitants. Little labour is involved in its production, no disagreeable odours are evolved during the process of manufacture, the generating plant occupies very little space, and there are no waste products except, in some cases, a little petrol residue not vaporised by the current of air. The probability of a substantial rise in the price of petrol due to the supply being too small to meet the demand by motorists and others should not, however, be overlooked.

Digitized by Google

NOTES.

The Decay of Westminster Abbey.

THE report of Dr. John Owens to the Coal Smoke Abatement Society, to which reference was made by Sir William Richmond at the recent meeting of the Society, shows that the destruction of Westminster Abbey by coal smoke is still proceeding at a rapid rate. That coal smoke has done, and is doing, great injury to the fabric of the Abbey is undeniable, and great credit is due to the Society for its continued efforts to abate the smoke nuisance. Year after year, through many decades, the intelligent classes have been fighting for a cause which has often appeared hopeless, but their work has not been fruitless. In London the smoke nuisance has undoubtedly been less pronounced in recent years, and in many provincial towns the strenuous work of smoke inspectors and local authorities has had excellent effect. The day is surely approaching when the emission of black smoke from house or from factory will be prohibited. It is worth notice, in connexion with this subject, that the campaign against London smoke is as old as the time of John Evelyn, as will be seen by the following entry in his diary under date December 11, 1662:

"I received of Sir Peter Ball, the Queen's Attorney, a draught of an Act against the nuisance of the smoke of London, to be reformed by removing several trades which are the cause of it, and endanger the health of the King and his people. It was to have been offered to the Parliament, as his Majesty commanded."

In the proposed Act of 1662 it is evident that it was the factories which were regarded as the chief origin of the nuisance. Under present law we have pretty well got the factories under control, and they can and do (in most cases) use furnaces which avoid the formation of smoke. In the immense extent of modern London it is the ordinary house fires, for which unscientifically constructed grates are used, that produce the bulk of the smoke; and they are much more difficult to bring under legal control.

London Building Acts Amendment.

THE decision of the Committee of the House of Commons announced on Tuesday virtually assures the speedy yet long-awaited reform of the London Building Acts. Under the new regulations formulated by the County Council the claims of steel to be regarded as a trustworthy structural material are fully recognised. The resistance of steel to axial and other forces is duly taken into account and excessively thick masonry walls are no longer demanded for buildings constructed with an efficient metal framework. Some objection was raised to the proposition that the interior girders and joists of a steel frame building are essential portions of the framework, but we are glad to observe that the reasonable contention of the County Council in this respect was accepted by the Committee. The provisions of the proposed new code cannot be accepted as final, and we quite agree with Mr. E. T. Hall in the view that they will have to be varied from time to time as experience shows variation to be necessary. Powers for this purpose are expressly given by sub-clause (34) subject to approval by the existing Tribunal of Appeal, whose future constitution should be such as to make it in fact a court of structural experts. No regulations affecting the use of reinforced concrete have been put forward, but the Bill gives authority to the County Council to prepare such regulations, a duty requiring much discrimination and which ought to be performed in collaboration with the various architectural and engineering societies directly interested in reinforced concrete construction.

British Forestry.

DISTINCTLY encouraging results have attended the competition instituted by the Royal English Arboricultural Society, in conjunction with the Royal Agricultural Society, for the best-managed plantations in this country. The comprehensive collection of British timber at the exhibition of the Royal Agricultural Society afforded another illustration of the increasing attention devoted by landowners to practical forestry. The exhibits included planks and boards of ash, beech, elm, larch, oak, pine, and spruce, these examples extending for well-nigh 100 yds. along each side of the Education Building at Gloucester. In addition, a large assortment of field gates, furniture, and other articles served to emphasise the claims of home-grown timber. The exhibition has certainly brought into prominence the good work that is being conducted by numerous estate owners, and should have considerable influence in stimulating the growing interest in British forestry.

Water Supply.

THE case, Attorney-General *v.* West Gloucestershire Water Company, noted in the *Builder* of March 6, has been carried to the Court of Appeal, and the decision of the judge of the Chancery Division has been affirmed. The action was brought at the relation of the Bristol Waterworks Company to restrain the defendant company from supplying water outside the limits of their district. The defendant company under the statutory powers conferred upon them were authorised to supply water within certain specified limits, and there was an obligation upon them to supply water for domestic purposes at certain rates, but there was a further section empowering them to supply water for other purposes and on other terms by agreement provided that the supply for domestic purposes was not interfered with, and it was contended that this enabled the company to agree to supply persons outside their district. The Court held that this section was governed by the other section, and that the powers of the company were limited to the particular districts defined in the Acts. It further held that a supply outside the district was not merely incidental to their general powers. The Court affirmed the view expressed by the judge below that the supply in this case took place outside the statutory limits. The main, at the expense of the person supplied, had been carried about 7 yds. beyond the limits, where a hydrant and meter had been erected which supplied the water through pipes laid to the house. The judge had held supply to take place at the terminals at which the consumer takes possession. It is to be observed that the injunction in this case was granted not because a monopoly of a rival company was infringed, but because the defendant company by supplying water outside the district were exceeding their statutory powers and acting *ultra vires*.

Reinforced Concrete Regulations, New York.

IT is curious that the regulations proposed in the new building code of New York relative to reinforced concrete construction should be far more conservative than accepted practice in this country. For example, it is suggested that the height of reinforced concrete buildings shall be restricted to 75 ft., and that the thickness of floors shall be not less than ¾ in. per foot of span. The first of these stipulations would prohibit such structures as the new public office of the General Post Office, the Royal Liver Building now in course of completion in Liverpool, and many other reinforced concrete buildings already erected. The second regulation would frequently necessitate the employment of floors of thickness much greater than that demanded by structural considerations and would clearly prohibit all the floors as constructed in the new buildings of the General Post Office. Referring to this clause of the proposed new code the *Engineering Record* expresses the view—with which we fully agree—that if the British Government after careful investigation finally selected reinforced concrete as the best material for the Post Office extension, the city of New York has no reason to forbid the erection of similar buildings.

The Fire Protection of St. Paul's.

A COMMENDABLE decision of the Dean and Chapter of St. Paul's Cathedral is embodied in the scheme prepared by Mr. M. E. Macartney, the Surveyor, providing for a high-pressure fire service, enabling water to be thrown on any part of the dome and lower roofs from the stone gallery. The system is all the more desirable owing to the increased height of buildings in close proximity to the fabric, and to the fact that the pressure at command of the London Fire Brigade is inadequate for dealing with structures beyond 70 or 80 ft. in height. In American cities, where tall buildings are the rule, high-pressure fire systems are absolutely essential. Similar installations are equally necessary for the protection of numerous structures in London and other cities of Great Britain, but hitherto the tendency has been rather to place reliance in Providence than to expend money. The example set by the authorities of St. Paul's is one deserving general imitation by those responsible for the safety of important buildings which cannot be adequately covered by water jets from the ordinary water mains.

Mont Saint-Michel.

UNDER the pretext of facilitating the access of tourists to Mont Saint-Michel the Administration des Ponts et Chaussées took on themselves to construct, about twenty-five years ago, an embankment or dyke which seems likely to have the effect of bringing about the ruin of the

Digitized by Google

wall of the *enceinte* extending round the island. A committee was appointed recently to consider the subject, and this committee, in 1908, decided that the silting up of the land ought to be arrested for a distance of 1,000 metres from the Mont, in order to maintain its complete isolation and avoid the action of the tide, piled up by the dyke, against the base of the *enceinte* wall. The Secretary of State for Art has now taken the matter under his personal charge. The church has been scheduled among "Monuments Historiques"; the ramparts have been placed under the charge of the Administration des Beaux-Arts; a fire prevention service has been organised and provision made for an adequate supply of water for this purpose. The work of restoration commenced by the late M. Corroyer is being carried on, and the restoration of the church and the buildings connected with it will be completed this year. A conference has been arranged between the Ministry of Fine Arts, that of Public Works, and the Ministry of Marine, in order to take measures to prevent the silting up of the sea bed and to preserve the Mont in the insular condition which is its great safeguard. All this is very well, though perhaps English readers may consider the "restorations" of M. Corroyer and his successors an even more serious danger than the action of the waves.

The Aldersgate Fire.

AT the inquest held by the City Coroner on the origin of the recent fire at Lauderdale-buildings, Aldersgate-street, the evidence given by superintendents of fire-stations was to the effect that the absence of means of exit by the way of the roof greatly increased the danger to human life in case of fire; and that celluloid, which was one of the materials dealt in by the owners of the premises, "was a most dangerous article to store in what was known to be a danger zone." To this Mr. Perkins, the Deputy District Surveyor for the Western District of the City, added that match-boarding walls were dangerous in themselves, more especially when there was stored celluloid on the premises. We do not gather whether they were match-boarding partitions merely, or match-board linings to walls; it would make some difference as to their liability to catch fire quickly. The points noted by the witnesses are important; but in regard to celluloid combs (which appears to have been the form in which celluloid was stored), as long as it is legal to deal in them those who deal in them must store them—somehow; and perhaps it would have been more to the purpose to have elicited some evidence as to how celluloid may be most safely stored.

Universities versus Technical Schools.

THE theme of Professor Meldola's presidential address delivered at the recent annual meeting of the Society of Chemical Industry was "Education and Research in Applied Chemistry," but he drew attention to certain matters which concern the entire nation, and some of his remarks may be applied to subjects other than applied chemistry. Professor Meldola accuses British universities of entering into competition with technical schools by the establishment of departments of technology, and he accuses the technical schools of forming classes to qualify students for academic degrees when they ought to be teaching technology. He pointed out that deplorable wastage must result from the competition between university and technical school, and asserted that a crisis is approaching both for teachers and technologists. He ridiculed the attempt to teach chemical technology in evening classes, and apparently he desires to prevent every youth who cannot afford to spend five years in attending day classes at a technical college from attempting to become a chemical technologist. We hope and believe that he will never be able to achieve his object, for poverty should never be allowed to debar persevering ability from seeking and obtaining the prizes of life. Professor Meldola says that "it must be realised that by evening work alone the average youth starting in life with the object of becoming a chemical technologist can never hope to attain any position of importance"; and he thinks that at least five years, and preferably seven years, should be spent in the technical school. Professor Meldola has been a Professor at the Finsbury Technical College, London, for nearly a quarter of a century, and has long been recognised as an authority on the subject of technical education.

Church of St. Margaret, Lothbury, E.C.

THE rector and wardens propose to erect a choir and parish vestry upon a portion of the disused churchyard lying between the north side of the church and Church-court. The church was rebuilt in 1690, at a cost of 5,340*l.* 8s. 1d., after Wren's designs. The track of the Wall brook lies below the chancel window and altar. The beautifully-carved font-bowl, similar to that in St. James's, Piccadilly, is attributed to Grinling Gibbons. The fabric was restored by Sir G. G. Scott. In the course of repairs effected in 1886 the west window was opened out by the removal of the organ gallery, the other galleries were taken down, and the pews were lowered. At that time were discovered some remains of the earlier church of King Edward II.'s day, which Alderman Robert Large enlarged in or about 1440. The west wall appeared to be *in situ;* in the vault an opening in that wall was considered to be the entrance into the old crypt; a curious flight of steps, still closed, was found to lead from the vault up to the floor of the existing church. In our issue of July 18, 1896, we published Mr. H. Inigo Triggs's measured drawings, with details of the carved oak chancel screen and a plan of the church.

Birthday and other Honours.

AS is too often the case, art and literature were entirely passed over in the list of Birthday Honours; but the deficiency was somewhat atoned for at the opening of the Victoria and Albert Museum, when Sir Aston Webb was promoted "C.B.", and Mr. Cecil Smith received a Knighthood; both of them honours which will be regarded everywhere as well merited.

Architectural Copyright.

IN the article on this subject in our last issue we quoted an enigmatical sentence from Mr. Simpson's Report, beginning "Usefulness in the application of an art cannot be admitted as a basis of copyright," etc., and remarked that the sentence hardly seemed logical. It appears we were right, and that the advance copy of the Report sent to us had an important misprint; it should have read, "*Uselessness* . . . cannot be admitted," the sentence going on to say that on such a basis caryatides, pillars, etc., might be debarred from copyright protection on the ground that they served a useful purpose.

Messrs. Stock, Page, & Stock.

IN an Obituary notice in our last issue of the late Mr. Stock, a very old member of the profession and formerly member of the above-named firm, it was stated that the firm was dissolved in 1907. The writer of the obituary notice was misled by a statement in a daily paper, copied from the *London Gazette*, the wording of which gave that impression. It is entirely an error, as the firm is carrying on practice now under its old style; and as the mistaken announcement might have caused them serious injury, we feel bound to make the correction in the most prominent manner. We may add that we are indebted to the present representatives for the courteous manner in which they requested correction of a mistake which must have caused them considerable annoyance.

THE ARCHITECTURAL ASSOCIATION AT OXFORD.

ABOUT thirty members, including the President, Vice-Presidents, and five members of Council, visited Oxford on Saturday, June 26, and spent an interesting day in that most beautiful of cities. To see Oxford in a day was, of course, an unattempted impossibility; fortunately most of the party had a previous acquaintance with the broader aspects of the place, and on this occasion attention was principally concentrated on less familiar attractions.

Christ Church was first visited. Here restoration was found to be in progress, the Tom Tower being under scaffolding. With a passing glance at the marvellously anachronistic staircase approach, with its fan vaulting of 1640 (laconically attributed to Mr. Smith, of London), the hall was reached and its magnificent proportions and fine collection of portraits admired. A visit was next paid to the kitchen—part of the original buildings as completed by Wolsey. The huge roasting-grate, with its spit turned by power from a fan revolving in the chimney, excited considerable attention. No description of the cathedral need be attempted. The present arrangements, dating from the restoration in 1870 by Sir Gilbert Scott, are on the whole very successful, and Scott's east end forms a fitting termination to the lovely choir, though acquaintance with his work elsewhere in Oxford almost compels the opinion that accident alone can account for it. The more recent formation (by Messrs. Bodley & Garner) of an entrance at the west end direct from Tom Quad adds much to the apparent size of the church. The cathedral contains some very interesting glass, of dates ranging from the XIVth to the XIXth century, including the well-known but over-rated windows by Burne Jones. Dean Duppa, in 1634, swept away much tracery and priceless old glass, substituting Dutch glass by Abram Van Linge, which was in its turn replaced by commonplace modern work during Scott's restoration: A sample of Van Linge's glass

Digitized by Google

is left in position at the west end of the north aisle—presumably as evidence of the "improvement" last effected, though its weight is entirely on the other side.

Passing on through Dean Aldrich's Peckwater Quad, where the effects of weather on the soft beds of Headington stone are terribly apparent, a move was made to Magdalen College, where the Vice-Chancellor of the University gave a brief and interesting address upon the growth and history of the buildings, which embody, in the range next the High-street, parts of the Hospital of St. John the Baptist, founded (or possibly refounded) about 1213. Around the outer, or St. John's Quad, stands an interesting series of buildings, which include also the "Grammar Hall," chapel, Muniment Tower, Founder's Tower (all parts of the original buildings of William of Waynflete), and the beautiful additions by Messrs. Bodley & Garner—certainly not the least satisfactory buildings of modern Oxford. It is interesting to learn that a sermon is still annually preached from the open-air pulpit on St. John the Baptist's Day, after a hiatus dating from the Wesleyan movement. Whitfield having then quoted this sermon as a precedent for open-air preaching, the college authorities, thinking to discount the argument, discontinued the practice. The chapel, with its extraordinary sepia windows, and the hall—much improved by the removal of Wyatt's plaster ceiling—were inspected. The beautiful panelling on the dais of the latter, doubtfully reputed to be from Reading Abbey, was greatly admired. Walking round the cloistered quad, the quiet Renaissance buildings, built by Holdsworth in 1735, facing the Deer Park, were viewed, and with a parting glance at the unrivalled Chapel Tower the party adjourned to the Eastgate Hotel—a pleasing building by Mr. Warren—where lunch was served.

Merton was next visited. Admiring, *en passant*, the fine XIIIth century ironwork of the hall door, a brief stay was made at the chapel—cold and forbidding, as a result of restorations—after which much relief was felt in the naïvely charming library. This extends around two sides of the Mob Quad, approached by a straight stair in the angle. The old bookcases, their single-light windows between, the XVIIth century bay-shaped dormers above, and the Jacobean panelling and ceiling spandrils, richly emblazoned with arms at either end of the library make collectively one of the most delightful interiors in Oxford.

Crossing the High-street, the Sheldonian Theatre—one of Wren's early works—was entered, and evidences of inexperience were noticed with great interest in the inharmonious interior and wasteful use of timber in the giant roof trusses. Passing from thence into the quadrangle of the Old Schools, the Divinity School—that marvellous construction, which but for the clear glass of its windows disclosing the gigantic buttresses outside would appear positively insecure—and Archbishop Laud's Convocation House were in turn inspected. The library galleries, which have gradually absorbed practically all the original Examination Schools, were then traversed, the old fittings of Duke Humfrey's Library, above the Divinity School, being particularly admired. Next visiting the Radcliffe Camera, a perfect contrast was enjoyed. There is a unity about the design of Gibbs's masterpiece, wholly differing from the more intimate human feeling of the earlier work, but in its way equally satisfying. It is unfortunate, though, that no attempt should be made to remove the air of drab dullness about the interior, and that the decayed stone urns on the balustrade should be replaced in terra-cotta.

In New College, the magnificent foundation of William of Wykeham, we have the model of all subsequent collegiate arrangement. The chapel bears internally too much evidence of the hard and unsympathetic work of the Gothic revival. The roof and fittings are by Scott, and the figures in the tabernacled east wall were replaced by Pearson. Here, and in other chapels—notably Merton and Magdalen—the spacious effect of the open western transept or narthex is very impressive. This hall is a splendid room, with panelling resembling that at Magdalen. The roof, with its louvre, was unfortunately raised bodily during Scott's restoration—a wholly unnecessary alteration most unfortunate in its effect upon the proportions of the room. In the gardens are considerable remains of the old city walls, which, beside their intrinsic interest, serve to hide Scott's additions next Holywell-street, which is not a matter for regret. Wadham, the youngest of the colleges, forms a picture at once satisfying and complete. It was founded by Dorothy Wadham, and remains practically as she left it in 1613. The marked Somersetshire character of the work and its marvellous conservatism in detail have often been commented on, but the symmetrical arrangement of the east side of the quad affords nevertheless an interesting example of the advance of the Renaissance. In the hall are portraits of two eminent architects who have been Wadham men—Sir Christopher Wren and Mr. T. G. Jackson, R.A. The latter has commemorated the connexion by writing the architectural history of his college.

After taking tea by kind invitation at Black Hall, a visit was paid to St. John's, where attention was principally confined to the library, though admiration of the exterior beauties of Laud's work in the Back quadrangle and garden front was, of course, not withheld. It is astonishing to reflect on the negligence which could permit Laud's original fittings to be swept out of the library, substituting the banalities of Blore. One of Laud's bookcases remains, having fortunately been repurchased after the whole had been sold. The promise of more restoration at St. John's may well make the flesh creep, but there should be no cause for alarm this time, as the College authorities have wisely consulted the Society for the Preservation of Ancient Buildings, under whose care the garden front will shortly be sprayed with baryta water to arrest the rapid decay of the stone. An example worthy of emulation has also been set in the preparation of a systematic series of photographs of all the carved spandrels and enrichments of the arcaded quad, the whole forming a collection of surpassing interest and deserving of publication. In the drawing-room of the President's lodging, which by the kind offices of college dignitaries members were allowed to inspect, are some fine portraits contemporary with the founder, and a chimneypiece with the arms of Laud.

On the way to the station the quad and gardens of Worcester College were visited. The levels of the quad, its sunk lawn surrounded on two sides by the stately buildings of Dr. Clarke, with the picturesque mediæval *mansiones* of the old Gloucester Hall on the lower side, and the end facing the entrance open to the extensive gardens, all help in producing a charming picture.

The party had able guides in Mr. Edward Warren and Mr. E. W. Allfrey, and to these gentlemen and to Mr. C. Wontner Smith, to whose initiative the visit was due, the thanks of members were freely expressed.

STEEL SKELETON FRAMEWORK AND FERRO-CONCRETE STRUCTURES IN LONDON.

ON Wednesday, June 23, Mr. Mooney's Select Committee and the House of Commons commenced the consideration of Part V. of the London County Council General Powers Bill, dealing with the rules applicable to the construction of steel skeleton framework and ferro-concrete buildings. The Hon. J. D. Fitzgerald, K.C., Mr. G. J. Talbot, and the Hon. G. E. Charteris were for the County Council; Mr. H. Lloyd, K.C., Mr. Lynden Macassey, and Mr. Kennedy for the Institution of Civil Engineers; Mr. H. Lloyd and Mr. Courthorpe Munroe for the Surveyors' Institution, and Mr. Freeman, K.C., and Mr. Lewis Coward, K.C., for the Royal Institute of British Architects.

Mr. J. D. Fitzgerald, in opening the case, said that prior to 1894 there were a number of Acts in force in London dealing with the construction of buildings, and in the year 1894 there was a bill promoted by the County Council by which the existing legislation was almost entirely rejected, and the provisions were consolidated and very largely amended by the Act then passed, known as the London Building Act of 1894. That Act had been from time to time amended by subsequent legislation. Part VI. of the Act dealt with the construction of buildings, and the section said, "Subject to any by-laws of the Council made in pursuance of this Act, walls shall be constructed of the substances and in the manner and of not less than the thickness prescribed by this Act or mentioned in the first schedule of the Act." The Act laid down the thickness of the walls; the higher the wall the greater the thickness of the lower portion. Since the Act was framed, buildings which were known as metal or steel construction framework buildings had come largely into use, especially in America, and the provisions of the Act were not really applicable to such buildings. These buildings were formed of a skeleton metal framework, and the walls were filled in and did not require to be of the thickness which was specified for ordinary buildings, and buildings of the warehouse class in the schedule of the Act of 1894. Under their existing Act the County Council had no power to dispense with walls of the prescribed thickness, and if a builder wanted to build a building supported by a framework of steel columns and transverse girders, he was put to the quite unnecessary expense of providing walls of the thickness prescribed for a different class of building altogether. It was not only a great expense, but it took up an unnecessary amount of ground space, and led to considerable delay in the construction of the building. The reason why it was not necessary to have in these steel framework buildings walls of such thickness was this: In an ordinary building the pressure which was borne by the walls was transmitted to the foundations throughout the whole length of the wall, and accordingly, to ensure the stability of the building, they required the external walls to be of the minimum thickness prescribed by the Act; but where they were dealing with a building of this kind the pressure was transmitted to the foundation by these pillars or columns of steel or metal. Accordingly, what they had to do was to see that these columns were of sufficient strength, and to see that the transverse beams or girders by which they were held together, and the joists which connected the transverse girders, were of sufficient minimum strength to ensure the stability of the building. When they had got that, it became unnecessary to fill in the walls to the very considerable thickness which was required by the Act of 1894 when dealing with buildings which were entirely constructed of brick or stone or similar materials. From time to time the County Council had been approached with a view to getting some alteration of law in this respect, and in 1905 they brought in a bill to amend the London Building Act, in which were inserted provisions enabling them to make regulations dealing with buildings of this class. They did not, however, insert any specific regulations or rules, and great objection was taken to this method of legislation by the Royal Institute of British Architects, the Institution of Civil Engineers, and other bodies, who said the Council ought to have in its Act definite rules which would guide the builder, and that these rules ought to be sanctioned by Parliament after a very full discussion by a Parliament Committee. In the end the County Council withdrew the bill except those clauses which related to fire protection:

Digitized by Google

Four years had elapsed, further experience had been gained, and in the present bill the Council had followed the suggestions which were made by the technical societies, and had inserted definite rules of construction with regard to buildings of this class, which were contained in clause 30. The Council had consulted the building rules which were in operation in a large number of American cities, but the clause as originally introduced into the bill had its basis in the draft of the Royal Institute of British Architects. After the bill was introduced a conference took place between the superintendent architect of the London County Council and the representatives of various technical bodies, and a large number of suggestions were made, and nearly all of them had been adopted by the County Council with a view of meeting the opponents to the bill in every possible way. There were three main objections outside the technical matters which were put forward in regard to these provisions. Firstly, it was said that under the existing Building Act, though the thicknesses of the walls were prescribed and no deviation was allowed for those thicknesses of the external walls, yet the provisions did not apply to the internal walls of the building, and that in constructing the internal walls of a building the builder or architect at present was left very much to his own judgment. It was contended that the same basis ought to be taken in dealing with a metal skeleton framework building, and that though the external pillars might be subject to the provisions of the bill the internal pillars and the internal girders ought to be left to the architect or builder to deal with as he thought proper. That was a view which the County Council was entirely unable to adopt, for they considered in the interests of public safety it was not only desirable, but absolutely necessary, that the internal arrangements, as well as the external arrrangements, of these metal skeleton buildings should be dealt with definitely by rules to be enacted by Parliament. Secondly, the bill, as originally drafted, proposed that an appeal from the district surveyor should go to the Council, whose decision should be final, and very great objection was taken to this. Both the Home Office and the Local Government Board took objection as well as the technical bodies. Finding that the Tribunal of Appeal was preferred by most of the petitioners, the Council had decided that the Tribunal of Appeal should be the Court of Appeal. The third main objection was that the proposed rules in clause 30 were not sufficiently elastic, and there was no power to alter the rules to meet the case of new inventions. He submitted that if they were to have Parliamentary rules they must be definite; the builder, or architect, or engineer, or whoever he might be, who was designing buildings must know definitely what was required of him. If he thought that in any special case the rules needed modifying, the only way to meet it was to give the power to County Council to modify or vary, and if they allowed this it followed also that they must allow the Council to impose, where necessary, some substituted condition or term in the interests of public safety. Accordingly, sub-section 34 had been framed to enable the Council to modify or waive any of the regulations in the section, but, at the same time, to impose or substitute any condition where desirable. Clause 31 of the bill was framed to deal with what were known as reinforced concrete buildings. In the opinion of the County Council and their advisers, the information and knowledge about such buildings as were composed of reinforced concrete had not arrived at a stage when it would be desirable or practicable to fix in an Act of Parliament definite rules for dealing with buildings of that class, and accordingly they took power to make regulations as to reinforced concrete buildings. The clause would enable the council from time to time to make by-laws or regulations dealing with such buildings, and as any new arrangements or methods came up, to deal with them as experience showed was the best way. The great objection of the opponents of the bill to this clause was that they said there ought to be some sanctioning body other than the County Council. Of course, the intention of the Council was to have conferred with the technical institutions before making such regulations, but to meet the objection they proposed to add that any such regulations made should be subject to the approval of the Local Government Board. Clause 33 dealt with the fees of the district surveyors.

Mr. W. E. Riley, F.R.I.B.A., superintending architect of the London County Council since 1899, was called, and stated that the proposals of the bill, generally speaking, were a relaxation of the existing law in order to meet a class of building which had come into existence comparatively recently. The walls under the Act of 1894 being continuous structures and bonded together, both cross, party, and external walls transferred a continuous strain to a continuous foundation, but in the skeleton frame building of this character each pillar conveyed a portion of the building to the foundation.

The fundamental distinction is, that the load to be borne, or the pressure of the load, is concentrated on certain points instead of being distributed thoroughout the wall?—Yes.

Continuing, witness said they were advised that under the existing rules they were unable to allow the builder to build without the thickness of wall prescribed in the schedule, and that was a hardship. He had made a calculation and applied it to a building which had been under the notice of the Building Act Committee, and the result was that the percentage of space occupied by the walls, under the Act of 1894, was 16 per cent., and the enclosures under the proposals in the bill would be only 8 per cent. Nearly every clause in the bill was based upon the principles of the Royal Institute of British Architects in 1905, and subsequently modified by negotiations with the technical societies. He had in the preparation of the clauses consulted the existing Acts in America and in Europe which dealt with such buildings substantially on the lines now proposed. In December he was authorised to invite the various societies to a conference, and he invited the Royal Institute and British Architects, the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Surveyors' Institution, the Concrete Institute, the British Fire Prevention Committee, the Institute of Builders, the London Master Builders' Association, and the District Surveyors' Association. All attended except the Institution of Civil Engineers. The bill was carefully considered and a few suggestions made, and the County Council accepted most of them. They had endeavoured to meet all the criticisms put forward, and the modified provisions now put forward must be observed as a minimum. He did not believe that any competent architect or engineer in London would ever attempt to get below the standard of those rules. It was not for the competent architect, but for the man who was incompetent and the man who wanted to evade the law that these rules were drawn.

Witness was then taken through the modified clauses in the bill, which are as follows:—

PART V.—AMENDMENT OF LONDON BUILDING ACTS.

28. In this part of this Act the expression "the principal Acts" means the London Building Acts 1894 to 1908.

29. Words and expressions used in this part of this Act shall unless the context otherwise requires bear the meanings assigned to them in the principal Acts and those Acts and this part of this Act may be cited together as "The London Building Acts 1894 to 1909."

For the purposes of this part of this Act the expression "pillar" shall unless otherwise stated mean a metal pillar and shall include all columns and stanchions or an assemblage of columns or stanchions properly riveted or bolted together and the expression "girder" shall mean a metal girder and every such metal pillar and girder shall be of iron or steel or other standardised structural metal.

30. Notwithstanding anything contained in the principal Acts requiring buildings to be enclosed with walls of the thicknesses and of the materials therein respectively described it shall be lawful to erect subject to the provisions of this section buildings wherein the loads and stresses are transmitted through each story to the foundations by a skeleton framework of metal but buildings so erected shall (subject to any exemptions contained in the principal Acts or any of them) be subject to and comply with all such provisions of the principal Acts or any of them and any by-laws made or in force thereunder as may not be inconsistent with or contrary to the provisions of this section. The following are the provisions which shall apply in respect of the construction of the skeleton framework and the foundations walls floors staircases and other parts of the structure of such buildings:—

(1) All rolled steel used in such construction shall comply with the British Standard Specification for Structural Steel for Bridges and General Building Construction.

(2) The skeleton framework of a building shall be capable of safety and independently sustaining the whole dead load and the superimposed load bearing upon such framework.

(3) The pillars in the external enclosure of a building shall be completely enclosed and protected from the action of fire by a casing of brickwork terra-cotta concrete stone tiles or other incombustible materials at least 4 in. thick the whole being properly bonded or secured together.

(4) All girders in the external enclosure of a building shall be similarly enclosed and encased with brickwork terra-cotta concrete stone tiles or other incombustible materials at least 4 in. thick properly tied and bonded or secured to the remaining work but the casing on the underside of such girders and to the edges of the flanges thereof and plates and angles connected therewith may be of any thickness not less than 2 in.

(5) All pillars and girders (other than pillars and girders in the external enclosure of a building) shall be protected from the action of fire by being encased to the satisfaction of the district surveyor and to a thickness of not less than 2 in. in brickwork terra-cotta concrete metal lathing and plaster or cement but the casing on the upper surface of the upper flange of all girders and joists and on the lower surface of all subsidiary joists may be of any thickness not less than 1 in. Wood firrings shall not be used in connexion with any such casing.

(6) The compression flange of every girder shall be secured against buckling whenever the length of the girder exceeds thirty times the width of the flange and the web of every girder shall be secured against buckling in every case in which the depth of the web exceeds sixty times the thickness thereof.

(7) The span of a girder shall not exceed twenty-four times the depth of the girder unless the calculated deflection of such girder is less than one four-hundredth part of the span.

(8) Wherever two or more girders or joists are arranged alongside one another and are intended to act together they shall be fixed together by means of iron separators and bolts or by riveted plates or in any other equally efficient manner which may be approved by the district surveyor. Separators shall not be more than 5 ft. apart and shall also be placed immediately over all supports and immediately under or at all concentrated loads.

(9) All girders for supporting enclosing walls shall be placed at the floor level of a story or at a distance of not more than 5 ft. above or below such floor level.

(10) Rivets shall be used in all cases where reasonably practicable but where bolts are used they shall extend through the full thickness of the nuts attached thereto and the nuts shall in all cases be so secured as to avoid risk of their becoming loose. The distance from the edge of a rivet hole or bolt hole to the edge of the plate bar or member shall not be less than the diameter of the rivet or bolt. Rivets shall be so placed that their centres shall not be closer together than three times the diameter of the rivets. The pitch of rivets shall be measured in a continuous straight line and such straight line pitch shall not exceed sixteen times the thickness of the thinnest plate bar or member through which they pass or be less than three times the diameter of the rivets.

(11) (*a*) No enclosing wall of the building shall be less than 8½ in. in thickness for the topmost 20 ft. of its height or less than 13 in. in thickness for the remainder of its height below such topmost 20 ft. Provided that a less thickness shall be allowed in any case in which under the London Building Act 1894 such less thickness is prescribed and that all party walls shall be of the thicknesses prescribed by the principal Acts.

(*b*) In any case in which an enclosing wall or portion of an enclosing wall is not supported or carried or secured by metal framework within the limits of height and length prescribed by the First Schedule to the London Building Act 1894 for the purpose of determining the thickness of walls such enclosing wall or portion of enclosing wall shall be of a thickness not less than that prescribed by such schedule.

(*c*) All brickwork and work in which terra-cotta concrete stone tiles or other similar materials are used shall be executed in Portland cement mortar and shall be bedded close up to the metal framework without any intervening cavity and all joints shall be made full and solid. The cement so used shall be in accordance with the British Standard Specification. Provided that in party walls (exclusive of any parts thereof immediately surrounding metal framework) lime mortar may be used in accordance with the provisions of the principal Acts and any by-laws made or in force thereunder.

(12) Nothing in this section shall prevent the use of stone terra-cotta or concrete as an external facing for buildings provided that such facing be at least 4 in. thick and be properly bonded or secured together and to the adjoining work.

(13) (*a*) No steel or wrought-iron pillar shall in any part be less than ¼ in. thick and the ends of

Digitized by Google

all such pillars shall be at right angles to the axis;

(b) All joints in such pillars shall be close butted with cover-plates properly riveted and unless unavoidable no joint shall be made between pillars except at or as near as may be reasonably practicable to the level of a girder properly secured to such pillars;

(c) The foot of every such pillar shall have a proper base-plate riveted thereto with sufficient gusset pieces to distribute properly the load on the foundations and the gusset pieces shall have sufficient rivets to transmit the whole of the load on to the base-plates;

(d) Where any such pillars are built up hollow the cavities shall either be filled up with concrete or be covered in at both ends by metal plates riveted thereto.

(14) (a) The width of every cast-iron pillar shall be not less than 5 in. and the metal of which such pillar is composed shall not be in any part of less thickness than ¾ in. or one-twelfth of the least width of such pillar (whichever shall be the greater);

(b) The cap and base of such pillar shall be in one piece with the pillar or be connected thereto with a properly turned and bored joint sufficiently fixed;

(c) The ends of all such pillars shall be at right angles to the axis;

(d) All joints between such pillars shall be at or as near as may be reasonably practicable to the level of a girder properly secured to such pillars and shall be fixed and made with not fewer than four bolts of not less diameter than the least thickness of metal in the pillar. If more than four bolts are used the diameter of the bolts may be reduced proportionately but no bolts shall be less than ¾ in. in diameter;

(e) The base of all such pillars shall have such area as may be necessary to distribute properly the load on the foundations.

(15) The base of every pillar shall be properly bedded so as to transmit uniformly the load upon such pillar to the foundations.

(16) The stress in any metal interposed between the ends of a superimposed pillar and a pillar beneath shall not exceed the stress on the superimposed pillar and the least width across such interposed metal shall not be less than the least width of the superimposed pillar.

(17) All floors and staircases (together with their enclosing walls) shall be constructed throughout of fire-resisting materials and be carried upon supports of fire-resisting materials.

(18) All structural metalwork comprised in the skeleton framework of a building shall be cleaned of all scale dust and loose rust and be thoroughly coated with one coat of boiled oil tar or paint before erection and after erection shall receive at least one additional coat. Where such metalwork is to be embedded or encased in brickwork terra-cotta stone tiles or other incombustible materials Portland cement wash of adequate consistency may be used in lieu of oil tar or paint.

(19) (a) The dead load of a building shall consist of the actual weight of walls floors roofs partitions and all other permanent construction comprised in such building;

(b) The superimposed load in respect of a building shall consist of all loads other than the dead load;

(c) For the purpose of calculating the loads on pillars (including brick pillars) piers walls framework girders joists and other constructions carrying loads in buildings the superimposed load on each floor and on the roof shall be estimated as equivalent to the following dead load:—

For a domestic building (not being a building intended to be used wholly or principally as offices or a counting-house) or a building intended to be used wholly or principally as an hotel hospital workhouse or lodging-house 70 lb. per square foot of floor area;

For a building intended to be used wholly or principally as offices or a counting-house or as a school college or place of instruction 100 lb. per square foot of floor area;

For a public building (not being a building intended to be used wholly or principally as an hotel hospital workhouse lodging-house school college or place of instruction) or a building intended to be used wholly or principally as a workshop or retail shop 112 lb. per square foot of floor area;

For buildings of the warehouse class not less than 224 lb. per square foot of floor area. In every building of the warehouse class a notice shall be exhibited in a conspicuous place on each story of such building stating the maximum superimposed load per square foot which may be carried on the floor of such story;

For a roof the plane of which inclines upwards at a greater angle than 20 deg. with the horizontal the superimposed load (which shall for this purpose be deemed to include wind pressure) shall be estimated at 28 lb. per square foot of sloping surface;

For all other roofs the superimposed load shall be estimated at 56 lb. per square foot measured on a horizontal plane.

Provided that if the superimposed load on the floor or roof of any building is to exceed that hereinbefore specified for such building such greater load shall be provided for pursuant to subsection (2) of this section.

(20) For the purpose of calculating the total load to be carried on foundations pillars (including brick pillars) piers and walls in buildings of more than two storys in height the superimposed loads for the roof and top story shall be calculated in full in accordance with the last preceding subsection of this section but for the lower storys a reduction of the superimposed loads shall be allowed as follows:—

For the story next below the top story a reduction of 5 per cent. of the full superimposed load calculated as aforesaid;

For the next succeeding lower story a reduction of 10 per cent. of the full superimposed load calculated as aforesaid and for each succeeding lower story a further reduction of 5 per cent. of the full superimposed load calculated as aforesaid. Provided always that the total reduction in respect of any story shall not exceed 50 per cent. of the full superimposed load.

No such reduction as aforesaid shall be allowed in the case of a building of the warehouse class.

(21) All buildings shall be so designed as to resist safely a wind pressure in any horizontal direction of not less than 30 lb. per square foot of the surface of such buildings exposed to wind pressure provided that in the case of buildings having a story above the ground story the wind pressure on such ground story may be disregarded.

(22) The working stresses on pillars of cast-iron or mild steel shall not exceed those specified in the two next following tables according to the several ratios therein specified or a proportionate load for intermediate or other ratios:—

CAST-IRON PILLARS.

Alternative Ratios.		Working Stresses in Tons per Square Inch of Net Section.		
Ratio of Length to least Width.	Ratio of Length to Least Radius of Gyration.	Hinged Ends.	One End Hinged One End Fixed.	Both Ends Fixed.
4	20	3·5	4·0	4·5
6	30	3·0	3·5	4·0
8	40	2·5	3·0	3·5
10	50	2·0	2·5	3·0
12	60	1·5	2·0	2·5
14	70	1·0	1·5	2·0
16	80	·5	1·0	1·5

MILD STEEL PILLARS.

Alternative Ratios.		Working Stresses in Tons per Square Inch of Section.		
Ratio of Length to Least Width.	Ratio of Length to Least Radius of Gyration.	Hinged Ends.	One End Hinged One End Fixed.	Both Ends Fixed.
4	20	5·5	5·5	5·5
8	40	4·5	4·5	4·5
12	60	3·5	3·5	4·0
16	80	2·5	3·0	3·5
20	100	2·0	2·5	3·0
24	120	1·5	2·0	2·5
28	140	1·0	1·5	2·0
32	160	0·5	1·0	1·5
36	180	0·0	0·5	1·0

(23) The working stresses on wrought-iron pillars shall not exceed two-thirds of the stresses hereinbefore specified with respect to mild steel pillars.

(24) The working stresses of iron and steel (except in the case of pillars as hereinbefore provided) shall not exceed the following:—

	Working Stresses in Tons per Square Inch.			
	Tension.	Compression.	Shearing.	Bearing.
Cast Iron ...	1·5	8	1·5	10
Wrought Iron	5	4	4	7
Mild Steel ..	7·5	7·5	5	10
Cast Steel.....	5	10	7·5	15

(25) The pressures of foundations on the natural ground shall not exceed the following:—

	Tons per Square Foot.
Natural bed of soft clay or wet or loose sand ...	1
Natural bed of ordinary clay or confined sand	2
Natural bed of compact gravel London blue clay or chalk.....	4

(26) The pressure on concrete foundations shall not exceed 12 tons per square foot.

(27) No disengaged brick pillar shall have a height without proper lateral supports of more than six times its least width but any such pillar with proper lateral supports may have a height between such supports not more than twelve times the least width of such pillar. Such width shall in no case be less than 13½ in.

(28) The pressure on any brickwork shall not exceed the following:—

	Tons per Square Foot.
Blue brick in cement mortar.....	12
Hard brick (including London stock) in cement mortar.....	8
Ordinary brick in cement mortar	5

(29) The Council may prescribe the materials and the proportions of the materials to be used in any concrete provided under the provisions of this section to which the provisions of the principal Acts or any of them or any by-laws made or in force thereunder do not apply.

(30) In the case of the erection of a new building of metal skeleton framework or the making of any addition or alteration or the carrying out of other work to which the provisions of this section apply the notice required to be served on the district surveyor under sect. 145 of the London Building Act 1894 shall be accompanied (a) in the case of a new building by a complete set of the drawings of such building showing the details of construction of all its parts together with a detailed copy of all the calculations of the loads and stresses to be provided for and particulars of the materials to be used and should such drawings calculations or particulars be in the opinion of the district surveyor not in sufficient detail the person depositing the same shall furnish the district surveyor with such further drawings calculations or particulars as he may require and (b) in the case of an alteration or addition or other work as aforesaid by such drawings calculations and particulars as the district surveyor may reasonably require.

(31) The district surveyor may for the purpose of due supervision of the construction of the building require to be furnished with properly authenticated proof as to the quality of metal to be used in such construction and may if not furnished with such proof or for any other reason at the expense of the owner of the building cause to be made any tests which he may consider necessary and at the like expense may cause any pillar (in all cases if reasonably practicable before the same is encased) to be drilled at any point to ascertain its thickness.

(32) In the case of all work carried out under the foregoing provisions of this section the person causing or directing such work to be executed shall satisfy the district surveyor that the provisions of this section have been duly observed.

(33) Any person dissatisfied with any requirement or decision of the district surveyor under this section may appeal to the Tribunal of Appeal.

(34) In order to facilitate the erection of buildings of metal skeleton framework it shall be lawful for the Council to modify or waive any of the requirements of this section upon and subject to such terms and conditions as they may think fit and any person failing to comply with any such term or condition shall be liable to a penalty to be recoverable in a summary manner not exceeding 20l. and to a daily penalty not exceeding the like amount.

31. (1) The Council may make regulations with respect to the construction of buildings wholly or partly of reinforced concrete and with respect to the use and composition of reinforced concrete in such construction and for the purpose of framing such regulations may carry out such investigations and make such tests as they may deem necessary and the provisions of this section and of any such regulations shall (subject to any exemptions contained in the principal Acts or any of them) have effect notwithstanding any provisions of the said Acts or any of them or any by-law in force thereunder which may be inconsistent therewith or contrary thereto.

(2) Subject to such regulations as aforesaid buildings may be constructed wholly or partly of reinforced concrete but except as provided by this section or by such regulations buildings so constructed shall (subject to any exemptions contained in the principal Acts or any of them) be subject to and comply with all such provisions of the said Acts or any of them and of any by-laws in force thereunder as may not be inconsistent with or contrary to the provisions of this section or any regulations made thereunder.

32. This part of this Act and any regulations made thereunder shall be deemed to form part of Part VI. of the London Building Act 1894 and any references in the principal Acts to the said Act of 1894 or any part thereof shall be construed accordingly.

33. (1) Where under the powers of this part of this Act or any regulations made thereunder any building is erected or any addition or alteration or other work is made or done to or on any building the fee to which the district surveyor shall be entitled with regard to such building addition alteration or other work in respect of any of the matters referred to in Part I. of the third schedule to the London Building Act 1894 under the respective headings "On new buildings" and "On additions alterations or other works" shall be a fee equal to two and one half times the amount of the fee specified in that portion of the said part of the said schedule which precedes the proviso therein contained and fees payable under the provisions of this section shall not be increased under the said proviso. Provided that fees payable under this section in respect of any addition alteration or other work in connexion with an existing building shall be calculated on the area of the addition (if any) and the portion of the building structurally affected by such addition alteration or other work and not on the area of the whole building.

(2) One-fifth of the amount of any fee payable under this section shall be paid to the district surveyor at the time when notice is served on him under sect. 145 of the London Building Act 1894.

CLAUSE 33A.

Nothing in this part of this Act or in any regulations made thereunder shall take away or prejudice any powers rights privileges or exemptions vested in or enjoyed by any person under the principal Acts or any of them.

In cross-examination by Mr. Freeman, witness said it was true that at the December Conference a resolution was carried: "That the scope of the Bill be limited to enclosing of party walls." The County Council was opposed to the three learned societies represented there on that matter. His Council had the Bill before them, and approved it after receiving deputations from the societies.

Do you seriously mean to represent to this Committee that your Committee could stand a cross-examination on clause 30? Do you suppose they have the least idea of what gyrations and such-like things mean?—I do not think I can pass an opinion with regard to the competency of my Committee to deal with anything. I am here to say that my

Digitized by Google

Committee have approved, and the Council approved of the Bill, and I wish my answer to your question to be registered in that way.

Proceeding, witness said one reason why he would not limit the Bill to external walls was because the control of the internal structure was necessary for the safety of the external. He suggested that the whole structure contemplated by the Act should be homogeneous, as the structure of 1894 was so intended. He did not say that a skeleton front-work wall could not be constructed to stand by itself, but as a part of a building it could have stability with regard to the building, because it had to take the parts of the building which bore upon it.

Do you suggest that there is the slightest difference in stability between a wall constructed on the skeleton principle and a wall constructed on the old-fashioned principle in brick?—Yes.

But surely you know you are at variance with the whole of the learned societies here to-day?—I am not at variance with any building code which deals with the matter.

How do you account for the fact that your opinion of the danger of limiting this Bill to the external walls is absolutely dissented from by all the learned bodies?—I do not know that they dissent from it. There are certain members of those bodies who dissent, no doubt, but I am sure that the way to secure the stability of a building is to enact these rules.

Continuing, witness said he supposed why the Councils of the learned societies differed from him in this matter was because they wanted to set aside the control of building altogether—that they wanted to free themselves from the restraint of the building law on this point. He suggested that there was no member of the Council of the Royal Institute of British Architects who would design and erect a building in London below the minimum fixed in these rules; and the rules were not designed to restrain them at all, but they were designed to restrain people who were not competent to design any skeleton steel construction in London. He did not think the plans which had to be made would lead to delay, but that, on the contrary, construction would be accelerated. Non-combustible material was not defined in the Bill, but the County Council could admit any material which was decided to be non-combustible.

Some discussion took place between the Chairman and counsel with regard to who was to decide what was non-combustible material, and Mr. Fitzgerald said that in the case of dispute the matter would have to go to the Tribunal of Appeal.

Further examined by Mr. Freeman, witness said he suggested that it was perfectly proper to ask a Committee of Parliament to decide this highly technical matter.

What is your objection to making the clause apply to external walls, and to have all the details settled and the regulations drafted by a skilled tribunal?—All the learned societies and others interested in building have urged upon us that it is necessary that whose who are engaged in building in London should know precisely what they have to do. That is the design of the Building Act of 1894, and it is the design of these rules.

Do you know that at the present time all the learned societies are unanimous that it should be by regulations settled by a skilled tribunal and not by Act of Parliament?—That is an entire reversal of their opinion in 1904 on precisely the same issue.

Second Day's Proceedings.

On Thursday, June 24, Mr. Riley was cross-examined at considerable length by Mr. H. Lloyd, K.C., and said that the provisions of the Act of 1894 were not intended to be impinged upon by these rules, which were to apply to buildings of a special class. Asked whether his contention was that a frame construction front wall must be inherently weaker than a brick wall, he said he would not deal with an isolated portion of a building, but with the building as a whole. He said that the rules should either be taken in their entirety or dismissed in their entirety. He denied that the subject was bristling with difficulties in regard to the technical intention of the rules, but it bristled with difficulties from the many people and interests who had to be considered before the rules could be framed and brought to anything like the agreement which was represented by the Bill as now proposed.

My proposal is that the County Council should draft regulations and submit them to the Local Government Board, who would hold an enquiry, at which various societies should be heard. Is that reasonable?—No, I do not think so. It is not in accordance with the preamble of the London Building Act.

Continuing, witness said ferro concrete differed from steel construction, for at present its precise behaviour under all conditions of loading was not known. If a material came into use as a non-combustible material and was approved by the County Council it would soon be known, and surely intending users would not make an appeal every time.

Re-examined by Mr. Fitzgerald, witness said that an appeal was allowed in every case from the district surveyor. It was only where the County Council was asked to waive or modify any particular condition in a particular case that no appeal was allowed from the decision of the Council. If they gave an appeal in such a case they would really be placing the administration of the Act in the hands of the Tribunal of Appeal. They did not propose to control the building owner as to whether he should have brick party walls or whether he should have the whole construction of steel framework; but a brick party wall would not prevent a building being a steel framework building. In the rule submitted by the Royal Institute of British Architects no distinction was made between external and internal walls. The District Surveyors' Association had made a representation to the Council that the interior construction should be subject to the same rules as the external, and so had the British Fire Prevention Committee.

Questioned by the Committee regarding the fees to be paid to the district surveyors, witness gave instances where the surveyors made large rebates on the fees they were legally entitled to. Under the Bill the fees of the surveyors would be restricted to what were actual alterations to a building.

Captain Hamilton, R.N., Chief Officer of the London Fire Brigade, said he had considered the regulations from the point of view of the extinction of fire, and strongly held that it was of the utmost importance that the control of the County Council by their rules and regulations should extend to the interior construction as well as to the external structure. Witness gave a number of instances where the interior of the buildings had collapsed, bringing down the floors and the outer wall with a run. He showed sketches of such occurrences both in London and New York, and explained the action of heat on the metal structure. It expanded the metal, which thrust out the outer walls.

Cross-examined by Mr. Courthorpe Munroe, witness said he agreed that the American buildings were almost all of skeleton construction, and were three times the height of the buildings in London.

Answering Mr. Macassay, witness said he did not make any specific inquiry whether the regulations applying to interiors of steel skeleton framework buildings in foreign cities were not also applied to ordinary buildings. In making the regulations the Chief Officer of the Fire Brigade ought to be consulted by the County Council.

Professor Henry Adams, M.Inst.C.E., and member of the Science Committee of the Concrete Institute, said he had been engaged for years in steel framework buildings, and plans were submitted to him by architects and others with regard to which he made calculations of the stresses and strains, and so on. If buildings were put up by competent architects there would not be much necessity for these rules, but as soon as these buildings were allowed every builder would want to start putting them up. He thought it absolutely necessary that the regulations should apply both to the internal and external structure. He would have liked to have seen specific regulations for reinforced concrete buildings, but he confessed he saw no possibility of making such general regulations at the present time. With a steel framework there was a general concensus of opinion as to the proper way of doing the work, but with reinforced concrete there was a dozen or more different patents working in a different way, and it would be difficult to frame rules covering the whole of these.

Cross-examined by Mr. Freeman, witness said he did not say that finality had been reached with steel framework construction, but it was in a very different position to reinforced concrete.

Third Day's Proceedings.

On Friday, June 25, Mr. Searles Wood, F.R.I.B.A., and Secretary of the Joint Committee which drew up the regulations for reinforced concrete, said that in his practice as an architect he had had experience of iron and steel framework construction. He had very carefully considered the proposed rules and approved of them. He considered as an architect that the existing rules must be relaxed in regard to the construction of steel framework buildings. The new rules would lead to an uniformity of practice and give a general idea to builders and others of what was required. He did not think the rules would be unduly burdensome. He thought that skeleton construction should only be allowed under conditions for ensuring the public safety. He did not think it would be practicable to apply the rules to the external walls only, for they must have calculations for the internal strains to know what the balance would be. It was the practice in New York for plans to be submitted showing the internal construction.

It has been represented that architects generally are agreed in opposing this proposal. Is that your opinion?—I do not think so. I know a good many architects who are in favour of the County Council proposal.

Proceeding, witness said that in 1904, when the matter was before the Royal Institute of British Architects, he assisted in drawing up rules, and it was the fact that the regulations now submitted were based on the proposals of the Institute, although they were not so onerous as those proposed by the Institute.

Cross-examined by Mr. Freeman, witness said he knew that both the Science and the Practice Committees of the Royal Institute of British Architects had reported against the proposals.

Questioned by Mr. H. Lloyd, witness said he had given consideration to the question as to whether the regulations regarding this class of buildings should not be made by some expert inspector appointed by the Local Government Board, but he thought their knowledge on the subject was sufficiently crystallised to deal with the matter as proposed. He approved of the power of modification being left in the hands of the County Council without appeal.

In re-examination, witnessed expressed the opinion that the proposed rules provided only for the minimum of safety.

Mr. O. Sachs, Chairman of the Concrete Institute and of the British Fire Prevention Committee, gave similar evidence in support of the Bill. He considered that the clause which gave the Council power to waive conditions was sufficient for dealing with any special case. He saw no hardship in the architect having to submit complete plans,

Digitized by Google

as the plans must be prepared before the work commenced. It was always advisable to have the full plans of a building before the tenders were invited, because the building owner naturally wanted to know the cost. Looking at the matter from the fire point of view, he considered it equally important to have control over the interior as well as the external structure. In Hamburg, Berlin, and other cities, he found the law regarding steel structures codified and applying to the internal structure, and in his opinion the codes had tended to facilitate instead of delaying buildings.

Cross-examined by Mr. Freeman, witness said his practice was largely confined to theatres, which were under special regulations.

This concluded the case for the promoters.

Mr. E. T. Hall, F.R.I.B.A., called by Mr. Freeman on behalf of the Royal Institute of British Architects, said he was appointed with Mr. Gibson to lay their views before the Committee. He agreed that the object of the Bill, which was to reduce the thickness of external walls, was a good one, but the principal objection to the Bill was that it went a great deal further than this by bringing the whole internal construction under the powers of the Council, which he thought was both unnecessary and prejudicial to building. At the present time the construction of every building was carried out under the supervision of the district surveyor, and if anything was done to render it unsafe he could certify it to be of a dangerous nature, and no further powers were required. He gave that opinion as one who had carried out two and a half million pounds' worth of work, and as representing the Council of the Institute.

You think the regulations in the Bill will be too rigid and too inelastic?—Yes. If there is any development or evolution in the method of building we are tied down by an Act of Parliament, which can only be changed by another Act of Parliament.

Continuing, witness said it would cause delay if all the plans had to be submitted before the building was commenced. In the last thirty or forty years many buildings had been erected where the internal construction was of steel and the external walls of stone. The practice had become common to construct the substantial portion with steel and then encase it with bricks. Witness proceeded to explain a model, half of which showed a building constructed under the present building law and half as it would be constructed under the proposed Bill, and pointed out that it only meant putting in one external framework wall to give the Council the control of the whole building. With respect to the model submitted by the County Council, it did not show anything erected in London, or likely to be erected, but it was a model of a detached metal framework building which might be erected in New York. They had no objection to a rule that the iron or steel framework in any external wall should be capable of safely and independently sustaining the whole dead load and the superimposed load bearing on such framework, or to the rule that all girders should be securely attached to the framework by rivets or bolts. The effect of having to deposit the elaborate series of drawings with the district surveyor would seriously retard work, and this would be a serious matter in the case of a building burnt out where there was a very heavy ground rent. It was a very general practice not to complete the plans for the upper part of a building till after they had commenced, and in the case of the Savoy Hotel, the architect told him he made no drawings of the upper stories until he got to the level. The Bill, however, said they must not only submit drawings, but details of every part, which might even mean the joinery details. It would mean a great deal of cost to the building owner, and throw a responsibility on the district surveyor which had always been borne by the owner and his professional advisers. At the conference of the technical bodies which had been alluded to the proposal that the Bill should be limited to external walls was carried by eleven votes to one. If a fire burnt out a building an external framework wall would stand just as well as a brick wall. The Council of the Institute represented the members, and he strongly resented the statement of Professor Adams that the resolution passed to limit the Bill to external walls did not represent the members of the Institute. He had carefully read sect. 30, and did not think the clauses regarding the interior construction were necessary at all; and with regard to the external wall regulations, they thought some outside tribunal should hear all parties and make regulations. His suggestion was that the County Council should make by-laws subject to the sanction of the Local Government Board, and that the Local Government Board should hold an enquiry before which all the technical bodies would be heard and the regulations settled. If in a few years new conditions arose another inquiry could be held, and the regulations further amended. He thought there ought to be an appeal against the County Council with regard to the clause which enabled them to modify the conditions. He had no personal distrust or anything of that sort of the County Council, but at present applications were considered *in camera*, and they merely received a letter stating whether the application was granted or not. Then they had to hunt about to try and discover the objection and make a fresh application. They generally got a fair result when everything was understood, but they could not get face to face. On the other hand, when they got to the Tribunal of Appeal, both parties were present and could at once agree. The schedule of the Royal Institute of British Architects in 1904 had been often referred to, but that was only prepared as a sort of draft for consideration before some technical tribunal. At the same time it was only fair to say that the views of the Council of the Institute had changed.

In cross-examination witness said whatever might be the code of regulations in New York it had to be remembered that the buildings in London were much smaller. It was true that the County Council might insert clauses in its General Powers Bill each year to deal with developments, but the technical bodies could not keep coming to Parliament to object. The Council of the Institute had learned by experience, as most people did.

Re-examined by Mr. Freeman, witness said the Institute had modified the views it held in 1904, and he thought that was a reason why such regulations as proposed should not be stereotyped in an Act of Parliament. He was perfectly content that in the construction of these new buildings there should be proper connexion between the exterior and interior work.

By the Chairman: The details in the Act of 1894 were agreed to by the Royal Institute of British Architects, who were consulted. He had not heard any complaint from Liverpool architects with regard to the Liverpool Act.

The Chairman: If we gave the County Council power to make by-laws to be submitted for the sanction of the Local Government Board, would that satisfy your Council?—Yes, so long as we had power to be heard before the Local Government Board before the by-laws were sanctioned.

Is not your suggestion that the building authority for London is the County Council *plus* the Institute of British Architects in consultation?—No; every by-law made by the County Council to-day has to be submitted to the Royal Institute of British Architects in order that they may be heard on them, and therefore I am not asking for anything more in principle than exists to-day.

Questioned by Mr. Brunner (a member of the Committee), witness said that in Glasgow they had what was known as the Dean of Guild Court, which was composed of technical men. They sat regularly to consider plans, and the Corporation had power to go before them to object. They would like a Technical Tribunal, appointed by the Local Government Board or anybody else, to sit and hear the County Council and technical bodies on this. He hoped it would not be thought that the Royal Institute of British Architects were opposing good building.

Mr. Wm. Dunn, F.R.I.B.A., said he had a large experience of steel framework buildings, and favoured a reduction in the thickness of the external walls. He saw no reason, however, why this should be accompanied by increased powers for the County Council with regard to the interior structure. The outside walls of a steel frame building could be made quite stable quite independent of the interior construction. Any extension of the powers of the authorities with regard to the interiors of buildings would be a burden on the ratepayers; and there was, as a matter of fact, sufficient control over buildings at present. It would also lead to delay. Looking at clause 30, it seemed to him that if the rules were passed the Council would have to apply them to every building in London except private residences. Dealing with the various subsections of the clause, witness pointed out difficulties which would arise, and said that so far as he could see the retention of section I. of the clause would mean the incorporation in an Act of the British standard specifications which would run into eight pages. He felt that the rules laid down would result in endless trouble, delay, and expense.

The Committee adjourned.

Fourth Day's Proceedings.

On Monday further consideration was given to the Bill, and Mr. J. Gibson, F.R.I.B.A., was called, and in reply to Mr. Freeman said it was very desirable that the rules regarding the thickness of walls in the case of steel framework buildings should be relaxed, but this Bill put unnecessary restrictions and obligations in the way of that concession. It would, in fact, take from building owners rights they now possessed, and which had never been abused in the past. In exchange for getting the privilege of erecting buildings of steel construction of less thickness so far as the external walls were concerned, the building owner was to be deprived of the right of constructing the whole of the interior steelwork to suit his own purposes. At present the whole of the construction was subject to the supervision of the district surveyors, who had to be satisfied under sect. 145 of the Building Act of 1894. Two clear days before a building was begun the building owner was required to serve notice on the District Surveyor in respect of the structure he was going to build; the number of stories, the area and the height, the intended use of the building, and other particulars; and then the district surveyor drew attention to any points upon which he desired more information. As the result of this procedure they could begin work before they received the actual sanction to the building. They began getting in the foundations, and the method worked very satisfactory in practice. Under clause 30 of the Bill the attempt was made to define buildings to which the new provisions would apply, but the terms were very vague and unsatisfactory. The provision with regard to loads and stresses being transmitted were vague, and whether it meant all or only some of the loads was not certain. If it meant all the loads, then there was no building which complied with the Act. Then they did not know whether if half the stresses were taken on the party walls that the building would come within the scope of the Act. Mr. Riley said he did not wish to interfere with buildings erected under the existing Act, but the clause did not show that. Witness proceeded to point out that Caxton House was built with steel stanchions, and these were surrounded with brickwork for the sake

Digitized by Google

of complying with the existing Act, but if the brickwork was taken away the steel stanchions would hold the structure. If his interpretation of the Bill was correct, then that building would come under it, with the result that all the interior work would also be under the control of the County Council, and this was quite unnecessary. He agreed that provision should be made for the proper attachment of the exterior and interior work, but he deprecated the stereotyping of regulations in an Act of Parliament. Professional men knew, for instance, perfectly the qualities of mild steel, and what they desired was to have sufficient elasticity in any rules to be able to take advantage of new developments and discoveries. Professional men would not look forward with any satisfaction to the prospect of having amendments of the Act brought forward in every General Powers Bill promoted by the County Council. With regard to the clause in the Liverpool Act which had been referred to as a precedent, there was a fundamental difference in the circumstances, because in Liverpool they had no district surveyors. In Liverpool application had to be made to the Corporation, whose officers dealt with the matter. Further than that, although the Liverpool Act provided for the deposit of elaborate plans, yet this was not carried out in actual practice.

Mr. Fitzgerald pointed out that if any owner desired to construct under the existing Act the Bill would not interfere with him.

Witness said he did not see that provided in the Bill. He considered the detailed information required before the building was commenced quite unnecessary, for their plans were often modified after they had got to the first story.

Mr. J. Carmichael, Past-President of the Institute of Builders and of the London Master Builders' Association, said he had erected some of the largest buildings in London, and employed on an average about 1,000 men. The building trade would welcome facilities for the erection of steel and iron buildings, for it meant unnecessary expense to have the thick walls at present enforced. He did not, however, think that skeleton framework would be largely used until the scope of the Bill was confined to external walls only. Witness proceeded to give an illustration of the effect of the Bill in regard to a building with 100 ft. frontage and 200 ft. depth in a main London thoroughfare, costing 100,000*l.* to build, and on which there was 5,000*l.* a year ground rent. On the front wall he estimated a saving of 185*l.* by the reduced brickwork, but against that they would have to use more steelwork, so that he took the net saving at 85*l.* With the back and area walls he took the total saving at 270*l.* Deducting the increased District Surveyor's fees, he gave the saving as 150*l.* With such a building to be used as offices, however, they would by the reduced thickness of the walls get additional floor space worth about 75*l.* a year. On the other hand, there might be delay, caused by having to deposit all the required plans, of twelve or eight weeks, which would mean a loss of ground rent of 12,000*l.* or 8,000*l.* He thought a sensible man would, therefore, prefer to go on under the old Act unless the new Bill was confined to external walls. Both the Institute of Builders and the London Master Builders' Association had unanimously passed resolutions in favour of the Bill only applying to external walls. In his experience of twenty years he could not think of one case where they could have given all the details required by the Bill before the work was commenced.

Mr. Freeman, K.C., then addressed the Committee on behalf of the Royal Institute of British Architects, and emphasised the point which had been put forward by his witnesses.

Mr. H. Lloyd, K.C., next addressed the Committee for the Surveyors' Institution, and was proceeding to deal with the technical difficulties, when

The Chairman said the Committee did not desire at that stage to hear counsel on technical points.

Mr. Lloyd proceeded to address the Committee on the general question, and urged that just as the County Council desired to deal with ferro-concrete construction so they would desire them to deal with steel framework buildings.

Mr. R. Stenning, F.R.I.B.A., President of the Surveyors' Institution and a District Surveyor of twelve years' standing, said he agreed generally with the evidence given by Mr. E. T. Hall. He considered that the words in clause 30 regarding the deposit of a complete set of plans meant a very different thing to the present practice of calling for a general plan. The District Surveyor now had control of the whole building, and if he considered that the building being erected was not safe, he could call on the builder to make alterations. If the builder did not do as required he could be taken before a magistrate. As a matter of fact, he had never had to take a man before a magistrate. He could not understand what sect. 33 meant at all. He understood Mr. Riley to say that the regulations were for small and incapable men, but these steel framework buildings were expensive, and would be the last thing a jerry builder would touch.

Cross-examined by Mr. Talbot, witness said it would be very difficult to lay down any stereotyped rules to deal with these.

Is there anything in this clause 30 which a competent man having to erect a building of this sort could not observe?—I am a competent man, but I would be very sorry to work under these regulations.

Will you tell me a particular point which you or any other man of competence could not fulfil?—Some things I would like and some not.

Will you mention a particular point?—No; I object to the whole thing in principle.

Mr. Talbot said the point which struck them was that the technical bodies did not give the County Council any assistance.

Witness said they were always anxious to assist the County Council, and had given up time to the matter, but when dealing with the County Council they never seemed to "get any forrarder."

Mr. E. B. Ellington, who was called on behalf of the Institution of Civil Engineers and the Institution of Mechanical Engineers, said that if the provisions in the Bill were carried out he thought many people would prefer to build in brickwork in order to avoid the rules, which in many cases would be extremely onerous to building owners. The rules dealt with foundations, but steel framework buildings could be put on the same foundations as brick buildings. It was the view of the two societies that the Tribunal of Appeal should be strengthened by an engineer being added.

Mr. Fitzgerald: Do you suggest that the internal work of these steel skeleton buildings does not require control as much as the external?—I certainly do.

Further cross-examined, witness said that what he meant was that at present there was sufficient control over the internal construction, and if the Councils of the two societies he represented had previously said that the interior construction should be under more control, then they had changed their minds.

At the desire of the Committee the Assistant Solicitor of the London County Council was called, and explained the working of the Tribunal of Appeal, and in answer to the Chairman said he thought the procedure generally was more economical to the parties than if they went before a magistrate.

Fifth Day's Proceedings.

On Tuesday Mr. Fitzgerald, K.C., replied on behalf of the London County Council, and pointed out that there was nothing to prevent any person who wished continuing to build under the existing Act. If, however, the building owner thought the relaxation of the building laws afforded by these rules were more advantageous to him, then he could follow the rules set out in the Bill. It was the business of the London County Council to see that in any alteration of the building law public safety was guarded, and that consistently with public safety no undue burden should be placed on the owner of property. It was a significant fact that on the present occasion not one single owner of property opposed the Bill. The only opposition was that of the architects', surveyors', and engineers' societies. They were bodies of the highest respectability and were useful institutions in their way, but they represented no one but themselves. Their real objection was this—they objected as strongly as possible to being controlled by public officials and public bodies, and they wished to do all they could to minimise that control and leave to the members of these associations a free hand to construct buildings as they thought proper. Accordingly, the main question they had raised was whether such public control should be confined to the external walls of these steel skeleton buildings, or whether it should extend to the internal construction as well. He contended that it was absurd to say that the stability of a building depended only on the external pillars, and to say that public control should be limited to the exterior construction. In America and on the Continent they found similar rules in force. Whilst he submitted that on the point of delay owing to the deposit of plans, the cases put before the Committee were special cases, yet he said it was better to have delay than that public safety should not be safeguarded. He believed, however, that there would be no delay on the part of architects if the regulations were passed, because the client would not put up with it. There had really been no criticism as to the technical rules in the Bill, and it had been admitted that these rules to a large extent represented the precautions which any skilled architect or skilled surveyor who was erecting such a building would take. He quite accepted the statement of Mr. Hall that architects were gentlemen capable of dealing with these things, but in every profession there were gentlemen who were not skilled, or were not possessed of a full sense of responsibility, and it was for such gentlemen and for builders who were not bound to employ architects that these rules were necessary.

The Committee conferred in private for a considerable time, and on the parties being readmitted, the Chairman made the following announcement:—"The Committee find the preamble of the Bill relating to Part V. proved, but they will require an amendment to be made to subclause 33 of clause 30, substituting for the Tribunal of Appeal an appeal to a Metropolitan Police Magistrate; and in subclause 34 they require the insertion of words providing for an appeal to the Tribunal of Appeal from the decision of the County Council. They further require alterations to be made in clause 33 so as to more clearly define the fees to be paid for alterations."

The Committee then adjourned for the further consideration of clauses.

WALLASEY SECONDARY SCHOOL.—Under the heading of Proposed New Buildings in the Provinces, we stated in our last issue that the architect of the Wallasey Secondary School is Mr. H. Beswick, which was a mistake. The architects are Messrs. Willink & Thicknesse, Castle-street, Liverpool.

PROPOSED SHOPS, ETC., DEPTFORD.—Application has been made to the Deptford Borough Council by Mr. G. S. Wain, surveyor, on behalf of his principal, for sanction to plans providing for the erection of shops, with offices above, on the site at the junction of Brookmill-road and Deptford Broadway of a portion of Norfolk's Brewery. It is proposed to deal at present only with the corner of the two thoroughfares in question, adapting the existing premises there to the requirements of the plans, and leaving the actual brewery buildings for development later.

Digitized by Google

THE PENROSE ALMSHOUSES, BARNSTAPLE.

VERY few of our old English towns can show so many old almshouses existing under ancient foundations as Barnstaple. The greater number have been rebuilt or restored many times since their first erection; but those founded in 1627 by John Penrose, Mayor of Barnstaple, have escaped any serious alteration. They are situated in Litchdon-street, near the Square, and are quadrangular in form, with a sort of wooden-roofed cloister supported on granite columns. The entrance is in the middle, the cloister terminating on one side by the Council Chamber and on the other by the chapel, within which is a fine portrait of the founder, by Jansen. An almsbox that has done duty for generations is chained to one of the stumpy granite columns. The charity consists of twenty dwellings, with accommodation for two inmates in each.

SIDNEY HEATH.

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

THE annual meeting of the Association of Municipal and County Engineers was held at the Town Hall, St. Pancras, on Thursday and Friday, June 24 and 25. Mr. W. Nisbet Blair (St. Pancras), President, was in the chair, and there were present Messrs. J. Anstee (Guildford), S. E. Burgess (Middlesbrough), A. Beaumont (York), G. Bell (Swansea), J. Blackburn (Dewsbury), H. Percy Boulnois (London), B. Ball (Nelson), E. W. Booth (Croydon), B. J. Belsher (Stepney), J. H. Blizard (Southampton), J. S. Brodie (Blackpool), J. Patten Barber (Islington), J. Birch (East Ham), T. Cole (London, Secretary), R. H. Clucas (Kingston-on-Thames), W. T. Creswell (London), A. P. I. Cotterell (Bristol), T. F. R. Carter (Hounslow), G. F. Carter (Croydon), S. H. Chambers (Hampton), J. A. Crowther (Southampton), F. C. Cook (Nuneaton), C. H. Cooper (Wimbledon), N. F. Dennis (West Hartlepool), A. Dryland (Surrey), H. M. de Colville (London), T. H. Dunch (London), W. R. Davidge (Lewisham), C. F. Dawson (Barking), A. E. Darby (Bethnel Green), A. T. Davis (Salop), J. Rush Dixon (Woolwich), J. T. Eayrs (Birmingham), E. H. Essex (Leyton), A. Fidler (Northampton), J. R. Findlay (Leith), E. E. Finch (Bethnal Green), H. H. Foster (Wandsworth), W. Fairley (Richmond, Surrey), H. A. Giles (London, Assistant Secretary), A. Gladwell (Eton), T. J. Guilbert (Guernsey), F. T. Grant (Gravesend), T. W. Gordon (Nottingham), A. D. Greatorex (West Bromwich), C. F. Gettings (Teignmouth), W. Harpur (Cardiff), W. Howard-Smith (London), T. W. A. Hayward (Battersea), Chas. Jones (Ealing, Hon. Secretary), C. Jenkins (Finchley), P. G. Killick (Finsbury), J. Lobley (Hanley), J. Lemon (Southampton), G. W. Lacey (Oswestry), R. A. MacBrair (Lincoln), E. B. Martin (Rotherham), E. G. Mawbey (Leicester), B. B. Newton (Paddington), F. R. Phipps (Basingstoke), A. J. Price (Lytham), W. B. Purser (Kesteven), W. H. Prescott (Tottenham), J. T. Pickering (Cheltenham), W. Weaver (London), etc.

The Mayor (Councillor E. T. Heron), at the outset, welcomed the members of the Association on what he believed was their first visit to the ancient borough of St. Pancras. They were glad to find that Mr. Blair had been honoured by being elected their President for the year. They had a great respect for Mr. Blair as one of the most capable and painstaking officers that St. Pancras had ever had, and he felt that in honouring him they were honouring the borough.

Mr. A. D. Greatorex (West Bromwich), Vice-President, who presided in the absence of Mr. Hooley, who was away in America on a professional engagement, thanked the Mayor for the warm welcome he had given to the members of the Association. They were delighted to come to St. Pancras to honour Mr. Blair.

Report of Council.

Mr. T. Cole (Secretary) presented the report of the Council, which stated that the total membership was 1,201, consisting of eight honorary members, 818 ordinary members, seventy-eight associate members, 127 associates, and 170 graduates. The finances were now in a perfectly satisfactory position and commensurate with the important work of the Association. During the year three examinations had been held at which eighty candidates presented themselves, and forty-nine satisfied the examiners. It was proposed to hold Colonial examinations in South Africa in October and in India in April, 1910. The report referred to the proposed change of the title of the Association. The Council regretted that the influential Committee appointed to lay the views of the Association before the President of the Local Government Board were unable to secure a personal interview. The views of the Committee were, however, presented in full, in writing, and the Council are in hopes that good effects may result therefrom: Representatives as to the desirability of the branding of defective pipes have been received by the Council, and they consider that it would be a valuable safeguard against inferior pipes being used without the knowledge of engineers under whom drainage and sewerage works are carried out if such pipes were branded by the manufacturers before being sent out from their works. The Council therefore think it most desirable that all pipes should be branded so as to indicate their quality.

The Chairman moved the adoption of the

The Penrose Almshouses, Barnstaple.

Digitized by Google

report, which was seconded by Mr. P. H. Palmer (Hastings).

Mr. Norman Scorgie (Hackney) moved that the report be referred back. He said it did not merit the satisfaction which the Council expressed as to the progress of the Association.

Mr. Prescott (Tottenham) seconded the amendment, and said the Council was in a large measure responsible for the decrease of membership.

The Title of the Association.

The discussion on the report was then adjourned for the holding of a special meeting to consider the change of title of the Association. Mr. A. D. Greatorex presided.

Mr. J. Patten Barber then moved that the special resolution passed on June 25, 1908, and confirmed on July 18, 1908, be and the same are hereby rescinded. He said every attempt was made to persuade the Board of Trade that the difficulties which they anticipated with the proposed change of name would not arise, but were unsuccessful. The Board of Trade then suggested that if the title was changed to the Institution of County and Municipal Engineers they would be prepared to sanction that alteration, and the President agreed to accept that alteration. Accordingly, a meeting was held at Malvern at which the alterations were agreed to, and this special meeting was held to confirm that resolution.

Mr. Brodie seconded, and it was carried.

Mr. J. P. Barber moved that the name of the Association be changed to the Institution of County and Municipal Engineers.

Mr. W. Harpur, who seconded, thought the members of the Association should know that at the interviews with the Board of Trade the Institution of Civil Engineers and the new Institution of Municipal Engineers were present and represented before the Board of Trade. He thought he should say that the new Institution opposed their change of title to the very utmost.

The resolution was carried with three dissentients.

Mr. Barber then moved the alteration of the name from "Association" to "Institution" in various articles.

Mr. A. T. Davis seconded, and it was carried.

Mr. J. P. Barber moved that the following words be added to article 25:—"The Council shall, on the nomination of the Scotch and Irish members respectively, further co-opt as ordinary members of Council one member to represent Scotland and one member to represent Ireland, should no such member or members be elected by the annual ballot for the election of the Council.

Mr. MacBrair seconded the resolution, which was carried.

Mr. J. P. Barber moved in article 26, after "ordinary members of" Council, to add "co-opted members of Council."

Mr. Brodie seconded, and it was carried.

This concluded the business of the special meeting, and the general meeting was resumed with the further discussion of the Council's report.

Mr. Picton (Eccles) compared the new Institution to the syrens who tried to lure men to their destruction, and urged the members to remain loyal and stand firm by their Institution.

Mr. J. Lobley pointed out that their membership was limited to the surveyors and engineers of local authorities, and of late years their chief assisants; and they could not go on increasing in geometrical progression like the Institution of Civil Engineers, which could draw from a practically unlimited number of men.

Mr. Farnham (Sidcup), Mr. J. Lemon, Mr. Chambers Smith, Mr. T. W. A. Hayward, Mr. J. P. Barber, and others took part in the discussion. The amendment was defeated by an overwhelming majority, and the report adopted.

Mr. Barber moved that by-law 22 be rescinded, and the following by-law be substituted in lieu thereof:—"By-law 22.—The following abbreviations of the name of the Institution may be used to denote connexion therewith: Members, M.Inst.C.M.E.; associate members, A.M.Inst.C.M.E.; associates, Asso.Inst.C.M.E.; graduates, Grad.Inst.C.M.E."

Mr. T. W. A. Hayward seconded, and it was formally carried.

Mr. R. Brown (Southall) moved—"That it be a reference to the Council of the Association to take into consideration the advisability of altering the articles and by-laws with a view to the various classes of membership being honorary members, members, associate members, and students, and matters in connexion therewith." He moved it because of the idea that they had too many classes of members in the Association.

Mr. A. J. Price (Lytham), who seconded, said they wanted to get hold of the students in the future interests of the Institution. It seemed to him the term graduate was not a term any young fellow was proud of.

The resolution was carried.

Mr. R. Brown moved that the Council be requested after consideration to prepare a report on the matter and present same to all the various classes of the existing members at the earliest possible moment.

Mr. A. J. Price (Lytham) seconded the resolution.

Presentation of Premiums.

The Vice-President then presented premiums for the best papers read at the meetings during the year to Mr. J. S. Brodie (Blackpool), Mr. R. J. Angel (Bermondsey), and Mr. J. Andrews (Dunoon).

The Presidential Address.

Mr. W. Nisbet Blair, M.Inst.C.E., having been installed as President, delivered his address. He claimed that municipal engineers worked with wholehearted enthusiasm for the benefit of the public in every quarter of the globe, and strove with every effort to qualify themselves to fill the several spheres they occupied to the greatest advantage of that particular section of the public in whom they were immediately concerned.

Working with their colleagues, the Medical Officers of Health and other officers of the sanitary staff, there was no doubt that in the course of years the conditions of life not only in our densely-populated areas, but in the rural districts also, had been immensely improved. The mortality tables proved this, and it was largely due to improved sanitary conditions, which expression included such a multiplicity of items—improved drainage; purification of sewage; reduction of rivers' pollution; the better removal of refuse, both house, trade, and street; its harmless disposal; the provision of copious and pure supplies of water; the demolition of slum property and the substitution of healthy dwellings; the administration of beneficial building regulations to secure more substantial and honest work by checking the propensities of the jerry builder, who in times gone by was the bane of all town development. Sanitation had indeed been found fault with as being too perfect, for it was striving to keep alive the lame, the halt, and the blind, while Nature's effort had been to get rid of them. The deterioration of the race had been attributed to the perfection of sanitation, because others than the fittest were carefully protected and preserved.

In all this they were responsible under the orders of their authorities for the judicious expenditure of large sums of public money, and so they were sometimes referred to as the spending officers of public bodies in tones of reprehension, and instead of appreciation they met with captious criticism, if not active hostility; instead of receiving support and encouragement they were sometimes thwarted and harassed in the faithful exercise of responsible duties. Fortunately, such conditions were now the exception, but from time to time cases came to the knowledge of the Council. The public, though they might not always recognise it, had a real and valuable protection in their public officers when qualified men were appointed, and there were plenty such to be secured, for that Association had for many years now endeavoured to educate young men entering the profession and to distinguish those who had proved their competency by examination. Many of their local authorities availed themselves of this security by requiring candidates for appointments to belong to the Association in one of its several classes; unfortunately, all were not of the same wise conclusion; and, still more unfortunately, there was no such obligation upon them in regard to their surveyor as applied to the Medical Officer of Health.

It had long been their desire to secure such recognition by the Local Government Board as the State Department exercising supervision and control over the work of the local governing bodies, as to induce the Board to require evidence of qualification in regard to all appointments made to chief office as engineer or surveyor. Such a step would soon prove its value as a security to the public against the wasteful outlay of public money, due to the absence of knowledge and experience, where men of any other occupation were elected to surveyorships for any other reason than the right one. Fortunately, these deplorable conditions were usually found to occur in places of small importance, and it was their occurrence which emphasised the necessity for some control by a higher and more enlightened body, not only to ensure competency in the officer, but to give him some protection against vindictive treatment and petty tyranny.

The position of the engineer and surveyor as a public officer is by no means in a satisfactory condition, for not only is there no security of tenure, but there is no general provision applying to him, or any other municipal officer, by which he is entitled to superannuation, as in the Civil Service or for the Poor Law officer. So far as London is concerned the Superannuation Act, 1866, such as it was, applied, and without any contribution by the officer, though in the last few years some half-dozen metropolitan boroughs had obtained private Acts, and throughout the country about ten or twelve private Acts were in force authorising superannuation schemes to which both the officer and the local authority contribute in approximately equal shares.

Mr. J. Patten Barber proposed a vote of thanks to the President for his address, which was seconded by Mr. A. Gladwell (Eton Rural), and carried.

Drainage Interceptor Traps and Ventilation.

Mr. S. E. Burgess, M.Inst.C.E. (Borough Engineer and Surveyor, Middlesbrough) read a paper on "Drainage Interceptor Traps and Ventilation." He said he was of opinion that the "interceptor trap" was an essential feature for private drainage, and that where practicable all private drainage systems should be cut off from the sewer at a point as near the sewer as possible—just within the boundary or curtilage of any premises—by a properly selected and suitable interceptor trap, and that by sectionising and cutting off by effectively trapping the drainage of private premises from the public sewers much good and great benefit was derived therefrom.

An important matter was that the selection of a proper type of interceptor trap should be carefully made, and only those traps that were self-cleansing by reason of cascade and scouring action should be used, and wherever practicable the interceptor trap should have the further advantage of a properly constructed inspection-chamber with, say, two courses of glazed brick benching to the sides of the channel invert, and that only where space was confined should an interceptor trap be laid without such inspection-chamber.

He believed in, and wherever possible carried out, the principle of "untrapped

Digitized by Google

openings" for the ventilation of both sewers and drains in the form of ventilator shafts carried up to a convenient height and to some out-of-the-way place.

He was opposed to the so-called "air inlets" on drainage systems that were built only a foot or two above the surface of the surrounding ground.

In many instances air inlets to the interceptor inspection-chamber were inserted in the forecourts or palisading walls at the fronts and sides of houses. These inlets were more often "outlets" than "inlets."

He was opposed to the ventilation of public sewers through the drainage of private property, and did not consider it satisfactory that soil-pipe ventilators on the drainage system of private property should be used for the purpose of ventilating the sewers of a local authority.

In most cases the soil-pipe ventilators on house drainage were placed in such positions that the outlets therefrom were not far away from bedroom and other windows, particularly dormer windows and other roof openings and air gratings.

He was aware that the by-laws provide that soil-pipe and other ventilators on a drainage system were to be carried 3 ft. above any window within a distance of 20 ft. therefrom. This was under the present condition that the drainage of premises was to be provided with an interceptor to trap off and isolate the private drainage system from the sewerage system of the district.

If the interceptor trap were done away with and the water-closet soil-pipe and other ventilator shafts were made not only for the ventilation of the private drainage, but also for ventilation of the main and other sewers, it would not, in his opinion, be satisfactory and safe to terminate such pipes only 3 ft. above any window within 20 ft. of same.

He was a believer in the sectionising of drainage and sewerage systems, and he would sectionise the main sewers of a town wherever the district was very hilly; the more openings on sewers and drains the better, provided such openings were in out-of-the-way places and not a nuisance.

Drainage by-laws provide for two or more "untrapped openings" on a system of drainage, this meaning a so-called inlet, together with an upcast ventilator, one being placed at each end farthest from the other on the system.

His practice was to install (consistent, of course, with the possibilities of each construction) as many untrapped openings or ventilators as possible, and if instead of two he could get three or four, or even five, on a big system of drainage, he recommended its adoption. He did not recommend "air inlets."

The same remarks applied to the ventilation of public sewers. All sewers, if possible, should be self-cleansing and no stagnation by deposit of sewage matter permitted, and as many openings for ventilation as practicable and wherever necessary.

These openings should not be of the surface of the roadways. Open gratings on sewer manholes at the road surface should be entirely abolished except in places where an open manhole-cover could not possibly occasion any annoyance to anybody, *i.e.*, where main sewers cross fields and other places with no possibility that an open grating would be detrimental and cause nuisance.

This necessitated, in his opinion, the construction of upcast shafts carried up at convenient places, particularly gable ends of houses, the termination of which should be well out of reach of chimney-stacks. Specially constructed isolated column ventilators should also be carried out by the local authority. It was apparent that in a well-laid system of drainage no accumulation of gas could take place, especially if through ventilation of the private drainage system was carried out by the two (and in cases where possible by more than two) untrapped openings.

It was contended that the precipitated deposit of house drainage in the trap of the main interceptor becomes to some extent offensive and emits smell.

He did not agree with this; the drainage from a house was constantly changed, and the liquid matter in the trap was also frequently changed. For this reason, in his opinion, not much smell could be emitted, therefore, over and above drain air, this was relieved by the (at least two) untrapped openings required under the by-laws.

It would be far worse for sewer gas to be continually passing through the drainage system and out of the private ventilators, than the ordinary relief of the air from the drains themselves.

With regard to interceptors, there were many on the market, and careful selection should be made. The use of a bad form of trap was the cause of general condemnation of interceptor traps, which were said to cause blockage of the drainage system and the consequent inconvenience and annoyance.

In his experience he had not had occasion to be called to many blockages of traps. Naturally there would be blockages, as there were in all traps, but with care and careful flushing of the drainage system no inconvenience through this cause should be experienced.

A 6-in. drain laid with a gradient of not less than 1 in 60, in his opinion, should be satisfactory to cleanse a proper interceptor trap, provided such interceptor trap had a cascade action of, say, 3 in.

For the drainage of terrace houses with entrance to the back by a passage-way in the centre of the terrace, the sewer should be carried up the passage-way to the main interceptor chamber behind. Each house could then be separately drained into the main interceptor chamber with the soil-pipe and up or down cast ventilator attached thereto.

No so-called "air inlets" were required, but the four ventilators of the soil-pipes on the drains falling to the chamber are the untrapped openings in accordance with the by-laws, and could in no way become a nuisance or cause annoyance by the outrush of foul air from an "air inlet," placed in close proximity to the interceptor chamber. It did not matter which of the four openings was inlet and which outlet.

Mr. E. H. Essex (Leyton) said if the author's plan of draining terrace houses was submitted to his Council he would be asked to take it back and remodel the trap. He knew that they worked advantageously in Leyton, as they had special powers and combined drainage in their own private Act. He did not know whether in the Public Health Bill now before Parliament any attempt had been made to give these special powers to the country generally.

Mr. P. Dodd (Wandsworth) said that from an engineer's point of view, and setting aside the health aspect of the question, an interceptor trap on the main house drainage was no doubt a hindrance to the free flow of sewage to the sewer. On the other hand, from a medical point of view it had been proved by experiments made by Major Horrocks in Gibraltar, by Dr. Andrews in London (the latter being one of the officers of the Local Government Board), that an interceptor trap prevented the passage of bacteria (present in the air of a sewer) into the house drainage system. In view of this evidence, and if it was a fact that these traps were a seal against bacteria or germs escaping from the sewer into the house drain, it seemed to him that the interceptor trap was an absolute necessity and ought to be retained. Further, to prevent disease germs travelling from one house drain to another, there should be a separate interceptor trap on the main drain of each house, and not one to four houses, as shown on plate 1 attached to the paper. Taking it, therefore, for granted that the interceptor traps were essential, there was no difficulty whatever in suitable self-cleansing traps with a cascade scouring action as suggested by the author, but he did not agree with him in having open channels in the intercepting chamber. He thought it would be better to have the channel covered with a properly sealed removable cover. This would prevent the accumulation of sewage in the manhole should the trap through improper use become blocked, and would dispense with the so-called "air inlets" and allow of an open grating being provided instead of an air-tight cover over the intercepting chamber. This question of sewer and drain ventilation was one of the most important they had to deal with, and the sooner it was tackled on broad and scientific grounds the better for the community.

Mr. J. A. Crowther (Southampton) said he had come to the conclusion that they could not have too much ventilation of the sewers: They all knew that the intercepting trap was introduced during a time of panic. His calm and deliberate conclusion was that it was the invention of the evil one, and was conceived in one of his most wicked moments:

Mr. W. Weaver (London) said the paper revived in his mind the many battles he had fought in the past upon the question of sewer interceptors. They must recollect that in the good old times when the people lived to good old ages, when each house drained into its own little settling-tank instead of collectively to a big one, interceptors were unknown. It was interesting to trace the evolution of the intercepting trap. He thought it was in 1857 or 1858 that he first came into contact with the interceptor siphon. A builder was then building Onslow-square, and he put some siphons into the drains he was laying, and the local authority sent in some workmen and pulled them out again. He heard nothing more about intercepting traps until about the time when the Prince of Wales was seized with typhoid fever. Then it brought into vogue the new profession of sanitary expert, a very good business upon which many thrived. Upon the interceptors being introduced spasmodically here and there he read a paper before the Society of Medical Officers of Health, in which he combatted the idea that intercepting traps were for the general benefit of the community. He took the view that the intercepting trap, by shutting off all foul air from the sewer of one particular house, was securing for the individual a greater immunity from risk than that enjoyed by his less affluent neighbour, who could not afford to reconstruct his drains. At that time he had only one brother surveyor who spoke in support of his views, but he had an array of sanitary expert talent against him which would have appalled a more timorous individual than himself. Strange to say, when interceptors became universal, and the house drains throughout the metropolitan area were being reconstructed by hundreds and thousands on the new scientific principles, there were several meetings called to consider as to the advisability of the universal extension of the intercepting trap, and at one of these meetings of surveyors in London, held under the presidency of Sir Alexander Binnie, the opinion was unanimously expressed that intercepting traps were a mistake, but, looking at the fact that the public and the experts who advised them were of opinion that the intercepting trap was an essential feature on the house drain, the meeting felt it was idle to go in for any general proposal for pulling out all the intercepting traps throughout London. But having expressed the opinion that the intercepting trap was wrong, they passed a rule that in all cases where an intercepting trap was used a ventilating shaft on the sewer side of the trap should be carried up the property so drained. This was antagonistic to that propounded by Mr. Burgess, who said that the sewer and house drainage should be kept distinct. The idea was that instead of being kept distinct, sewer and

Digitized by Google

house drainage should be regarded as one system interdependent one upon another; that the people who created the smell should assist in carrying it away; that the individual should not be allowed to make a stink, pass it down a tube, close it off with a shutter, and say, "Get rid of that stink I have made."

Mr. C. H. Cooper (Wimbledon) said it might be very well to ask a resident to do something to obviate the nuisance which he caused himself, but it was too much to ask him to take the nuisance caused by others, particularly when they might contain the germs of disease. He thought it was a necessity that each house drain should be cut off from the air of the sewer, and that could best be done by a proper intercepting trap.

Mr. A. H. Campbell (East Ham) was sorry there should be the necessity for a paper such as this, but undoubtedly the justification of Mr. Burgess was the heresy of Mr. Weaver and Mr. Crowther. Mr. Crowther said that the intercepting trap was the invention of the evil one. He liked to keep the evil one as far from him as he could, but he thought the evil one in this case was not the disconnecting trap but the foul sewer air. He was brought up in the old school, which declared the three essentials of successful house sanitation to be—that all house drains should be freely ventilated, laid to self-cleansing gradients, and disconnected from the sewers. He had not seen any necessity to change that view, but from a quarter of a century's practice his belief in the necessity of the intercepting trap was confirmed more and more. He hoped it would not go forth from that assembly that there was any consensus of opinion in favour of any alteration, but that those words of heresy were voices crying in the wilderness.

Sewer Tunnelling.

Mr. A. E. Snape, M.Sc., A.M.Inst.C.E., presented a paper on "Sewer Tunnelling." He said it was his aim to avoid mention of all matters not connected with the engineering practice and detail used in the construction of the large sewers he was engaged upon for the London County Council. The two contracts he had chiefly in mind were (1) Contract D, which consisted of 4½ miles of brick barrel sewer, 11 ft. 6 in. diameter, extending from Deptford to Plumstead; and (2) Contract E, which consisted of 5½ miles of similar brick barrel sewer, for the greater part of the same diameter, and extending from Catford to Plumstead. Both these sewers were constructed, for the main, in tunnel and where cast-iron was used without a shield. The contract drawings showed the sewers to be built of five rings of brickwork, with the addition in wet ground of a square concrete base or cradle to springing height. The invert of the sewers was built in blue brickwork for a third of the internal circumference. The depth below ground level varied from 120 ft. to 9 ft. headway only, in one case, and that under house property. The sewers passed under much property, including Government barracks and a church, and this necessitated very careful work. On Contract D the contractors were allowed by the chief engineer to substitute for the ordinary brick and concrete sewer section in loose gravelly ground a cast-iron segmental tunnel lined with fine concrete, and having a blue brick invert to springing level. The cost of the two contracts with the attendant special works was nearly 750,000*l.*

In chalk an explosive was allowed, and it saved considerable expense and time. Monobel was selected. Its action was not as violent as that of dynamite, and its fumes and smoke were not as deleterious to health. Charges containing 4 oz. were found to act in the best manner, and about forty per length was found the best number. The average amount used was 2 oz. per cubic yard of excavation.

The concrete was ordinarily mixed in the proportions of seven measures of clean Thames ballast to one of cement, and the compo in the proportions of two measures of sand to one of cement. Keys and goggles were always moulded in the concrete to ensure a good bond; when fresh concrete was laid the exposed surface of the old work was well swept and well flushed with weak cement grout. All cement was kept on the works for six weeks before being used, and in the meanwhile samples were tested, and the whole of it turned over once a week if any of it was received in a hot condition. All bricks, except red sheeters, were without frogs, and of a heavy character.

Mr. W. Willis (Chiswick) moved a vote of thanks to the author, which was seconded by Mr. Cooper (Wimbledon), supported by Mr. Phipps (Basingstoke), and carried.

NOTES FROM PARIS.

ACCORDING to custom, the final sitting of the Congress of French Architects, in the theatre of the Ecole des Beaux-Arts, was devoted to the distribution of "recompenses." The Gold Medal of Honour (founded by Guérinot) was awarded to M. Paul Mialhe, architect, of Bordeaux. The Dejean Prize (a silver medal) was awarded to M. Saladin, architect, of Paris. The Silver Medal prize, founded by J. François Delarue, was awarded to M. André Narjoux, architect, of Paris. In domestic architecture, the Silver Medal prizes founded by Sédille and Soufaché were awarded to M. Sorel, architect, of Neuilly, and to M. Barthélemy Guibard, architect, of Toulouse.

The completion of the Boulevard Haussmann will shortly be voted by the Paris Council, and the Prefect of the Seine has proposed that they should devote a sum of 7 million francs to the acquisition of house property in Rue Taitbout, which would have to be demolished to carry out these operations.

The Paris Municipal Council have also been considering a scheme for the erection of a Philharmonic Hall on the site of the old Franconi circus in the Champs Elysées. The plans for this have been prepared by M. Roger Bouvard, the son of the well-known official architect to the City of Paris. The scheme meets with a great deal of public opposition, as it is expected that it will injure the aspect of the Champs Elysées and reduce its space.

At the Champ de Mars, near the Eiffel Tower, a subterranean construction, with a lift, is being carried out, in which will be installed the military and naval telephone and wireless telegraphy services. This installation will place Paris in direct communication with all the capitals of Europe.

The old building of the Morgue, at the extremity of the Ile de la Cité, behind Notre Dame, is to be demolished, and a larger building for the same purpose is to be erected on the grounds of the former Hôtel Dieu, on the Quai de l'Archevêché.

The Council of the Beaux-Arts has awarded travelling scholarships to two young architects for their exhibits in the Architectural Room at the recent Salon. M. H. Marcel Magne has received the scholarship for his fine drawings of the mural paintings at the Châteaux of Rochechouart and of Montreuil-Bellay; and M. Adolphe Thiers for monograph drawings of St. Sergius at Constantinople and for his sketches in Turkey.

The prize founded by the late sculptor Bartholdi to be awarded to an artist under thirty for a remarkable work in any department of art has been awarded this year to an architect, M. Maurice Durand, for his design for a triumphal bridge exhibited at the Salon.

M. Alfred Boucher, the eminent sculptor, has been commissioned to execute bronze statues of Danton and of Gambetta, which are to be erected in the High-street at Sèvres, on pedestals carried out in the ceramic ware for which Sèvres is famous.

Two large decorative paintings by M. Henri Martin have been placed in position in the Salons de Reception at the Elysée Palace.

PICTURE EXHIBITIONS.

THE LEICESTER GALLERY.

AT the Leicester Gallery is an interesting collection of the works of that strenuous and conscientious though in some respects rather wrong-headed painter Ford Madox Brown. We say "wrong-headed," in that he seems to have thought that hardly painted and thoroughly worked out detail could find its own place in a picture without the concentrating influence of composition and balance of lighting. Thus his "Work," a smaller edition of the large picture, is a marvel of detailed study of varied types of figures and accessories, of the most brilliant kind, and yet in the true sense of the word it is no picture; it is a mosaic of detail; everything assaults the eye, so to speak, at once. He commenced, as some of the early paintings show, in a very different manner; he arrived at his later style through conviction, aided by the influence of the "P. R. B." The most completely successful picture he ever painted was perhaps "The Last of England," in which there is real pathos in the two principal figures, and the amount of character and suggestion he crowded into the array of background figures is astonishing. Whatever his mistakes, Madox Brown never failed through want of conscientious effort to do the most with his art, as he understood it. It ought to have been mentioned in the catalogue that several of the principal exhibits are either studies for, or reduced replicas of, paintings on a larger scale; not the important works themselves.

THE ST. GEORGE'S GALLERY.

At the St. George's Gallery in Bond-street is a representative collection of the beautiful works in sculpture, mostly bas-reliefs, of Miss E. M. Rope, which should be seen by those interested in sculpture. Miss Rope, as some of our readers at all events know, has devoted herself to a class of subject which she has almost made her own; little fanciful and poetic allegories in sculpture, in which child figures play a principal part. Some of those exhibited we are familiar with; there are others we did not recollect to have seen, such as "Will-o'-the-Wisp," in which the figures of the villagers following the sprite are full of character. In her bas-reliefs Miss Rope always keeps in view decorative effect of line and composition. We may add that the St. George's Gallery, in which these are exhibited, is a new small exhibition room, partly for permanent exhibition of decorative work, partly for small temporary exhibitions like this of Miss Rope's charming sculpture.

PROPOSED LABOUR EXCHANGES.

A PARLIAMENTARY paper which has just been issued contains a statement of probable expenditure upon the establishment, equipment, and maintenance of exchanges under the Labour Exchanges Bill. The proposals embrace the division of the United Kingdom into ten districts, each with a central "clearing-house" and minor exchanges, about 240 in all, and all co-ordinated with a chief "national clearing-house" in London. The initial outlay upon buildings, with sites, is computed to be about 65,000*l.* for 1909-10, the same amount for 1910-11, 36,000*l.* for 1911-12, and less than 20,000*l.* for each of the subsequent six or seven financial years. The annual expenditure in rental and upkeep would rise from about 10,000*l.* to about 55,000*l.* in 1911-12, and then fall gradually to 45,000*l.* as the provision of premises is completed. The average annual cost of salaries, etc., for perhaps more than 800 officers of all ranks when the project is in full working order is approximately 95,000*l.* to which is added 25,000*l.* per annum for

Digitized by Google

printing, stationery, etc., and 12,500*l.* per annum for telephones, travelling, and incidental charges. The ten divisional exchanges would be built, or provided, at the outset, in 1910-12; the eventual cost of sites and buildings in towns having a population exceeding 100,000 is calculated at some 180,000*l.*, to be spread over a term of probably ten years, for from thirty to thirty-five offices in those towns. The total expenditure is estimated approximately at 100,000*l.* for 1909-10; 210,000*l.* for 1910-11 and 1911-12; 200,000*l.* for 1912-19; and 180,000*l.* for 1919-20 and subsequent years.

GUILD OF ARCHITECTS' ASSISTANTS.

A MEETING was held at Cardiff on June 18, in the New Law Courts, to consider the formation of the Guild of Architects' Assistants, Mr. Lumsden presiding.

The Guild of Architects' Assistants was recently formed in London, the object being to remedy a state of affairs which has been growing more and more acute in recent years, and caused chiefly by the lack of co-ordination and unity between practising architects and their assistants. It is the outcome of a desire to protect the interests of properly-qualified assistants from unfair competition, while securing for practising architects the advantage of knowing that they were only engaging qualified men, and at the same time uniting both parties in an endeavour to further the interests of the profession generally.

Mr. E. J. Dixon, A.R.I.B.A. (London), founder of the Guild, delivered an address in favour of establishing a branch of the Guild for South Wales and Monmouthshire. He pointed out the practical advantages of unity, saying that the days of the Victorian era were passed when the principal took a real interest in his pupils. A different class of principal had arisen—a class of men in a hurry to get rich—and the result was that the position of the assistant had become extremely acute. He referred also to the architectural assistants turned out by the schools, colleges, and even the University, without any attempt to regulate the supply.

It was these facts, these new phases of the question, which had given rise to the Guild. The assistants must combine for their own support, and so be able to insure themselves against the many and various difficulties which arose in the course of their business. The benefit gained by mutual help would be of immense advantage to the rank and file of the profession. He drew attention to the fact that for the great majority of the assistants architecture was first and foremost their means of gaining a livelihood, and some steps ought to be taken to render that livelihood less precarious than was at present the case.

The Guild could act in a variety of ways for the benefit of its members. A principal had his remedy against an incapable or fractious assistant, but the assistant had no remedy in those cases where he was at the mercy of an unscrupulous employer. The Guild would have to undertake cases of this kind, first by friendly remonstrance to the principal and then by such other means as the nature of the case might suggest.

Then an employment bureau would be formed and an allowance made to those out of a berth. Endeavours would be made to organise a system of registration on a large scale, so that by the central body of local branches having a list of vacancies, which could be supplied by sympathetic employers, they would be able to place many in situations who at present were unable to avail themselves of such advantages. Statistics would have to be obtained in all centres as to the number of assistants and the percentage of unemployment before any definite unemployment scheme was adopted, but the tentative proposal was to pay a thirtieth of the salary to the funds and receive a half of the salary when unemployed.

There was also the question of the graduation of salaries, which undoubtedly bristled with difficulties, yet he believed it was far from being impossible of solution. Much more could be done by the grading of assistants into their respective spheres as designers, draughtsmen, constructionalists, etc., and by co-operation of employers he had no doubt much could be accomplished in this way, and so remedy a state of affairs under which some of the best men in the country were working for salaries no larger than paid to an artisan. He also referred to a scheme of education, pointing out the anomalies of the present examination system. Finally he invited all to do their best to bring the Guild into active operation, and to see that it did not fail by reason of lack of energy. There was no body at present dealing exclusively with the interests of assistants, who were fast becoming a most important section of the profession; and it was for the Guild to fill up this gap and unite all for their protection and advancement.

An animated discussion then took place in which several points of interest relating to the constitution of the branch and the scope of its work were satisfactorily answered by Mr. Dixon, and the following resolution was thereupon adopted:—

"That this representative meeting of architects' assistants, supported by several well known local architects, recognising the urgent need of combination and union in order to further their professional interests, resolves that a branch of the Guild of Architects' Assistants for South Wales and Monmouthshire should be formed in Cardiff, and that a Committee be forthwith appointed for that purpose."

The Provisional Committee was then re-elected with power to co-opt others, Mr. S. Bowen Williams, of 110, Miskin-street, Cardiff, being appointed Hon. Secretary.

THE ARCHITECTS' TECHNICAL BUREAU.

(COMMUNICATED.)

"*Bureau Tabulated Prices.*—This work has been compiled to fulfil two purposes, viz.: (1) To assist an architect in inserting prices in his specification according to the value of the work being executed under his direction; and (2) to obtain at such time as may be required general particulars, illustrations, etc., of goods at or about the costs specified by him. The information so furnished is that extracted from the manufacturer's catalogues filed at the Bureau, together with more definite details obtained direct from the individual firms, where such is not contained in their printed information.

The tables of prices being of an extensive character, are therefore supplied to architects in book form, and are set out under three headings, A, B, and C, *i.e.*, respectively (*a*) prices of goods suitable for work where the first essential is to keep the cost as low as possible; (*b*) work of an average character; and (*c*) where the cost of the goods is not a matter of first consideration. It is only necessary for the architect to send the table number of any particular goods to the Bureau to obtain the information extracted from various catalogues, etc. The prices are arranged in the order of trades generally to be found in a bill of quantities, and will embrace in the new issue close on 1,000 different subjects, practically covering everything required in buildings of all descriptions.

An additional feature in next year's issue will be that on the pages facing the tabulated prices of goods will be a register of those firms supplying such goods, which will, it is hoped, be of considerable assistance to an architect.

The next meeting of the Selection Committee for the consideration of manufacturers' specialities with a view to descriptions thereof being issued to the architect subscribers, will be held on July 13 at the offices, 24, Hart-street, Bloomsbury, and firms intending to submit goods should apply to the Secretary without delay."

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir Melvill Beachcroft, Chairman, presiding.

Loan.—It was agreed to lend St. Pancras Borough Council 3,299*l.* for electric lighting.

Execution of Jobbing Works.—The General Purposes Committee reported as follows:—

"When reporting on February 16, 1909, as to contracts for the future execution of jobbing and other works we stated that we had excluded from the form of contract for engineering works works of a mechanical character which would in any case have to be dealt with quickly by the firms most experienced in that class of work. The Chief Engineer has reported as to the steps to be taken to secure the proper execution of such works and has obtained from selected firms in different parts of London prices for the supply of labour for each of the different classes of work, the rates quoted being "overhead" rates, *i.e.*, rates to include wages, establishment charges, use of tools, dirty money (if any), and profit. The Chief Engineer states that it is necessary to have arrangements with several firms of each class in case two or three repair jobs should simultaneously require attention, and he recommends that each of the selected firms who quote an "overhead" rate for fitters at not more than 1s. 3d. an hour should receive a share of the Council's work, the sum of 1s. 3d. being determined on the basis of the London rate of 9d. an hour. The Chief Engineer further informs us that it is not possible to establish a schedule of prices for materials used for mechanical work, and he proposes that all large items should be ordered by him direct from the manufacturers, and that accounts for material small in value supplied by the selected firms of contractors should be checked in accordance with the current market rates. We concur, and have authorised the acceptance of the offers of the firms in question for the supply of labour for the execution of mechanical jobbing works, at the rates specified in their estimates, material used to be charged for on the basis of current market rates."

The White City Accident.—Upon the reception of the report of the Building Act Committee Mr. Chapman asked the following questions in reference to the accident which occurred last Saturday at the White City:—Whether the licence has been granted by the Council for the alpine railway at the White City? Is it a fact that the promoters were informed last February that under no conditions were the public to be admitted to any building or show before it had been properly certified and a licence granted? What does the Building Act Committee propose to do in regard to the mishap which occurred last Saturday?

Mr. Dowton replied that the licence had not been sealed or issued by the Council, as the conditions had not been accepted, and the works required by the Council, including the provision of a system of automatic signalling and control, had not been carried out. The accident in question could not have occurred if the Council's requirements had been complied with. The letter referred to was sent on May 4 to the architect of the exhibition. On June 14, the attention of the Committee having been drawn to the fact that the structure was being used by the public, the solicitor was instructed to consider as to steps to be taken in the matter, and on June 25 he was instructed to take legal proceedings immediately if in his opinion he could do so successfully.

Greenwich Improvement.—Mr. Glanville moved that it be referred to the Improvements Committee to consider and report as to the advisability, in the session of 1910, of obtaining Parliamentary powers for widening the main thoroughfare from Dockhead to Greenwich, through Creek-road, and along or in the vicinity of the present tramway route, the scheme to be carried out as a county improvement.—This was carried.

Having transacted other business, the Council adjourned.

THE QUANTITY SURVEYORS' ASSOCIATION.—At a recent meeting of the Council of the Quantity Surveyors' Association, Mr. H. T. A. Chidgey was elected President for the ensuing year, and Messrs. S. Chatfeild Clarke and J. S. Paumenter, Vice-Presidents.

SALVATION ARMY HALLS, BEDMINSTER.—Salvation Army Halls have been erected at the junction of North-street and Dean-lane, Bedminster. The premises consist of two halls, one for meetings and services, and the other for Sunday-school meetings. The work has been carried out by Mr. T. C. Gluyas, of Bedminster, from the designs of Mr. Oswald Archer, of London.

Digitized by Google

THE BUILDER

JULY 3, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, JULY 3.

Edinburgh Architectural Association.—Annual excursion (1) to Doune Castle, 2) Queen Victoria School, Dunblane.

WEDNESDAY, JULY 7.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

Royal Archæological Institute.—Mr. W. H. Knowles, F.S.A., on "Tynemouth Priory, Northumberland, with an Account of Excavations on the Site of the Norman Choir." Lantern slides. 4.30 p.m.

THURSDAY, JULY 8.

Paint and Varnish Society (*St. Bride's Institute, Bride-lane, Fleet-street, E.C.*).—Mr. W. Fourniss on "The Methods of Painting on Stucco." 8 p.m.

Fifty Years Ago.

FROM THE *Builder* OF JULY 2, 1859.

THE AMENDMENT OF HOSPITAL PLANS.

IT is quite clear that a large amount of work in hospital-building should be at once undertaken throughout the country. The effect of hospitals as they are, is to kill rather than to cure: a patient suffering from an easily curable ailment, is admitted to an hospital of the ordinary form of plan: the case shortly becomes dangerous, the patient having contracted a new illness from the hospital atmosphere: there might be still a chance were removal to pure air possible; but death ensues, with the full knowledge of the medical man that the cause of death was comprised in the means taken towards recovery.

The more the question of infectious disorders is examined, the more it is perceived that the infection or non-infection is a matter of the ventilation. The amount of ventilation and air required in hospitals is immense, from the *volume* of the agencies of pollution, and it is on this account that we have perseveringly advocated the principle of arrangement where each ward is so detached from other parts of the plan, that it might be regarded as a distinct hospital.

*** At the very moment when the *Builder* was making this contention, the great hospital at Netley was getting built, at enormous cost, in total disregard of this necessity for isolation.—ED.

BUILDER COMPETITION FOR A FOUNTAIN.

WE have received sixty-one designs for a fountain.

By the kindness of the Council of the Architectural Association, the drawings will be on view in the Gallery at 18, Tufton-street from to-day (Saturday, July 3) to the following Saturday; from 10 a.m. to 4 p.m. on Saturdays, and from 10 a.m. to 6 p.m. on other days.

The award is not made at the time of going to press, but will be announced in our next issue.

The names of the successful competitors will, of course, be affixed to their drawings. Any other competitors who wish their names affixed are requested to write to the Editor to that effect; names will not be affixed to drawings except at the request of the author of a design.

Illustrations.

THE NEW COTTON EXCHANGE, LIVERPOOL.

FEW cities in the world can point to progress similar to that which Liverpool has made within the last few years in the erection of new buildings. One of the great additions to the architectural features of the city is the new Exchange of the Liverpool Cotton Association, Ltd., in Oldhall-street. Time was, and not so very long either, when the members of the Association had perforce to transact their business on the Exchange Flags. They then obtained a room of their own, which has served its purpose admirably, but which, owing to the great increase that has taken place in the operations of members of the Association, has long since become too small. Hence the directors had to cast about for a site, contiguous to the Flags, whereon a new Cotton Exchange might be erected. They were fortunate in securing one in Oldhall-street. Land in the centre of the city is becoming increasingly valuable, and it is not surprising to learn that the acre or so acquired has cost the Cotton Association no less a sum than about 100,000*l*. The buildings now completed cost 230,000*l*., in addition to the fitting up of offices.

The style and character of the new Cotton Exchange was decided by competition a little over five years ago, the designs selected being those of Messrs. Huon A. Matear and F. W. Simon, of Liverpool. The contract for the construction of the building was secured by the Waring White Building Company, Ltd. The construction was completed two months before the expiry of the contract time, as a result of which the contractors earned a bonus of 2,500*l*. At one period of the work over 700 men were employed on the job.

On the north side the elevation is carried out almost entirely with a facing of cast-iron. A number of cotton salerooms are placed on this side of the building, and for these an even, unobstructed light is necessary. It was found that by using cast-iron attached to the steel frame, in the place of stone piers, a great reduction could be effected in the width between the windows, and so bringing about a corresponding diminution of shadow, while at the same time it also enabled the thickness of the walls to be reduced. Nearly 18,000 super. ft. of cast-iron have been used altogether.

The Exchange Hall, of which a view is shown in the illustration, occupies the main space inside the building, its dimensions being 140 ft. by 128 ft. Though differing in shape, it is about equal in area to that of the Exchange news-room. The Hall is carried to the top of the building, and is lighted by means of a large glass roof. A striking feature of the interior of the large Exchange is the use which has been made of some magnificent monolithic Royal Pearl granite columns, which were quarried in Norway and shipped to Aberdeen, where they were turned and polished. The bases and capitals of the columns are of marble. Every modern convenience and facility has been introduced for the transaction of business. There is a complete system of telephonic communication installed, by means of which the tenants are enabled to call each other without first ringing up the Telephonic Exchange. There is a post and telegraph office, while the various cable companies also have offices in the building. On each floor of the building facilities are provided for the posting of letters. In addition to the board-room and the administrative offices of the Association, there are also smoking and reading rooms on the ground floor. The board-room is panelled in oak, and the other rooms mentioned in walnut.

The various other floors are devoted to offices. Tape-machines are fixed in all tenants' offices, thus providing them with a means of receiving prices and general information at the earliest possible moment. The rapid progress which was made with the construction of the building was not only an advantage to the Association, but also to the tenants, who were able to take possession of their new offices so much earlier than was at one time anticipated. Electrical clocks are installed throughout, and these are controlled by a central instrument. The Exchange Hall is illuminated by 500 electric lamps, the light from which is reflected. The floors throughout the building are formed of slightly cambered concrete blocks, made with a specially-prepared fire-resisting concrete, and fitted in between the rolled steel joists without the use of any kind of centring. Some 3,600 tons of steel have been utilised in the erection of the building. A complete system of lifts, numbering thirteen altogether, has been installed, the cars having been designed by the architects.

A restaurant is fitted up in the basement, while a club is formed with premises on the top floor. From this club magnificent views are obtainable of the estuary of the Mersey and of the Welsh hills.

The drawing now illustrated is from a pencil and wash drawing by Mr. Matear.

INTERIORS, VICTORIA AND ALBERT MUSEUM.

WE give views of two of the interiors in the Victoria and Albert Museum, from photographs furnished to us on the day of the private view last week.

The appended plan shows where these interiors come in. The upper one is a view of the vestibule, looking towards one side and giving a view through to one of the main staircases. The other is the interior of either the "East Central Court" or the "West Central Court" (see plan); it is not easy to say which, but they are identical in architectural treatment.

Some general remarks on the building we made last week; we now subjoin a list of the firms employed in different departments of work in this immense building, which the architect has kindly furnished to us:—

Contractors—Messrs. Holliday & Greenwood.
Surveyors—Messrs. G. Corderoy & Co.
Engineer for steel construction—Mr. E. L. Hall.
Testing and inspection of steel and other materials—Mr. R. H. Harry Stanger.
Heating and ventilation—Messrs. Jeffreys & Co.
Clerk of works—Mr. H. W. G. Tanner.
Assistant clerk of works—Mr. G. F. Green.
Foreman of works—Mr. J. R. Farndon.
Portland stone—The Bath Stone Firms.
Outside Paving—The Hard York Non-Slip Paving Company.
Granite steps, etc., main entrance—Messrs. Fenning & Co.
Marble columns and main stairs—Messrs. Farmer & Brindley.
Marble staircases and landings (other than main)—Messrs. Walton, Goody, Cripps, & Co.

Digitized by Google

Marble flooring in vestibule—Messrs. Burke & Co.
Mosaic paving—The Art Pavements Company and Mr. J. F. Ebner.
Preservative fluid on stone domes—Messrs. Szerelmy & Co.
Slates—The Old Delabole Slate Company.
Stoneware pipes, etc.—Messrs. Oates & Green and Messrs. Doulton & Co.
Facing bricks, red—The Fareham Brick Company.
Facing bricks, Burham bricks—The Associated Burham and Portland Cement Company.
Building bricks—The Farco Fletton Brick Company.
Glazed bricks—The Farnley Fire Clay Company and Messrs. Rufford & Co.
Interior Cranham brick lining of walls—Messrs. Sankey & Co.
Cement—The Associated Portland Cement Company and Messrs. Martin Earl & Co.
Electric wiring—Messrs. T. Clarke & Co.
Electric fittings—Messrs. Strode & Co.
Steelwork (constructional)—Earl of Dudley's Works and Messrs. Keay & Co.
Ornamental metalwork and casements—Messrs. Hart, Son, Peard, & Co.
Iron staircases, grilles, etc.—The St. Pancras Ironwork Company and Messrs. Hayward Brothers & Eckstein.
Ironmongery and sliding doors—Messrs. Chas. Smith, Sons, & Co.
Iron drainage—Messrs. Cameron & Co. and Messrs. Burn Brothers.
Rain-water pipes, etc.—Messrs. W. Macfarlane & Co.
Iron fireproof doors—Messrs. Hobbs, Hart, & Co. and Messrs. Chubb & Sons.
Armoured fireproof doors—Messrs. Mather & Platt.
Lightning conductors—Messrs. Anderson & Co.
R.W. heads—Mr. T. Elsley.
Boilers—Messrs. Davy Brothers.
Hydrants—Messrs. Simpson & Co.
Asphalt—The Limmer Asphalte Company.
Turntable in unpacking department—Messrs. Dick, Kerr, & Co.
Sanitary fittings—Messrs. Dent & Hellyer.
Plastering, general—Messrs. J. Tanner & Sons (Liverpool).
Plastering steelwork for ditto—Messrs. Potter & Co.
Plastering, ornamental—Mr. G. P. Bankart and the Bromsgrove Guild.
Plaster merchants—Messrs. Callendar & Co. and Messrs. Staten & Co.
Selenetic plaster merchants—Messrs. Nelson & Co.
Plastering in galleries east of quadrangle—Mr. J. Bickley.
Plastering in offices east of quadrangle—Mr. S. Spencer.
Paint—Messrs. Gay & Co.
Distemper—Messrs. Gay & Co.; and Duresco by the Silicate Paint Company.
Patent glazing—Messrs. Rendle & Co.
Leaded glazing—Messrs. G. Farmiloe & Sons.
Fire-resisting glazing—Messrs. Hayward Brothers & Eckstein.
Glazing, general — Messrs. Pilkington Brothers.
Wood-block flooring—Messrs. Burgess & Co.
Lifts, electric passenger—The General Electric Company.
Lifts, service—Mr. G. Johnson.
Electric lift, south-east pavilion—Messrs. Waygood & Co.
Service lifts, unpacking department—The Hydraulic Lift Company.
Revolving doors—The Van Kannel Revolving Door Company.
Fireplaces and mantelpieces in offices—Messrs. Shuffrey & Co.
The Kauri block paving—The Improved Wood Paving Company.

BENCH ENDS, ST. NICHOLAS, WALCOT.

DURING the recent restoration of St. Nicholas Church, Walcot, Lincolnshire, the whole of the pews were removed, and the opportunity was taken to photograph the carved ends. It is interesting to note that the majority of the bench ends were replaced in the restored building. They are of such good quality that it would have been an act of vandalism to discard them. Worn and wormeaten as many of them are, they will nevertheless see the arrival and departure of several generations before they become too decrepit for further use.

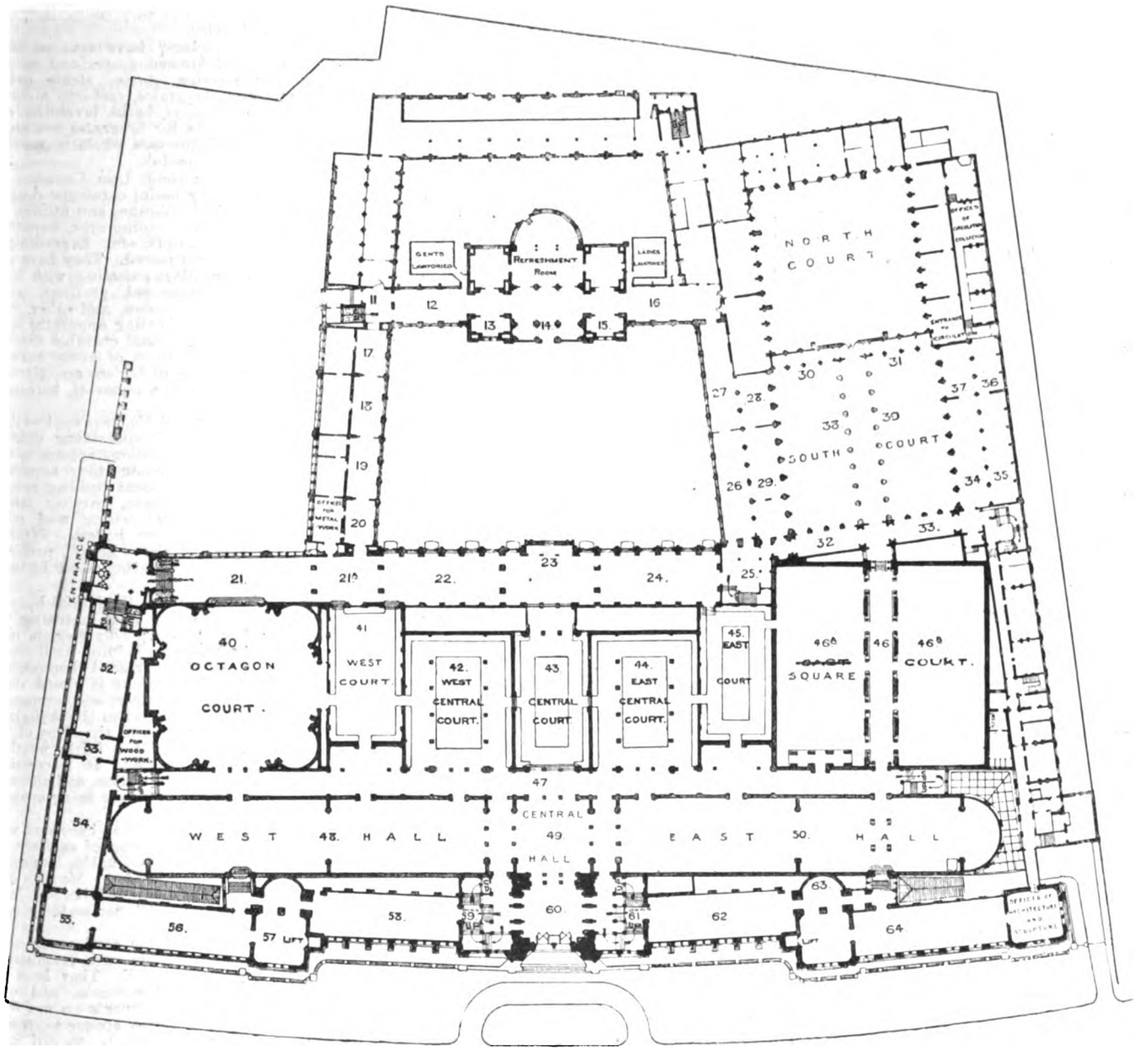
The illustrations are from photographs taken by Mr. Henry Walker, of Stamford.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

One-story Building at the Rear of No. 30, Endlesham-road, Balham.

Clapham.—(*a*) That the resolution of May 25, sanctioning the erection of a one-story building at the rear of No. 30, Endlesham-road, Balham, be rescinded; (*b*) that the Council do not consent to the erection of a one-story building at the rear of No. 30, Endlesham-road, Balham, with a boundary fence at less than the prescribed distance from the centre of the roadway of Western-lane (Mr. W. C. Poole).—Refused.



Ground Plan, Victoria and Albert Museum.

Digitized by Google

Lines of Frontage and Projections.

Brixton.—A wooden porch in front of a house proposed to be erected north-westward of No. 31, Stockwell Park-road, Brixton (Mr. G. A. Lansdown for Mr. H. Brown).—Consent.

Kensington, North.—Bay windows, oriel windows, and porches in front of Nos. 3 and 5, St. Quintin-avenue, Kensington (Messrs. Trant, Brown, & Humphreys for Messrs. Daley & Franklin).—Consent.

Paddington, North.—Reconstruction of Nos. 53 and 55, Maida-vale, Paddington (Messrs. Banister Fletcher & Sons).—Consent.

St. George, Hanover-square.—Refacing of the front of No. 73, South Audley-street, St. George, Hanover-square (Mr. Paul Waterhouse).—Consent.

Strand.—Two illuminated signs in front of the Strand Palace Hotel, Strand (Mr. W. J. Ancell).—Consent.

Wandsworth.—A motor garage at the rear of No. 2, Lyford-road Wandsworth, to abut upon the south-eastern side of Magdalen-road (Holloway Brothers (London), Ltd., for Dr. Smyth).—Consent.

Kensington, North.—Bay windows and a porch in front of a proposed house on the eastern side of Highlever-road, Kensington (Mr. J. P. Williams).—Refused.

Width of Way and Lines of Frontage.

Camberwell, North.—A deviation from the plan approved for the erection of buildings on the north-eastern side of Southampton-street, Camberwell, to abut also upon the northern side of Cottage-green, so far as relates to the erection of seven buildings instead of six buildings (Messrs. H. King & Son for Mr. F. Flower).—Consent.

Hammersmith.—An addition at the rear of the West London Hospital, Hammersmith-road, Hammersmith (Mr. W. Harvey for the Committee of the West London Hospital).—Consent.

Lines of Frontage and Construction.

Hackney, North.—The retention of a temporary wood and glass shelter at the rear of No. 14, Heathlands-road, Stoke Newington, abutting upon the northern side of St. Kilda's-road (Mr. S. G. Castleman for Mr. F. A. Slaughter).—Consent.

Space at Rear.

Clapham.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of No. 9, Wakehurst-road, Clapham, with an irregular open space at the rear (Mr. H. Bignold for Mr. Hooper).—Consent.

Westminster.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of an addition to the St. James' Tavern, Great Chapel-street and Broadway, Westminster (Messrs. W. Bradford & Sons for the Cannon Brewery Company, Ltd.).—Consent.

Deviation from Certified Plan.

Marylebone, West.—Deviations from the plan certified by the District Surveyor, under sect. 43 of the Act, so far as relates to the proposed rebuilding of Nos. 50 and 51, Upper George-street, and Nos. 44 and 46, Seymour-place, St. Marylebone (Messrs. J. H. St. John & Sons).—Consent.

Alteration of Buildings.

Paddington, North.—A modification of the provisions of sect. 41 of the Act, so far as relates to alterations at No. 558, Harrow-road, Paddington, whereby two separate buildings will be formed, each with an irregular open space at the rear (Mr. F. J. Fisher).—Consent.

Formation of Street.

Lewisham.—That an order be issued to Mr. J. Everington sanctioning the formation or laying out of a new street for carriage traffic to lead from Whitefoot-lane to Hazlebank-road, Catford (Mr. H. W. Forster, M.P., and Mr. J. Watt).—Consent.

Cubical Extent.

City of London.—The retention upon the site of Nos. 33, 34, and 35, Gutter-lane, and No. 6, Carey-lane, City, of a building to exceed in extent 250,000 cubic ft. (Mr. R. W. Roe).—Consent.

Uniting of Buildings.

Islington, North.—The uniting of No. 13, Junction-road, Highgate, with a one-story building at the rear of No. 11, Junction-road (Mr. H. Goodchild for Messrs. Knowlman Brothers).—Consent.

St. Pancras, East.—The formation of an opening exceeding the size specified in sect. 18 of the said Act, between No. 1 garage and No. 2 garage, at the premises of the F.I.A.T. Motor Cab Company, Ltd., abutting upon Pancras-road, Weller's-court, and Cheney-street, St. Pancras, and do also consent to the use of armoured doors to such opening (Mr. H. W. Burton for the F.I.A.T. Motor Cab Company, Ltd.).—Consent.

Southwark, West.—Uniting of Nos. 99 and 101, Redcross-street, Southwark (Mr. W. H. Woodroffe).—Consent.

Dwelling-houses on Low-lying Land.

Camberwell, North.—That a licence be granted under sect. 122 of the Act to Mr. F. Flower, for the erection of dwelling-houses on low-lying land, situated at the junction of Southampton-street and Cottage-green, Camberwell (Messrs. H. King & Son on his behalf).—Consent.

Competition News.

LIBRARY, LISCARD.

In the competition for a new library at Liscard the assessor, Mr. G. H. Willoughby, F.R.I.B.A., has made his award as follows:—Premier design—No. 34, by Messrs. R. B. MacColl & G. E. Tonge, Southport. Bracketed second—No. 8, by Mr. J. R. Earnshaw, Manchester; No. 30, by Messrs. Packer, Drewitt, & Drewitt, Southport; No. 33, by Messrs. Appleyard & Quiggin, Liverpool; No. 41, by Messrs. Deacon & Horsburgh, Liverpool; No. 49, by Messrs. Sproat & Warwick, Liverpool. Honourable mention—No. 4, by Messrs. Cheers & Smith, Blackburn; No. 6, by Messrs. Potter & Langham, Manchester; No. 17, by Mr. Frank Rimmington, Liverpool; No. 35, by Messrs. Hobbs & Simon, Liverpool; No. 39, by Mr. C. T. Taylor, Oldham; No. 43, by Messrs. Briggs, Wolstenholme, & Thornely, Liverpool. The Libraries Committee have decided to proceed with the premier design.

Trade Catalogues.

MESSRS. JAMES H. TOZER & SON send us a copy of their handbook on "Reinforced Concrete and the Lock Woven Mesh System," which, although constituting the catalogue of the firm, is in reality a treatise on the design of reinforced concrete. The first forty-six pages apply to the treatment of that material without reference to any particular system or any special type of reinforcement, all calculations being prepared on lines identical with the recommendations of the Royal Institute of British Architects' Committee. Formulæ are given for rectangular and T-beams, with single and double reinforcement, and various numerical examples are included, together with a series of diagrams facilitating the design of beams embodying specific qualities of concrete and steel. Shearing stresses in beam are briefly but sufficiently discussed, this section being illustrated by a diagram showing a ready and satisfactory method of determining the correct spacing for the web members providing reinforcement against tension on diagonal planes. Columns and column foundations are next taken, and the formulæ given by the Royal Institute of British Architects' report, the Commission du Ciment Armé are quoted. After two pages on the design of sewers, culverts, circular reservoirs, and kindred structures there is a brief but very helpful discussion of reinforced concrete arches. The remaining pages of the book are devoted to various applications of the Lock Woven Mesh system. The mesh itself is formed of main tension and secondary wires, the former spaced from 3 in. to 6 in., and the latter from 6 in. to 12 in. apart. A lock or knot is mechanically formed over the tension and transverse wires at each intersection, and it is claimed that the knots establish a mechanical bond, preventing the possibility of any slipping of the reinforcement within the concrete. It is claimed also that, inasmuch as in the average building a single continuous sheet of the woven-mesh reinforcement can be employed in foundations, floors, and roofs, a continuous bond is established throughout the concrete. This portion of the book contains numerous reproductions of sectional drawings, which should be found of value to designers. The handbook is one clearly deserving the attention of all who are interested in reinforced concrete construction. It is well arranged, excellently printed, and has evidently been prepared with much care.

Messrs. T. & W. Farmiloe have sent us a large and well-bound catalogue of 518 pages, containing illustrations and prices of nearly everything required in the ordinary course of work by the plumber, glazier, water-fitter, and heating engineer. The comprehensive character of the catalogue will be understood when we say that the index occupies twenty pages, and contains more than 2,000 references. The simplest way of showing the variety in the book is to give the first six entries in the index, namely, Abyssinian well gear, access drain-pipes and fittings, acetylene gas burners, adjustable tap unions, Ætna brazing lamps, air bricks, etc. As a work of reference for builders, architects, and surveyors, it will be almost invaluable.

The British Stone and Marble Company send us a pamphlet describing the different kinds of "reconstructed" stone produced at their works, and giving a series of photographic views illustrating some typical uses to which the material has been applied. The process of manufacture is simple, and, as verified by microscopical examination by the curator of the Geological Survey and Museum, the products only differ from natural stone in respect that they are generally more compact and are free from the planes of weakness occurring in the lower grades of stone from the quarry.

The Phœnix Engineering Company, of Chard, send us two catalogues, one containing particulars of their road-making and repairing plant, tar boilers and vans, road-cleansing machinery, and other appliances useful to municipal engineers, builders, and contractors; and the other relating to their tar-spreading machines, which are made in considerable variety, and range from the small hand-operated sprayer to the completely-equipped horse-drawn apparatus of more than 300-gallons capacity.

We have received from Messrs. Nicholls & Clarke a copy of the pocket edition of their catalogue. It contains illustrations and prices of kitchen ranges, firegrates, gas stoves, door furniture and other builders' ironmongery and hardware, and also of sanitary fittings, tools, paints, varnishes, etc. Two of the ranges are worthy of special mention, one being the "Melbourne" portable range, fitted with combination coal and gas ovens, and the other the "Yorker" portable range, with a high oven (suitable for baking bread), and a heating closet under it. Some of the lavatories have stands and brackets of new designs. The catalogue as a whole is very convenient, and contains a full index.

The Carron Company have sent us their new catalogue of kitchen grates and ranges, heating and cooking stoves, steam ovens, electric radiators, firegrates, cast-iron mantels, gas stoves and radiators, baths, lavatories, etc. Many of the designs for firegrates are excellent, and the catalogue as a whole is one that will certainly prove useful.

From the Thames Bank Iron Company we have received a very useful catalogue dealing with drain-pipes and soil-pipes and fittings, including traps, gullies, cleaning eyes, inspection chambers, manhole covers, etc. Everything is clearly illustrated and priced. They have also sent us another catalogue dealing with heating apparatus, ornamental gratings, rain-water goods, cast-iron sashes, and other iron-work. The section on heating apparatus is by far the most important, and contains illustrations of pipes and fittings of every variety. Numerous illustrations of boilers are given, a special feature being the series of horizontal tubular boilers.

Messrs. Revy Phillips & Co. have sent us their sectional catalogue C. 1, containing illustrations and descriptions of cooking apparatus and caterers' requisites. Among the apparatus shown are large independent cooking ranges, roasting ovens, hot closets, carving tables, grilles, gas cookers, self-setting and other ranges, and steam-heating boilers. Mention may also be made of the "Revy" perfected silent boiling nozzle for heating water by blowing steam direct into it.

Mr. W. S. Vellinghausen (Redditch) has sent us a catalogue describing and illustrating the Reiss skylight ventilator. This consists of a skylight supported on expanding trellis-work to which one or two framed louvres are attached. When the skylight is closed down the louvres overlap each other, and no passage of air can take place, but when the skylight is pushed up at right angles to the slope of the roof the louvres open and a fairly weather-proof ventilator is obtained. It is certainly a simple and ingenious invention, and although it is of German origin, it is now being made in Birmingham.

Messrs. John Jones (Chelsea) have sent us a copy of their latest catalogue of sanitary fittings. It includes some good baths, lavatories, water-closets, and other fittings. Mention may be made of the marble-topped bracket lavatory, and of the "Ideal" non-scalding bath and shower fittings.

Messrs. Young & Marten send us an illustrated description of their new premises in Romford-road, Stratford, E. They have recently erected large show-rooms, and concentrated their sale departments on one floor and under one roof. These appear to include nearly everything that can be wanted in a house, from sanitary work to paper-hangings. The baths and lavatories for sale are fitted

Digitized by Google

with water laid on, so that the purchaser can judge of their action on the spot. Their raw material for builders is stored at wharves and warehouses at Millwall and Brentford.

BOOK RECEIVED.

MEMORIALS OF OLD MIDDLESEX. Edited by J. Tavenor-Perry. (Bemrose & Sons. 15s.)

Correspondence.

THE COUNCIL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—The special general meeting convened to consider the revision of the by-laws under the new Supplemental Charter, having adopted on June 14 an amendment at variance with the proposals of the Council, and introducing new matter of which the general body of members had had no intimation or notice, a poll of the members has been demanded under by-law 62.

Before exercising their vote may I ask members to consider the effect of the resolution, which runs as follows:—

"Resolved, that one-third of the ordinary and Associate members of the Council shall retire each year and not be eligible for re-election for two years, *those retiring to be the Seniors in Service*, and in the event of equality of seniority the rotation to be decided by lot."

The objects aimed at by the mover and supporters of the resolution were threefold, viz.:—

1. To secure the introduction of new men in the ranks of the Council.

2. To broaden the basis of work and to get more members interested in the proceedings.

3. To get rid of men who had been on the Council for a number of years.

With the first two objects every member will, I assume, agree, and there is no reason why, if the point is not already covered by an existing by-law, the first part of the resolution giving effect to these views should not become law.

It should be noted, however, that by-law 31 provides that the whole Council, including President, Vice-President, and Hon. Secretary, shall go out of office every year. My objection rests solely and entirely with the proposal that the Institute should be deprived of the services of its most valued members, who would be compelled to retire from the Council for a period of two years through the arbitrary working of a cast-iron rule.

That the gentlemen against whom this resolution is directed are the most valued, is shown by the votes of the whole body of members. Their seats are secured and retained by the popular will and the popular will only. The general body have the whole matter under their entire control every year. If they express the wish that, having regard to the large experience of A, the mature judgment of B, and the invaluable services ungrudgingly rendered to the Institute by C, these gentlemen should be retained on the Council, then why should they not be there? No fairer or more democratic way of dealing with the matter could be devised.

To adopt the resolution as it stands is to stultify the work of the Institute, to fetter its hands, and to deprive it, possibly at some important crisis in its history, of its most trusted and able supporters.

ARTHUR CROW.

"A DIPLOMA COURSE IN ARCHITECTURE."

SIR,—I am glad from Sir Brumwell Thomas's letter in your last issue to see that there is some difference—not, it must be confessed, easily discernible to the naked eye of a mere outsider—between the Architectural Association School of Design and the Architectural Association School of Architecture. I gather that the School of Design is a sort of continuation school to provide teaching in design in the evenings to students who are already engaged in office work. This being so, it is in a sense a higher school to the School of Architecture itself, and my remarks about the scope of its work—its small electric light stations and model cowhouses—apply with even greater force.

But whatever may be the technicalities of the relationship between these two schools, no member of the Association will deny that till now a large share of its energies has been devoted to the smaller kind of domestic architecture. It is equally apparent, however, that a change is being made, and that so far as it goes is all to the good. Indeed members of the Committee of the Architectural Association have both verbally and in writing thanked me for my letter and assured me that this is the case.

I am sorry Mr. Seth Smith has felt hurt with my strictures. No one respects more than I do the laudable ideals which prompted him to take so energetic a part in the foundation of the Architectural Association Day School. He is probably not to blame if since then it has got on to wrong or faulty lines. But Mr. Seth Smith mistakes the point at issue; it is not the elementary kind of work done which appears to me to be wrong; it is, as Mr. Travers points out, its general character.

As a final suggestion, in order that this controversy may not be wholly barren of result, I propose to the Institute that an exhibition be held of the work executed in the various schools during the session which is just closing. We should then more clearly realise each other's aims and learn probably at the same time to treat them with greater respect.

C. H. REILLY.

MIDDLESBROUGH LIBRARY COMPETITION.

SIR,—At the suggestion of certain architects the memorial and letter in reference to the above competition was sent to the Competitions Committee of the Institute, at the same time expressing the hope that they would take up the matter strongly, and to which they replied as follows:—

"The Competitions Committee have considered the objections to the assessor's award raised in your memorial to the Middlesbrough Council.

It appears that the most serious objections to the award in your views are:—

1. The position of the lending library.
2. The area devoted to patents library, etc.

The other objections do not appear to be of any great importance.

With regard to the first, the Committee is of opinion that the clause in the instructions defining the position of the lending library is somewhat ambiguous, but it does not seem to necessitate its actually abutting on the dwelling-houses. The suggestion is that it should be on that part of the block of land adjoining the dwelling-houses.

Your second objection as to the area of the patents library seems to be due to a misapprehension of the Schedule of Accommodation given in the instructions. The 1,739 ft. required includes corridors, lavatories, etc.

An examination of the successful plan will show that the door from the newsroom to the entrance hall is a private pass-door and not for the use of the public.

The Competitions Committee consider that when an assessor has been regularly appointed it would be well to bring any objection to the award before them in preference to approaching the promoters directly."

To this we replied, disagreeing with their interpretation of the conditions, and laid the whole of the correspondence before the President of the Royal Institute of British Architects.

The President's reply, per the Secretary Royal Institute of British Architects, was as follows:—

"The President of the Royal Institute of British Architects desires me to thank you for your letter. He has very carefully considered the terms of the protest which you have sent to him, together with the conditions and the successful design, and he has come to the conclusion that the decision arrived at by the Competitions Committee of the Royal Institute is a sound one."

We have replied as follows:—

"We have to acknowledge your letter of the 26th inst., but would point out that you appear to have misunderstood our intention in forwarding you the protest in question.

This was sent to you, as head of the Institute, with the object of having the matter thoroughly investigated by the Council of the Royal Institute, and not by you personally (see Clauses 3 and 4 in our letter), and we shall be obliged if you will be good enough to bring the matter before your Council at the earliest moment."

HOSKINS & BROWN
(Court-chambers, Darlington).

KITCHING & LEE
(Houndgate-chambers, Darlington).

W. H. BOURNE, A.R.I.B.A.
(Houndgate-chambers, Darlington).

*** It appears to us that the Competitions Committee (of which the assessor in this competition is a member) have hardly taken the matter seriously enough.—ED.

LIME BURNING.

SIR,—Could any of your readers inform me where illustrations of the most up-to-date and cheapest method of lime burning can be obtained?

L. M. C.

MIDDLESEX COUNTY COUNCIL.

AT the meeting on June 24, the Special Committee appointed in November, 1907, to consider how the property acquired adjoining the Guildhall can be best utilised for county purposes brought up an important report. After pointing out that the present accommodation is totally insufficient for the administration of justice, and the civil business of the county, the Committee went on to say that they had taken the advice of Mr. J. S. Gibson, architect, 5, Old Bond-street, W., on the following points:—(*a*) The maximum space available for building on the new site, having regard to the limitations by the Commissioners of H.M. Works and Public Buildings as regards height on its western side, including any alterations to the existing Guildhall; and (*b*) upon the question of demolishing the existing Guildhall and erecting a new building on its site, plus the new site after the road has been diverted. Mr. Gibson advises that (*a*) the superficial area of the Council-chamber, courts, committee-rooms, and offices, etc., of the existing Guildhall is 17,600 super. ft. This figure is exclusive of the accommodation in the late National Society premises. (*b*) If the present Guildhall be added to, to the greatest extent possible under the limitations of the agreements with the Commissioners of H.M. Works and Public Buildings, the London County Council, and otherwise, the area of the Council-chamber, courts, committee-rooms, offices, etc., would be 33,650 super. ft. (*c*) In the event of an entirely new building being erected on the site of the existing Guildhall and the new site adjoining, similar accommodation could be provided to the extent of 42,230 ft. super., an increase of 8,580 ft. Mr. Gibson estimates in the case of additions to the Guildhall that the cost would be as follows:—Scheme 1 (*a*), if the work on the new site be carried out in brick and stone to match the present design of the Guildhall, 36,000*l.*; (*b*) if the work on the new site be designed in an artistic style of architecture, with some central feature on the east front and the elevation wholly executed in Portland stone, 43,000*l.*; (*c*) if, in addition to (*b*), it is desired to reface the whole of the existing Guildhall with Portland stone, 50,000*l.* Scheme 2, in the case of an entirely new building, the present Guildhall being pulled down:—(*a*) If stone and brick are utilised, the cost would be 85,000*l.*; (*b*) if carried out in Portland stone, the cost is estimated at 90,000*l.* The Committee proceeded to say that whether the Guildhall be now added to or rebuilt to the fullest extent, it will not be possible at any future time to make any further additions to it whatever. In the case of the Guildhall being added to, the accommodation which could be provided would only be about sufficient to meet the present requirements, and, it was to be noted, that the work of the Council is increasing year by year. On the adjustment with London under the Local Government Act, 1888, Middlesex paid to London 20,000*l.*, which, with the Middlesex share in the Guildhall and the Sessions House, Clerkenwell, was taken to represent the value of the Guildhall. In 1892-4, 20,328*l.* was expended in alterations and additions to the Guildhall. Subsequently further additions were made at a cost of 578*l.*, and the cost of the freehold and leasehold in the National Society's premises was 40,735*l.* The Committee, in conclusion, recommended as the most convenient and economical course, and the one most tending towards ultimate efficiency, that the site of the Guildhall with that of the adjoining premises be cleared, and new buildings constructed (Mr. Gibson's Scheme 2). The consideration of the matter was adjourned.

Digitized by Google

Plans, prepared by Mr. Iles, the building foreman, who was the principal clerk of works during the construction of the Napsbury Asylum, were passed for additions to the farm buildings, at an estimated cost of 871*l.*

The Light Railways Committee reported that their chairman had had a conference with the chairman of the Highways Committee of the London County Council with regard to the proposed tramway from Cricklewood to Marble Arch. Middlesex was to construct the line and widen the road from Cricklewood to Nethertonroad, at an estimated cost of 80,000*l.*, and the portion of the line from Netherwood-street to Bridge-terrace was to be constructed by the London County Council, at an estimated cost of 70,000*l.* The principle of the scheme was agreed to by the Council.

The Joint Committee of the County Councils of Middlesex and Surrey were authorised to engage, at a fee not exceeding 200 guineas, the services of a bridge engineer to advise upon the method necessary to be adopted for the purpose of increasing the width of Kingston Bridge to 55 ft.

SCHOOL BUILDING IN LONDON.

A REPORT has been prepared by the Education Committee of the London County Council with reference to the progress of school building in London. Work is proceeding in connexion with the erection of six elementary schools, and the enlargement of three schools, providing a total additional accommodation of 5,576 places, at an estimated cost of 112,152*l.* Five schools are also being structurally improved by the provision of halls, at a cost of 44,786*l.* All these will be opened by the end of the summer.

Two secondary schools in course of erection will be opened in the course of the next few months, namely, at Broomwood-road, Clapham, accommodating 476, and costing 25,919*l.*; and at West-hill, Wandsworth, for 476, and costing 25,852*l.*

Work is proceeding in connexion with the enlargement of the Brixton School of Building, at an estimated cost of 24,996*l.* The Royal Female School of Art, Holborn, is being adapted and renovated as a trade school for girls, at a cost of 4,035*l.* The extension of the Paddington Technical Institute, to cost 7,052*l.*, has been commenced.

Five special schools, accommodating 600, are being built, one is being enlarged, and a laundry centre is in course of erection. The total cost of these works is 29,949*l.*

Divisional offices are being erected at St. John's-hill, Wandsworth, at a cost of 4,340*l.*

Tenders are being invited for schemes of alterations and improvements at three old elementary schools, at a total estimated cost of 32,034*l.* Nine other elementary schools have been selected for structural improvement during the current financial year, at a cost of 60,000*l.* Instructions have been given for the preliminary plans to be prepared, and inquiries are being made, with a view to selecting nine or ten more schools for improvement next year.

A list of minor improvements at various schools is in course of preparation.

WESTMINSTER CITY COUNCIL.

At the fortnightly sitting of the Westminster City Council on Thursday last week, the following, amongst other matters, were dealt with:—

St. James's Park Station.—Plans had been received from the District Railway Company in connexion with the new building proposed to be erected by them at the rear of Caxton Hall. It was agreed to enter into an agreement with the company by which the latter would pay an annual rent of 10*l.* in respect of the easements.

Paving.—The Works Committee, in a report upon the tenders which had been received for paving work (which appear amongst the tenders in another column) said that some of them were for laying certain of the streets with various materials, including mastic asphalt, cork asphalt, and tar macadam. These were proprietary pavements, and would be laid to a specification submitted by the contractors with their tenders. The Committee had come to the conclusion that, having regard to the shallow depth of the proposed proprietary pavings, and the fact that they would be laid directly upon the subsoil and not upon concrete, although much cheaper than wood or asphalt paving, they would not be so advantageous to the Council. The Committee recommended the carrying out of work amounting to 25,553*l.* 12*s.*

Mr. Emden proposed that in the case of the recommendation to repave Belgrave-square, at a cost of 11,345*l.*, the matter be taken back to ascertain the views of the inhabitants, and this was agreed to by the Chairman of the Committee.

A further amendment to lay West Halkin-street with spruce instead of yellow deal was defeated.

Drainage.—It was agreed to allow Mr. R. F. Atkinson, architect, to use impervious granolithic paving instead of asphalt in connexion with the basement walls and floor of No. 11, Great Marlborough-street.

Crown and Sceptre Court.—Permission was given to Sandow, Ltd., to lay mosaic pavement, and to construct pavement lights in the above court.

Dust Destructor.—The Highways Committee reported the receipt of the report of Messrs. May & Hawes, with regard to the dust destructor at Shot Tower Wharf. They gathered from the experts' report that the cost of bringing the destructor up to date, and introducing certain improvements would be very considerable, and consequently they had instructed the Assistant City Engineer to discontinue the use of the destructor for the present.

Master Builders' Associations, etc.

BATH MASTER BUILDERS' ASSOCIATION.

On the 23rd ult. the Bath Master Builders' Association, to the number of seventy, visited Torquay and Paignton on the occasion of their nineteenth annual outing. The party included Mr. F. B. Parsons (President of the Association), Mr. G. Hayward (Vice-President), Mr. J. W. Knight (Mayor of Bath, and an ex-President of the Association), Aldermen C. B. Oliver, A. Taylor, and T. Vincent, Councillors F. Young, Coward, Sydenham, C. Long, F. S. Cotterell, and W. F. Long, and Mr. C. R. Fortune (City Surveyor). The visitors arrived at Torquay Station at 11 a.m., and were welcomed on the platform by several members of the Corporation, the Town Clerk (Mr. F. S. Hex), and the Borough Surveyor (Mr. H. A. Garrett). Mr. F. B. Parsons presided at the luncheon at the Museum Hall.

At the conclusion the Mayor of Bath expressed the Association's warm appreciation of the hospitality that had been extended to them. Commending the enterprise of the Corporation, he said that the fact that the empty houses in the borough averaged only 2 per cent. was striking testimony to their progressiveness. Mr. John Smerdon, replying, and speaking as a builder, said it was a disgrace to Torquay that it did not possess a master builders' association.

The Town Clerk also responded.

In the afternoon the visitors went to Paignton, where they were welcomed by the Chairman of the Urban District Council, Mr. Horace Parnell.

GLASGOW TRADES' COUNCIL.

At a meeting of the Glasgow Trades' Council, held on the 23rd ult., a deputation representing the building trades was appointed to wait upon the Corporation and lodge a complaint against delay in the completion of the new Mitchell Library. It was stated that many trades were idle because work was not being pushed forward as it ought to be. A report was submitted from the Parliamentary Bills Committee with reference to the House Letting Bill. Among suggested amendments were that the Bill should apply to houses of 26*l.* and under, instead of 15*l.* as proposed, and should include all Scotland; also that lets should be limited to one month at the outset.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDEEN.—Public hall, Esplanade, Sea Beach. Mr. J. Rust, architect, 224, Union-street, Aberdeen.

Barking.—The Urban District Council has passed the following plans:—Additional story to the benzine house of the London Butchers' Hide and Skin Company's premises, Creeksmouth; twelve houses, Eastbury-avenue, Mr. W. J. Graffy; seven shops, Ilford-lane, also two houses, Victoria-road, Mr. G. J. Anderson; fourteen houses, Wilmington-gardens, Mr. J. Ranson.

Bont.—County school. Mr. G. Hutchins, architect, Welshpool, Montgomery.

Brentford.—The District Council has passed the following plan:—Four houses, Windmill-roar. Mr. J. Meyers.

Cardiff.—Additions to St. Peter's Roman Catholic School. Mr. F. Bates, architect, Westgate-chambers, Commercial-street, Newport, Mon.

Charlwood (Surrey).—County school. Messrs. Jarvis & Richards, architects, 10, Queen Anne's-gate, S.W.

Cwm.—Chapel (3,000*l.*). Messrs. Habershon & Fawckner, architects, 14, High-street, Cardiff.

Dunoon.—Skating-rink (2,000*l.*). Mr. A. Fountain, architect, Gordon-street, Glasgow.

Glasgow.—Skating-rink (3,000*l.*). Mr. T. Boswell, architect, 53, Bothwell-street, Glasgow

Heston and Isleworth.—The District Council has passed the following plans:—Extension to workshop, Fairfield-road, Hounslow, for the Middlesex Electrical Works; workshop, High-street, Hounslow, Mr. A. J. Blades.

Llanhallian.—County school. Mr. D. P. Jones, architect, Charles-street, Cardiff.

Misley (Birmingham).—Skating-rink. Mr. P. Smith, architect, James Watt-street, Birmingham.

Napsbury.—Additions to farm buildings at asylum (871*l.*). Mr. Iles, Middlesex County Asylum, Napsbury.

Rodmersham.—Large residence (1,100*l.*). Mr. E. C. Pearcy, architect, 2, Crescent-street, Sittingbourne.

Shieldhall.—Brush factory for the Scottish Co-operative Society, Ltd. (2,000*l.*). Mr. J. Davidson, architect, 95, Morrison-street, Glasgow.

Southampton.—Chapel, Holybrook Cemetery, Mr. J. A. Crowther, Engineer, Southampton Town Council; additions to St. Michael's House (2,964*l.*), Messrs. Jenkins & Sons, Ltd., builders, 149, Above-bar, Southampton. The Town Council have passed the following plans: Six houses, Belgrave-road, Mr. C. H. Brightiff; alterations and additions to No. 3, Orchard-lane, Messrs. Poole & Son; ninety houses, Percy-road, Mr. H. Ansell.

Torpoint.—Additions to St. James's Church. Mr. E. Sedding, architect, Queen Anne's-terrace, Tavistock-road, Plymouth.

Weaste (Lancashire).—Church. Messrs. Barker, Ellis, & Jones, architects, 20, Cooper-street, Manchester.

Willington Quay.—Additions to school (1,300*l.*). Mr. W. Forrest, architect, Moot Hall, Newcastle-on-Tyne; Messrs. Johnson & Sons, builders, Suez-street, North Shields.

LONDON AND DISTRICT BOROUGH COUNCILS.

Chelsea.—Mr. Haldane is to be again pressed to state what proposals have been formulated for the utilisation of the site of the Duke of York's School. The Council has received various representations protesting against the erection of barracks.

Deptford.—A sewer is to be relaid in Brockley-road, at an estimated cost of 134*l.*; 446*l.* is to be spent in repairing roads.

East Ham.—The Council have passed plans as follows:—Mr. W. G. Watson, two houses and one shop, Boundary-road; Mr. Cooper, four houses, Dersingham-avenue. Mr. Leadbetter has lodged plans for the erection of eleven houses in Henniker-gardens.

Fulham.—Tenders are to be invited for the paving of Ranelagh-avenue. Alterations are to be carried out at Swan Wharf, Putney Bridge, under the direction of the Borough Surveyor, at an estimated cost of 185*l.*

Hendon.—The following plans have been passed by the Rural District Council:—Mr. S. G. Pailthorpe, five houses, Byron-road, Harrow Weald; Mr. J. C. Henderson, eight houses, Eastcote-road; West End Estate, twelve houses, West End-avenue, Pinner; Mr. W. A. Whittle, ten houses, Barrow Point-avenue. The Watford Land Syndicate has lodged plans for twelve houses in Kingsley-road, Pinner.

Holborn.—The Council have passed a plan lodged by Messrs. Lander, Bedells, & Crompton, on behalf of Messrs. Falk, Stadelmann, & Co., Ltd., to construct subways under Castle-street and Saffron-court, for the purpose of communication between warehouses on either side of those thoroughfares.

Lewisham.—Building plans have been passed as follows:—Mr. James Watt, six houses, Arran-road, and Wesleyan Sunday-school, Rushey-green; Mr. J. Nicholls, four houses, Ewhurst-road; Messrs. A. Black & Son, six houses, Francemary-road; Mr. W. Brenton, eleven houses, Manwood-road; Messrs. Norfolk & Prior, twelve houses, Merchiston-road.

Marylebone.—The carriageways in Abbey-road and Grove End-road are to be recoated with macadam, at an estimated cost of 142*l.* and 185*l.* respectively. Plans have been passed for Mr. C. W. Ferrier, for a building upon the site of Nos. 220 and 222, Great Portland-street.

Stepney.—The Council have passed plans lodged by Mr. G. Waymouth for the erection of a new building adjoining the German Sailors' Home, West India Dock-road, Limehouse, to abut upon Beccles-street.

Walthamstow.—The Engineer has been directed to prepare plans and specifications for the making up of Preston-avenue as a private

Digitized by Google

street. The Fire Brigade Committee have considered a letter from Mr. J. W. Dunford offering to undertake the supervision of the erection of the proposed new fire-station. The offer is to be accepted. The estimated cost of the building is 2,000*l.* The following plans have been approved:—Mr. H. H. Iles, eleven houses, Gordon-avenue; Messrs. W. Tyler & Sons, four houses, Martenroad; Mr. S. W. Robinson, six houses, Studley-road; Mr. H. Brodey, four houses, Pentire-road; also one shop and five houses, Cazenove-road; Mr. H. Prosser, school, Coppermill-lane; British Xylonite Company, two factories, Highams Park; Mr. A. Attwell, factory, Stirling-road; Mr. W. Banks, workshop at 39, Vallentia-road. Messrs. Baird & Tatlock have lodged plans for the erection of a chemical factory at Blackhorse-lane.

Wandsworth.—Tenders are to be invited for paving parts of Headworth-road and Burtop-road. Messrs. E. & E. Iles are to pave portion of Southcroft-road at 971*l.* The Borough Engineer's estimate was 1,084*l.* Mr. E. Wall having withdrawn his tender for paving Rectory-lane, the tender of Messrs. S. Lane & Co., at 4,590*l.*, has been accepted. The Council have passed the following plans:—Messrs. Swain & Selley, two houses, Welham-road, also eight houses, Ribblesdale-road, Streatham; Mr. H. J. Walters, nine houses and one shop, Allfarthing-lane, Fairfield; Mr. W. Bartholomew, motor-house at 232, Balham High-road, Balham; Messrs. Holloway Brothers, twelve houses, Ellerton-road, Springfield; Messrs. W. Mulliner & Sons, two houses, Standen-road, Southfield.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Paddington Divisional Offices.—A vote of 200*l.* was recommended in respect of proposed alterations and repairs at 498, Edgware-road, for the purpose of a divisional office.

Juvenile Swimming-baths.—A communication was received from the Hackney Council, intimating that the Council was considering a proposal for the construction of an additional swimming-bath available for children attending the elementary schools. The bath would have a depth of water of about 3 ft. Would the Education Committee recommend a grant towards the initial expenditure? The Committee regretted that from legal and other standpoints it could not make a grant.

Places of Detention.—The Accommodation Committee reported:—"The Finance Committee have stated that they think it desirable that more complete information should be available as to the condition and suitability of the property from an architectural point of view, and as to the expenditure which will be necessary in regard thereto; that the question of adequacy appears to be one of considerable importance, and that they will be glad if the Education Committee will furnish them with any further particulars which can be obtained as to the number of children for whom accommodation will probably have to be provided. The Finance Committee have pointed out that no mention is made of the establishment of juvenile courts at these places of detention; that it appears to them that the transfer of the property of the Metropolitan Asylums Board to the Council will have to be looked at in this light, as it may not be possible to provide such accommodation in the houses in question without considerable expenditure, and, possibly, loss of effective accommodation; and have asked for the observations of the Education Committee on this point. The Finance Committee also ask that full information may be submitted as to capital liability and maintenance cost, and as to the pension rights of the staff. We would point out that the architect has already suggested that, while the premises in each case have the appearance of being sound, some experience of the working of the Children Act should be obtained before he is required to submit a schedule of alterations; that it is impossible to submit a reliable estimate of the number of children for whom provision will have to be made, as this will depend entirely upon the policy adopted by the magistrates presiding at the children's courts; that, if the existing remand homes are at once taken over by the Council, the experience gained during the first few months will enable the Council to decide as to the provision to be made for future requirements; but that no further information can at this stage be furnished to the Finance Committee as to the adequacy of the homes for the needs of the children who may be committed thereto. As regards the establishment of juvenile courts at the places of detention, we are advised that the cost of adaptation will be approximately as follows:—Harrow-road, 130*l.*; Pentonville-road, 200*l.*; Camberwell-green, 200*l.*; total, 530*l.*; that only the ground floors are affected by the proposed adaptation; that accommodation can be found elsewhere in the homes to replace that absorbed by the children's courts, and that it is not anticipated that the cost of these alterations will fall upon the Council. A report will be submitted direct to the Finance Committee in regard to the capital liability and maintenance cost, and as to the existing pension rights of the staff." It was decided to send this report to the Finance Committee.

Visiting Teachers.—The subjoined appointments were made:—Camberwell School of Arts, Mr. G. Bayes, modelling, 30s. an attendance; Mr. F. J. Fox, plumbing, 7s. 6d.; Central School, Mr. S. B. K. Caulfield, architectural design, 15s.; Westminster Institute, Mr. W. E. Brooks, building construction, 21s.

Purchase of Sites.—Settlements as follows were announced:—Anne's Mission Hall, Pritchard's-road, Bethnal Green, Trustees, leasehold, 400*l.*; 31 and 32, Morpeth-street, and plot of land in rear, Bethnal Green, leasehold, Vice-Admiral A. C. Clarke, 500*l.*

St. Faith's School, Wandsworth.—The Board of Education have approved of the plans for altering and enlarging the school, to accommodate 304 children.

Laundry and Housewifery Centres, Limehouse.—For these the tender of Mr. T. D. Lang, 1,728*l.*, was recommended. The architect's estimate was 1,857*l.*

Manual Training Centre, Roman-road, Bow.—The tender of Messrs. J. & C. Bowyer, 1,296*l.*, was recommended. Architect's estimate, 1,360*l.*

Staircases, Farrance-street, Limehouse.—The tender of Mr. T. D. Leng, 2,183*l.*, was recommended. Architect's estimate, 2,355*l.*

New and Enlarged Schools.—In view of the need for accommodation, it was decided that the Chairman of Committee should accept the tenders in respect to a school for physically defective at Norwood, and the enlargement of the Amberley-road and Essendene-road, Paddington schools. The estimates of the cost of the works total 38,807*l.*

Domestic Economy Centre.—With reference to the purchase of land adjoining a school, locality not stated, a supplemental vote of 3,168*l.* was passed for the provision of a domestic economy centre and the adaptation of land as a playground.

Staircases, etc.—Sanction was given for additional internal staircases and other improvements in order to ensure safety, at the following schools:—High-street, Bow, 160*l.*; Southampton-street, Camberwell, 185*l.*; Berger-road, Hackney, 60*l.*; Maidstone-street, Haggerston, 450*l.*; Scafell-street, Haggerston, 210*l.*; The Fox, Kensington, 280*l.*; Campbell-street, Paddington, 230*l.*; Arthur-street, Peckham, 150*l.*; Netley-street, St. Pancras, 375*l.*

Heating.—The tender of Messrs. Pemberton, Arber, & Carey, 280*l.* 16s., was recommended for heating at Scafell-street, Haggerston.

Electric Lighting, Oliver Goldsmith, Camberwell.—The resolution to accept the tender of Messrs. Grant & Blake, 142*l.*, was rescinded, the Committee, on reconsideration, being of opinion that the lowest should be accepted, namely, that of Messrs. R. Bridger & Co., 135*l.* 8s.

Heating Works.—Tenders as follows were accepted for heating works:—

Fulham: Munster-road.—R. H. & J. Pearson, Ltd.	£59	10	0
Haggerston: Gopsall-street.—H. J. Cash & Co.	151	0	0
Islington, S.: Thornhill-road.—T. S. Knight & Sons	197	7	0
Poplar: The "Millwall."—J. & F. May	160	10	0
Woolwich: Conway-road.—T. S. Knight & Sons	278	0	0

External Iron Staircases. External iron staircases were sanctioned as follows:—George-street (Camberwell, N.), 95*l.*; Leipsic-road (Camberwell, N.), 350*l.*; Harwood-road (Fulham), 160*l.*; Redvers-street (Hoxton), 290*l.*; Fortess-road (St. Pancras, N.), 95*l.*; Horseferry-road (Westminster), 360*l.*

Surrey-lane School, Battersea.—It was agreed that certain entrance doors be widened, and a wall removed and iron railing substituted, at a cost of 150*l.*

Stanley-street, Deptford.—It was decided to build a cloakroom, at a cost of 185*l.*

Shelters.—These are to be provided at Frankham-street, Deptford, 95*l.*, and at Alexis-street, Bermondsey, 108*l.*

CONGREGATIONAL CHURCH, HINDLEY.—Work will shortly be commenced on the erection of the new St. Paul's Congregational Church, Hindley. Mr. Herbert Wade, of Blackpool, is the architect, and Mr. J. Cocker, of Walkden, the contractor for the work, the estimated cost of which is 3,000*l.*

Obituary.

MR. C. P. ROBERTS.

The death took place at Eastbourne, on the 24th ult., of Mr. Charles Philip Roberts, formerly head of the firm of Messrs. C. P. Roberts & Co., builders and contractors, of St. Paul's-road, Canonbury, and father of the present chief of the firm. The deceased gentleman, who was 62 years of age, and was well known and highly esteemed throughout the trade, had been in bad health for some time, though his death came rather suddenly at the end. The remains were cremated at Golder's Green on Tuesday, after a choral service, largely attended, at Unity Church, Upper-street, N.

General Building News.

CHURCH RENOVATION, BELFAST.

The Great Victoria-street Church at Belfast has undergone a complete scheme of renovation. The general contractors for the work were Messrs. T. & W. Lowry, while Mr. R. J. Larmour executed the painting; the electric lighting was entrusted to Messrs. J. Dowling & Sons, under the direction of Mr. F. W. Parkinson; the windows were the work of Messrs. Campbell Brothers; and Messrs. W. D. Henderson & Co. supplied the ceramic mosaic. Messrs. Young & Mackenzie were the architects.

PROPOSED CHURCH, HALIFAX.

Funds are being collected for a new church and schools proposed to be built at King Cross, Halifax. The probable total cost of the scheme will be 15,000*l.*, 10,000*l.* being devoted to the church, and the remaining amount to the schools. Messrs. Nicholson & Corlette have been apponted architects to the work.

PARISH CHURCH, WINCHELSEA.

A fund is open for the proposed restoration of the church of St. Thomas the Apostle, Winchelsea. The fabric consists of the choir of XIIIth-XIVth century cruciform church, which contains several interesting tombs of the Alards, earliest admirals of the Cinque Ports, with some cross-legged effigies of armoured knights. The estimated cost of the work amounts to 5,000*l.*

CHURCH RESTORATION, HANHAM ABBOTS.

The ancient church of St. George, adjoining Hanham Court, and known as Hanham Abbots, has just been reopened after renovation. The work was designed by Mr. Bligh Bond, and carried out by Messrs. T. Lovell & Son.

WORCESTER COLLEGE, OXFORD.

Upon an examination of the fabric made by Mr. Edward P. Warren it was found that the cornice of the chapel, built in 1784, of Worcester College, evinces defective construction and masonry. A portion of the heavy cornice on the north side of the chapel fell down eighteen months ago. With a projection of 2 ft. 4 in., there is but 9 in. embedded in the wall. The college authorities have expended 5,700*l.* upon the work of reparation, and they anticipate that its completion will cost 1,300*l.* more.

GRAMMAR SCHOOL BUILDINGS, NEWARK.

Additions have been made to the Magnus Grammar School, Newark. The new premises provide for 150 boys, including thirty boarders. There are classrooms, art-rooms, chemical laboratory, physical laboratory and lecture-room, headmaster's residence, and at one end of the building in an isolated position a sick-room is situated; adjoining the schools are the playing fields. The architects are Messrs. Sheppard & Lockton, of Newark, and the builders Messrs. Brown & Son, Newark. The estimated cost of the work is 16,000*l.*

NATIONAL SCHOOLS, DUBLIN.

New buildings have been erected as an enlargement of the Howth-road National Schools, Dublin. The work was carried out by Messrs. G. W. Scott & Co., Dublin, from the plans furnished by the Commissioners of National Education, at a cost of about 1,000*l.*

PROPOSED ADDITIONS TO THE HAMPSHIRE COUNTY COUNCIL OFFICES.

The Hampshire County Council have applied to the Local Government Board for consent to the borrowing of 20,000*l.* for the provision of additional offices at the corner of Castle-avenue and St. James'-street, Winchester. Mr. E. A. Sandford Fawcett, M.Inst.C.E., Inspector, held an inquiry into the proposal. Mr. W. J. Taylor, County Surveyor, describing his plan for the additional office accommodation, said that there would be a total of fifty-two apartments of one kind and another.

Digitized by Google

SALVATION ARMY BUILDINGS, KIRKCALDY.

A Salvation Army "Citadel" has been built at Kirkcaldy. The building was designed and has been erected from plans by Mr. W. Dow, architect, Kirkcaldy. The successful contractors for the work were:—Mason, Messrs. Wright & Rockie; joiner, Mr. David Simpson; plumber, Mr. Jas. Blyth; plasterer, Mr. Wm. Grant; slater, Mr. Wm. Currie; glaziers, Messrs. James Haxton & Co., of Kirkcaldy.

Y.M.C.A. HEADQUARTERS, TOTTENHAM COURT-ROAD.

The new headquarters of the Central Young Men's Christian Association are to be built on a site on the east side of Tottenham Court-road, bounded on the south by Great Russell-street, on the north by Bedford-avenue, and on the east by Caroline-street. It forms a self-contained block with frontages on each side, and has a total area of 28,124 sq. ft. The building will contain a club for 10,000 young men, a business men's college, a residential home, a school of Bible study, gymnasium and swimming-bath, as well as a junior section. Mr. Rowland Plumbe is the architect.

MASONIC HALL, CHESTER.

A new hall is being erected by the Freemasons of this city. The building, which will cost 3,000*l.*, has been designed by Mr. Arthur F. Davies (Messrs. J. H. Davies & Sons), and the tender for the building fell to Mr. W. M'Lellan (Messrs. M'Lellan Brothers).

BRANCH LIBRARY, SUNDERLAND.

The new West End branch library at Sunderland will shortly be opened. The total cost is about 3,000*l.* The architect is Mr. Hugh Hedley. Mr. W. B. Cooper is the contractor.

CONVALESCENT HOME, WORTHING.

A convalescent home has been built at Worthing in connexion with the Royal Surrey County Hospital. Mr. E. L. Lunn, architect, Guildford, prepared the plans.

EXTENSION OF THE BRISTOL ASYLUM.

The new wing on the male patients' side of the Bristol Lunatic Asylum is now completed. The design is in harmony with the other buildings, the material used being pennant stone, with Bath stone dressings. The building work has been carried out by Mr. A. J. Colborne, of Swindon, according to plans of Mr. Peter Addie, the City Valuer, etc. The contract for the building amounted to 12,499*l.*

BANKING OFFICES, MAIDSTONE.

New premises are to be built on a site in High-street, Maidstone, for the London and County Banking Company. The architect is Mr. W. Campbell Jones, London, and the contract for the building has been secured by Messrs. G. E. Wallis & Sons, Ltd., of Maidstone.

THE "DUTCH HOUSE," BRISTOL.

This old Bristol building, which dates back to the Jacobean period, has recently been restored under the direction of Mr. W. S. Skinner, architect. The building had a narrow escape from destruction, as it was only by very small majorities that the Town Council—who had become owners in order that they might carry out a street improvement—decided upon retention. And those majorities would not have been secured but for the strong support given by the Bristol and Gloucestershire Archæological Society, the Bristol Society of Architects, the Bristol Kyrle Society, the Society of Antiquaries, and the National Trust. The problem of widening the street and at the same time retaining the old building has been solved by setting back the ground floor frontage, and supporting the superstructure with steel girders. By this means some 10 ft. have been added to the thoroughfare.

CITY AND MIDLAND BANK.

Messrs. Waring & White write:—"We notice in your issue of the 26th ult. that on page 767, under the heading of 'Trade News,' you mention that the London City and Midland Bank are putting up a branch at the corner of New Bond-street, and that the builders are Messrs. Waring & Gillow, Oxford-street. Kindly note that we, and not Messrs. Waring & Gillow, Ltd., have been entrusted with this work." We printed the information as furnished to us, and regret that it was incorrect.

L. & S.W.R. SERVANTS' ORPHANAGE, WOKING.

The new L. & S.W.R. Servants' Orphanage stands on a site adjoining the main line at Woking of 7½ acres. It is built of red brick and stone, the central portion being entirely of stone. It is 220 ft. wide, with two wings running back a distance of 128 ft., and will accommodate 150 children. The whole construction of the building, which is lighted by electricity, is as fireproof as possible. The walls throughout are decorated with "Duresco," and all the interior woodwork is enamelled. Mr. W. E. Trevena, of Farnborough, was the architect, and Mr. E. C. Hughes, Wokingham, the builder. The total cost, including equipment, will be about 24,000*l.*

NURSES' HOME, BATH.

Additions in the form of a nurses' home and out-patients' department have been made to the Bath Royal United Hospital. The new building, which will have cost 4,000*l.* by the time it is completely furnished, was designed by Mr. E. Keene Oliver, architect, the execution of the work being in the hands of Mr. Blackmore, contractor.

CITY HALL, PERTH.

The memorial-stone of the new City Hall, Perth, was laid on the 20th ult. The new building consists of a large hall, with accommodation for 2,000 persons, and a smaller hall at the back capable of holding 500 people. It is estimated to cost about 30,000*l.* Mr. E. Clifford, of Glasgow, is responsible for the plans.

NEW BUILDINGS IN ABERDEEN.

Plans for the following new buildings have been passed:—Four dwelling-houses on the north side of Albury-road, per Messrs. D. & J. R. M'Millan, architects; addition at rear of dwelling-house, No. 99, Fountainhall-road, for Mr. George Bisset, blacksmith; granite-polishing mill on the north side of Merkland-road East, for Messrs. Cosgrove, Lindsay, & Lawrie, granite merchants, per Mr. John Paterson, builder; four dwelling-houses on the east side of Woodstock-road, for Mr. Joseph Shirras, builder, per Mr. Arthur C. Bruce, architect; alterations in connexion with premises, No. 244, Union-street, for Mr. T. R. Gillies, advocate, per Messrs. Wilsons & Walker, architects; two dwelling-houses on the north side of Mid Stocket-road, for Mr. William J. Mills, merchant, per Mr. George Milne, architect; addition to Gilcomston Mills, Leadside-road, for Messrs. John Stracnan & Sons, grain merchants, per Mr. Gordon Forbes, engineer; business premises on the east side of Crown-street, for the Prudential Assurance Company, Ltd., per Messrs. Sutherland & George, architects.

NEW KENNINGTON HALL.

Lady Beachcroft opened on Wednesday a new hall for the Kennington Sunday-school Mission at Stannary-street, Kennington. The hall and the site cost 2,500*l.*, and Mr. F. Warman acted as hon. architect. The Mission, it is interesting to relate, was inaugurated as long ago as 1806.

Appointments.

BRITISH SCHOOL, ROME.

The Committee of Management have appointed Mrs. S. Arthur Strong to the Assistant Directorship vacated by Mr. A. H. S. Yeames, who will return to this country for archæological work in the Ashmolean Museum. Mrs. Strong has rendered signal services in the study of ancient art as both archæologist and critic, particularly in respect of her English editions of standard foreign books and of her eminent share in the promotion of the Burlington Fine Arts Club Exhibition, six year ago, of ancient Greek art.

BRITISH SCHOOL, ATHENS.

Mr. Sidney William Grose, scholar of Christ's College, Cambridge, has been nominated by the Vice-Chancellor to a studentship at the British School in Athens.

BOROUGH OF WEST HAM.

Mr. H. H. Couzens, A.M.Inst.E.E., Deputy Electrical Engineer of Bristol, has been appointed, with a salary of 500*l.*-700*l.* per annum, Chief Electrical Engineer of West Ham Borough, *vice* Mr. A. H. Seabrook, recently appointed to Marylebone.

Sanitary and Engineering News.

SOUTHEND-ON-SEA SEWAGE WORKS.

On Thursday the Bill promoted by the Corporation of Southend-on-Sea for the acquisition of land and the construction of sewage works, at an estimated cost of 160,000*l.*, came before Mr. Emmott's Committee, when Sir Alexander Binnie gave evidence in support of the scheme. The only question in dispute was as to the periods to be allowed for the repayments of loans, and the Committee fixed fifty years for the main sewer and fifteen years for the minor sewer.

STANDARDISATION OF STONEWARE PIPES.

The Council of the Royal Sanitary Institute have appointed Mr. Henry Adams, M.Inst.C.E., F.S.I., etc., to represent the Institute at the conference which is being organised by the Engineering Standards Committee to consider the desirability of a standard being adopted for stoneware, fireclay, and other similar pipes.

THE ROYAL SANITARY INSTITUTE.

At an Examination in Sanitary Science as Applied to Buildings and Public Works, held at Manchester on June 25 and 26, 1909, five candidates presented themselves, and the following three were granted certificates:—J. W. Beaumont (Huddersfield); H. E. Routledge (Ramsden); W. H. Tillotson (Burnley).

Stained Glass & Decoration.

CHURCH OF ST. ALBAN, HOLBORN.

A font cover, designed by Mr. J. Ninian Comper, has been presented to the church in commemoration of the twenty-fifth year of the incumbency of the present vicar, the Rev. R. A. J. Suckling.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Mr. Eustace C. Frere, architect, has removed his office from No. 61 to No. 1, Lincoln's Inn-fields, W.C.

GREENOCK CORPORATION BILL.

Mr. C. N. Nicholson's Committee of the House of Commons has passed the preamble of the above Bill. Amongst other matters dealt with a loan of 20,000*l.* is allowed for the erection of a dust destructor, and such sum as may be approved by the Secretary for Scotland for the erection of baths and washhouses.

LONDON COUNTY COUNCIL TRAMWAYS AND IMPROVEMENTS.

Sir Geo. Doughty's Committee of the House of Commons, which has passed the preamble of the London County Council Tramways and Improvements Bill, points out that it is proposed to take away part of Well-street Common, Deptford, Waterlow Park, and Hackney Marsh, which are common lands. In the first two cases they think no material difference to their value as open spaces is likely to occur. In the third case a new street will divide Hackney Marsh into two portions, but access between the severed portions will not be interrupted. The new street is to form an approach to a new bridge over the waterworks river, and they consider that the interference is in the general interests of the public.

QUARRYING ON AN OLD ROMAN CAMP.

In the Parliamentary Papers recently, Mr. Llewelyn Williams asks the Prime Minister whether he is aware that the great prehistoric camp called Pen Dinas, situated on the summit of Penmaenmawr, is in course of destruction by quarrying operations; whether the Commissioners of Woods and Forests have leased the mountain, including the site of the camp, to a firm of quarry workers without reservation of the land occupied by the ancient camp, or any conditions for its scientific exploration during its gradual destruction; and whether the Royal Commission now inquiring into the ancient monuments of Wales are authorised to report fully and illustratively upon this and all similar cases.—Mr. Asquith replies that the Commissioners of Woods inform him that within the limits of the quarry area at Penmaenmawr leased by them are what are considered to be the remains of a Roman camp. It is a fact that the site of these remains is not reserved, and that there are no specific conditions in the lease providing for its scientific exploration, but the lessees do not propose to disturb the actual camp, and no doubt arrangements for its exploration could be made on application from a responsible body. He understands that part of an old road is being destroyed by the development of the quarry; but, as the undertaking gives employment to 600 men, I do not think that the Commissioners of Woods would be warranted in interfering on this point even if they had the power to do so.

CARDIFF WATER.

Mr. C. Nicholson's Committee of the House of Commons has passed the preamble of the Cardiff Corporation Bill, which authorises the local authority to construct waterworks and make further provision for the supply of water to the City. Under the powers granted, it is proposed to spend 272,000*l.*

Digitized by Google

LIVERPOOL IMPROVEMENTS.

By the Liverpool Corporation Bill, which has been approved by Mr. Mooney's Committee of the House of Commons, a number of new tramways will be constructed, and 30,000*l.* is to be spent on new streets and widenings. The proposals include a new street in the parish of Wavertree in continuation of Queen's-drive, and the widening of Childwall Priory-road.

MEMORIAL TO CONSTANT COQUELIN.

Mr. Gilbert Bayes is engaged upon the memorial which English actors and actresses will present to the Comédie Française in honour of Coquelin *aîné*, who was Sociétaire, 1864-87. The composition consists of a bronze shrine, 3 ft. 6 in. high, in Greek style, in which stands a gilded figure of "Fame," the back of the shrine being inscribed with the names of principal characters represented by Coquelin.

THE CLIVE MEMORIAL.

Mr. John Tweed has been unanimously chosen by the Clive Memorial Committee as sculptor of the bronze statue which will be set up on the new stairway at the park end of Charles-street, Whitehall, and of the marble statue for the Victoria Memorial Hall in Calcutta.

ADMIRALTY PLUMBERS.

Answering a question by Sir John Benn in the Parliamentary Papers as to naval plumbers and plumbers' mates not having received any advance of pay since 1867, whereas during the same period several advances have been granted to the plumbers in the Royal Dockyards, Mr. M'Kenna states that the Admiralty remain of opinion that there is no reason for reconsidering the position and pay of men holding plumbers' ratings in the Royal Navy. No real comparison could be made between his scale of pay and the wages of the civilian workmen in the dockyard.

COAL SMOKE ABATEMENT SOCIETY.

The annual meeting of this Society was held on the 25th ult. at the Royal United Service Institution, Whitehall, Sir W. B. Richmond, R.A., President, occupying the chair. The Chairman, in moving the adoption of the report, said that Westminster Abbey had suffered from more rapid decay in the last hundred years than any that had occurred in the whole of its previous history. So serious had this decay become that an authority of the Abbey had approached the Society. A report furnished to them by Dr. Owens was the result of that gentleman's preliminary investigations. Personally he (Sir William Richmond) had many times visited the Abbey and could endorse all that the report stated, although he had no pretension to more than a very superficial knowledge of even the simpler departments of chemistry. The Society hoped to carry the investigations much further by means of a special committee of distinguished experts, whose report would be put before the members in due course. The report showed that repairs executed only from twenty to thirty years ago were more or less, and those of the south transept and parapet badly, decayed. Work executed only fourteen years ago was in a bad state, and that done in 1701 showed signs of being reduced to a friable mass to a considerable depth below the surface. That this decay was the result of acids deposited by smoke and otherwise there could be no doubt whatever. The chief cause of the destruction of the stone had been shown to be the presence in the air of sulphur acids; the stone was converted into sulphate of lime, and in the process of its formation this disintegrated the stone by expansion. The connexion between smoke and stone decay appeared to be invisible gasses emitted from the smoke particles. It was now known that soot particles, although not in themselves injurious, acted as absorbents for the sulphurous acid produced from the sulphur in burning coal. The soot, therefore, was a vehicle for destruction, although not in itself a destroyer. Another connecting link between stone decay and smoke was fog, in which the solid matter of the smoke played an important part. The chief points in connexion with the preservation of the Abbey where the work of the Society might be of value appeared to him to be in reducing the amount of solid soot deposited on the stonework, and therefore the amount of sulphuric acid caused by it; in reducing the frequency of black fogs, during which the corrosive properties of the air were greatly increased; in encouraging the burning of fuels which contained little sulphur, and which at the same time produced no smoke—or the extended use of electricity; and in encouraging the greatest possible care to reduce sulphur in coke, coalite, carbo, and other fuels. At a later stage of the proceedings Dr. Owens produced a sample of stone which he said he had simply "lifted" off the south parapet. It had been up twenty or twenty-five years, and was being converted into powder. The rapidity of the decay seemed to have increased very much during recent years, probably owing to the enormous growth in the consumption of coal. The Abbey had decayed all over. Most of the outer stone used in the old structure had had to be replaced. He found some places where the original stone had deteriorated to the extent of 9 in. It was only by continual renewals that the structure was kept standing.—*Times.*

PROPOSED GAINSBOROUGH MEMORIAL.

A committee has been formed to promote a national memorial to Gainsborough. The original scheme was limited to the county of Suffolk, but the interest taken was so great that on May 28 a meeting held at the House of Commons determined to make a general appeal for funds. A committee was formed, with the Marquis of Bristol as chairman, and has held two meetings. The committee ascertained that a statue by one of the best artists would cost 2,000*l.* It is proposed to erect the statue in Sudbury, Gainsborough's native town.

BISHOP ELLICOTT MEMORIAL, GLOUCESTER CATHEDRAL.

The monument to the late Bishop Ellicott, for forty-two years Bishop, first of Gloucester and Bristol, and then of Gloucester after the separation of the united sees, was unveiled on the 19th ult. in Gloucester Cathedral. The monument has been placed in the south ambulatory, and is the design of Mr. W. S. Frith, of Chelsea. It consists of an altar tomb, which takes the form of a cenotaph tomb. At the top of the altar tomb is the recumbent effigy. The figure is executed in a faultless block of Greek marble. The head rests on the cross, in the four spaces of which are the emblems of the Evangelists, who in their turn are surmounted by the heavenly host. The altar portion is of carefully-selected Derbyshire alabaster, and has been executed and fixed by Mr. H. C. Frith, sculptor, of Gloucester, from the models of his brother.

A SIMPLE FIRE EXTINGUISHER.

We have received a specimen of the "Perfection" fire extinguisher from Messrs. Frank Walker & Co., of London. This is one of those forms of extinguisher in which acid acts upon a solution of sodium bicarbonate when the extinguisher is turned upside down, and the extinguishing liquid is ejected from a metal nozzle attached to a flexible pipe. These extinguishers are very useful for extinguishing small fires, and the fact that the solution is ejected under considerable pressure enables the operator to extinguish an overhead fire, such as is afforded by flaming curtains, more easily than with buckets of water. The "Perfection" extinguisher is of very simple design, and is constructed without cocks or valves, so that it is not likely to get out of order.

FURTHER POWERS FOR THE LONDON COUNTY COUNCIL.

Sir F. Leyland Barrett's Committee of the House of Commons has passed the preamble of the London County Council General Powers Bill as apart from Part V., dealing with buildings. By the Bill the Council will be empowered to discharge storm water into the Channelsea River and Abbey Creek, West Ham, so as to avoid the flooding of low-lying land on the north side of the Thames, and to extend the time for the completion of the works of the Thames Embankment extension, and the improvements at Westminster. The Southwark Borough Council is empowered to construct a subway at the Elephant and Castle, and the Kensington Borough Council to make up the lane from the northern end of Cottage-place, Brompton-road. The only opposition to the Bill came from the West Ham Corporation, who feared that a nuisance would arise from the discharge of storm water. The Chairman, however, in granting the clause, said the Committee were certain, from their knowledge of the manner in which the County Council had carried out the sewage work of London, they would take the greatest precautions to prevent any nuisance.

VANDALISM IN ORLEANS.

Great indignation is being felt in Orleans at the Municipality's avowed intention of pulling down the house occupied in 1429 by Jeanne Darc. This decorative house, standing in the Rue du Tabour, was built in 1425 by one Jacques Boucher, and, apart from its historic associations, its very antiquity should safeguard it, for an authentic XVth century dwelling-house is a monument to be treasured. The Municipality contends that the narrowness of the street interferes with the traffic, but this inconvenience, if it exists, has not as yet been borne in on the inhabitants and visitors. The searching eyes of municipal councillors have alone detected the shortcomings. In the opinion of such bodies, one knows well, that the real beauty of a town does not consist in the collection of ancient buildings of historic and æsthetic importance, but in the straightness and width of its thoroughfares. As a concession to crazy archæologists, the Municipality proposes taking down the house piecemeal and rebuilding it on a more suitable site. Americans, we know, make light of such undertakings, and rightly so, for the houses they take down and put up again might just as well stand there as here, perhaps even better, for naught connects them with any particular site. But with relics of the past the case is different, and altered surroundings destroy associations. A simpler expedient for widening the street would have been to set back the houses on one side alone, but this would not have met the whole case. The Rue du Tabour, unfortunately, falls short of the ideal of a modern street, *i.e.*, one cannot take in its whole length at a glance. Our ancestors, who lacked all æsthetic feeling, built winding streets and took pleasure in thus opening up successive and varied vistas. But quite apart even from the æsthetic point of view, in the interests of economics, the street must be straightened, for consider what time is lost—time which is so especially valuable in Orleans in following the tortuous course of an ancient thoroughfare.

LITTLE PORTLAND-STREET CHAPEL.

The Unitarian chapel in Little Portland-street, W., has been closed, the congregation having resolved to dispose of the lease and to build a large chapel upon a more central and convenient site in London. The chapel was built in 1833 for a congregation which Mr. Agar had established, in 1824, in a proprietary chapel in York-street, St. James's, and which since the migration, a few years ago, of the Essex-street, Strand, Chapel—founded by Theophilus Lindsey and Joseph Priestley in 1774—to Essex Church, in the Mall, Kensington, is, we believe, the only remaining congregation of Unitarians in Central London. The interior of Little Portland-street Chapel was improved and redecorated in 1900, at a cost of 1,000*l.*, by Messrs. Shoolbred & Co., under the direction and supervision of Mr. Edward Martineau. In February, 1903, was erected the memorial to the late James Martineau, who was minister in 1858-1872, and died on January 11, 1900. The memorial, sculptured in white marble, and designed by Mr. Hope Pinker, embodies a bas-relief with a profile view of part of Mr Hope Pinker's seated statue of Dr. Martineau, 1898, executed for the library of Manchester College, Oxford.

INTERNATIONAL RAILWAY AND TRANSPORT EXHIBITION, BUENOS AIRES.

As a number of communications have been received from Europe, asking for an extension of time in favour of applicants for admission to the exhibition, to be held by the Argentine Republic from May to November, 1910, the Executive Committee consider it advisable to act in accordance with this suggestion. It has accordingly been decided that applications for show room may be made, in Buenos Aires, up to September 10 next, and, to the delegates abroad, up to August 10 next. The date for applying for erection of special kiosks has also been postponed up to July 25 next.

CARRARA MARBLE.

A return presented to the Foreign Office gives details of the quantities and description of marble exported from Carrara during the years 1906-08, and the countries to which it is exported. The total quantity exported in 1908 was:—To the United States, 47,431 tons; to United Kingdom, 33,474 tons; Belgium, 30,439 tons; France, 21,824 tons; Germany, 27,945 tons; Argentina, 15,870 tons; Austria Hungary, 10,072 tons; Egypt, 7,028 tons; Netherlands, 6,263 tons; Brazil, 5,472 tons; Spain, 5,234 tons; Switzerland, 4,539 tons; Tunis, 2,519 tons; Russia, 2,440 tons; British India, 2,229 tons; Turkey, 2,137 tons; Australia, 1,719 tons; and other countries, 17,986 tons; total 244,621 tons. Of this 155,398 tons was in the rough, 72,903 tons in slabs, and 16,320 tons otherwise worked.

THORNEY ESTATE, CAMBRIDGESHIRE.

It is announced that the Duke of Bedford has privately disposed of nearly all his agricultural property in and around Thorney, in the Isle of Ely, of which a few historical particulars were given in our columns of February 27. The tenants, to the number of some 220, have become the purchasers of the 19,000 acres at prices which yield an average of 40*l.* per acre, as compared with the 37*l.* per acre which, it is understood, the Government proposed to offer for 12,000 acres, upon a survey made on behalf of the Commissioners of Woods and Forests and an estimate made by Mr. Carter Jonas, Crown Valuer. At the same time the Duke of Bedford agreed to help his

Digitized by Google

tenants in the purchase of their holdings by allowing two-thirds of the moneys to remain upon mortgage at 4 per cent. interest. In many instances the occupiers, descendants of Walloon and French *émigrés*, represent families who have tilled the farms for several generations. The nave of the Benedictine abbey church, rebuilt in the earlier half of the XIIth century, and dedicated to Mary the Virgin, will, we gather, be committed to the Bishopric of Ely.

Capital and Labour.

STATE OF EMPLOYMENT IN THE BUILDING TRADES.

Employment in May was slack generally, except with painters, who were fairly well employed. It was better than a month ago, and showed little change on the whole compared with a year ago. The percentage of trade union carpenters and joiners unemployed at the end of May was 8·8, as compared with 11·0 a month ago and 9·1 a year ago; and for plumbers, at the same dates, the percentages were 14·1, 14·0, and 14·3 respectively. In the case of carpenters and joiners the percentage unemployed showed a decline in every district as compared with a month ago, and in nearly every district as compared with a year ago. Returns received from bricklayers, masons, plasterers, and labourers' unions also report an improvement as compared with a month ago. For London the trade union returns show that 9·2 per cent. of carpenters and joiners were unemployed at the end of May, as compared with 10·3 a month ago and 13·4 a year ago; the corresponding percentages for plumbers were 17·1, 11·7, and 16·2. The general percentages were usually exceeded in the Northern Counties and Scotland, where many of the trade union members are engaged in the shipbuilding industry. In Yorkshire and in the Lancashire and Cheshire, Midland, and Southern districts the percentages were usually below those quoted. Returns received from 688 firms employing 40,890 workpeople at the end of May show that, compared with a month ago, there was a decrease of 10·7 per cent. in the total number employed by them in London, and an increase of 3·6 per cent. in the provinces. Compared with a year ago there were decreases of 8·3 per cent. in London, and of 11·5 per cent. in the provinces.—*Board of Trade Labour Gazette.*

Law Reports.

CONTRACTORS' CLAIM AGAINST ARCHITECT.

THE case of Bankart *v.* John Tanner & Sons last week came before Mr. Muir Mackenzie, the Official Referee, upon the trial of the defendants' counterclaim.

In this case the plaintiff, Mr. George Percy Bankart, an architect and decorative draughtsman, of Baldwin-gardens, Gray's Inn-road, brought the action against the defendants, Messrs. John Tanner & Sons, plastering contractors, of Liverpool and Birkbeck Bank-chambers, Chancery-lane, for 1,000*l.* for work done, and judgment was given for the plaintiff for that amount, subject to the decision on the defendants' counterclaim, by which Messrs. Tanner & Sons claimed damages against Mr. Bankart for the detention of certain scaffolding used in relation to the decoration of the Victoria and Albert Museum, South Kensington.

Mr. Radcliffe, K.C., and Mr. Franke appeared for Mr. Bankart; and Mr. F. A. Greer and Mr. Adair Roche for Messrs. Tanner.

Mr. Greer, in opening the counterclaim, said that Messrs. Tanner had contracted with the Commissioners to do the whole of the plastering work of the Victoria and Albert Museum, and the contract contained a provision that certain of the enrichments and more elaborate portions of the work should be done by the Bromsgrove Guild. At the time the contract was entered into Mr. Bankart was a member of the Guild, and was employed on this special work, but Mr. Bankart subsequently severed his connexion with the Guild, and at that time a question arose to to whether he, not being a member of the Guild, should do the work. After a long correspondence with the architect, Sir Aston Webb, it was settled that the work should be divided between Mr. Bankart and Messrs. Tanner & Sons, and that the former was to use the latter's scaffolding so as to do his share; but, said counsel, Mr. Bankart was under an obligation not to delay Messrs. Tanner in their work. Messrs. Tanner's case was that this obligation had not been fulfilled, and it was the cost to which Messrs. Tanner had been put by Mr. Bankart detaining their scaffolding beyond the time when they had finished their share of the work for which they were claiming damages. Messrs. Tanner's claim was increasing daily, because the scaffolding still remained standing for Mr. Bankart to finish his work. Mr. Bankart, however, claimed that his agreement with Sir Aston Webb permitted him to use the scaffolding. The learned counsel said that, put shortly, his case was that Mr. Bankart was bound by contract to do this work concurrently with Messrs. Tanner, and if he could not do it he was responsible for the use of the scaffolding, and was not protected by the fact that the architect had given him his orders too late for him to do this. It was no answer to Messrs. Tanner's claim that Mr. Bankart's models had not been passed, or that the work was done under Sir Aston Webb's direction, those being the suggestions contained in the correspondence. It was attempted to suggest that there was no contract between the parties; but if that was so, then Mr. Bankart ought to pay more, because then he had no right to use the scaffolding at all.

Evidence was then given in support of counsel's opening statement, and as to the cost of the scaffolding materials used, and the dates when the different portions of work were concluded.

At the close of the defendants' evidence on their counterclaim, Mr. Radcliffe opened the case on behalf of Mr. Bankart. The learned counsel having referred to the clause in the contract about doing work concurrently, said this applied only to the fixing and casting, but obviously not to the preliminary studio work of modelling. The drawings supplied to Mr. Bankart in some cases indicated the nature of the enrichments, but in many cases a blue marking showing where an enrichment was to be made was all that was there. Mr. Bankart would then make drawings of clay models, and Sir Aston Webb would then discuss the models and agree to alterations. Then a sample casting would be produced, and possibly that would not be considered satisfactory, when the whole process would have to be repeated. Sometimes, especially in the dome, the models had to be altered seven or eight times, and fogs had also prevented the models being seen when they were in their place. Substantially all the delay took place before the models were finally approved. As soon as the models were approved the casting was comparatively a small matter, and Mr. Bankart had followed closely on the heels of Messrs. Tanner in his work of fixing. No doubt Messrs. Tanner had suffered damage, but their claim was against the Commissioners; they had no claim against Mr. Bankart. The learned counsel submitted that the motive of this claim was to prevent Mr. Bankart receiving payment.

Mr. Bankart then gave evidence in support of his case, and the hearing was adjourned *sine die.*

WEST-END ANCIENT LIGHT DISPUTE.

MR. JUSTICE WARRINGTON, in the Chancery Division, on the 24th ult., had before him the case of the Earl of Macclesfield *v.* Pocklington, upon a motion by the plaintiff for an interim injunction to restrain the defendant from interfering with or obstructing the plaintiff's ancient lights until the trial of the action or further order.

Mr. George Cave, K.C., on behalf of the plaintiff, said that at the time the action was commenced and the present notice of motion served the plaintiff had the defendant's plans for the re-erection of the house which stood opposite plaintiff's house in Maddox-street, W., and these plans showed a very serious obstruction of light to the plaintiff's windows. As soon as the action was commenced the defendant modified his plans, but there were still two issues in the case. One, mainly affecting the question of costs, was whether the old plans would constitute an obstruction or not; and the other was whether the modified plans would constitute an obstruction to the plaintiff's light or not. He (counsel) understood, however, that the defendant had practically completed his building up to the level of the modified plans, therefore he did not think he was then in a position to ask for more than an undertaking from the defendant that he would not build beyond his modified plans pending the trial of the action.

Mr. Vernon, on behalf of the defendant, said he was quite willing to give that undertaking.

His lordship asked if the parties wanted a speedy trial.

Mr. Vernon said there was no possibility of getting the case tried these sittings.

His lordship: Then it will follow its usual course.

Patents.

APPLICATIONS PUBLISHED.*

7,172 of 1908.—Elea Luboshey and John Stoddart: Window fittings for the inward opening, removing, and automatic fastening of sashes.

11,522 of 1908.—Paul Timofeeff: Manufacture of cement for building and like purposes.

14,873 of 1908.—Harry William Smart, Charles Thomas Gann, and John Wark: Window sashes.

16,609 of 1908.—Dr. Hans Wislicenus: Chimneys.

17,188 of 1908.—Percy Stewart: Bolt for bolting doors, windows, and the like.

18,464 of 1908.—James Florendine and Charles James Cluley: Means for securing handles to hammer-heads, axes, picks, and the like.

18,823 of 1908.—George Herbert Burges and John Curtis: Machines for making blocks of concrete or the like.

20,767 of 1908.—Henry Joseph Beaurain: Glass facing-tiles for walls.

20,849 of 1908.—Thomas Thorp and Thomas Gardiner Marsh: Method of ventilating rooms.

24,589 of 1908.—Cornelius Johannes Cruyff: Revolving doors.

4,293 of 1908.—Arthur William Box: Mortise rim and other locks.

6,185 of 1909.—Francis Joseph James Gibbons: Door fastenings.

7,454 of 1909.—William John Stewart: Method of driving hollow reinforced concrete piles.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 14.—By ESCRITT & BARRELL (at Grantham).

Grantham, Lincs.—6 to 9, Welby-st., f., gross rental 31*l.* 4*s.*	£365
7 and 9, Westgate (s.), f., y.r. 98*l.* 10*s.*	2,000
90, Westgate (licensed premises), f., y.r. 80*l.*	1,600
91, 92, and 93, Westgate, f., y.r. 150*l.*	2,900

June 15.—By PENDERED & SON (at Daventry).

West Haddon, Northants.—Parson's farm, 47 a. 3 r. 7 p., f.	1,055
Freehold residence and stable, y.r. 18*l.*	315
Daventry, Northants.—27 to 35 (odd), New-st., f., gross rental 66*l.*	605
7 to 14, Mount Pleasant, f., gross rental 67*l.*	600

By W. J. REES (at Swansea).

Swansea, Glamorgan.—The Brynymor estate, f.g. rents 623*l.* 0*s.* 6*d.*, reversions in 35 to 96 yrs. (tithe and minerals to be paid for in addition), in lots	17,420
Eaton-cres., etc., 12 freehold building sites	1,022

June 16.—By ESCRITT & BARRELL (at March).

March, Cambs.—Freehold arable and meadow land, 9 a. 3 r. 20 p.	620

June 17.—By THOMAS MURRAY & SON (at Easington).

Easington, Durham.—South Grange Farm, 38 a., f.	2,400
Thorpe-la., a freehold field, 4 a.	480
East Grange Farm, 66¼ acres, f.	3,000
South Hatton-rd., a freehold field, 7½ acres	260
The Manor House and two cottages, f.	808
Grange and Ivy cottages, f.	556
North Grange Farmhouse, stable, and ¼ acre, f.	380

By G. E. SWORDER & SONS (at Bishop's Stortford).

Much Hadham, Herts.—Ducketts and Bulls Farm, 28 a. 2 r. 34 p., c.	685
Pretoria Villa and 12 cottages, f. and c.	1,345
Freehold and copyhold holding, 55 a. 0 r. 2 p.	800

June 18.—By N. EASTON & SON (at Hull).

Brough, Yorks.—Glenrock, and 12¼ acres, f.	6,375

By T. E. AYRE & CO. (at Exeter).

Ottery St. Mary, Devon.—Metcombe Farm, 139 a., f.	4,650

June 18.—By RIPPON, BOSWELL, & WHITAKER (at Exeter).

Doddiscombsleigh, Devon.—Perry Farm, 92 a. 1 r. 31 p., f.	1,800

By WALLER & KING (at Southampton).

Southampton.—Commercial-rd., Hamilton House and stabling, f., y.r. 90*l.*	1,650

By JOSEPH STOWER (at Leominster).

Leominster, Hereford.—6, Church-st., f., y.r. 25*l.*	500
Church-st., freehold warehouse, y.r. 6*l.*	150
Cornhill Cop Farm, 246 a. 0 r. 17 p., f.	7,300
Lower Stagbach Farm, 98 a. 2 r. 37 p., f.	3,000
Barons Cross Farm, 22 a. 1 r. 39 p., f.	850
Freehold pasture field, 1 a. 2 r. 30 p.	100
Enclosure of arable land, 3 a. 0 r. 4 p., f.	140
Freehold cottage, garden, and orchard, 2 a. 1 r. 18 p.	270
Freehold arable and pasture land, 48 a. 2 r. 31 p.	2,455

By THORNBORROW & CO. (at High Hesket).

Hesket-in-the-Forest, Cumberland.—Field House Farm, 73 a. 1 r. 18 p., f. and c.	2,450

June 19.—By W. BROWN & CO. (at Aylesbury).

Aston Sandford, Bucks.—Pasture farm, 193 a. 0 r. 39 p., f.	3,750
Accommodation land, 31 a. 2 r. 4 p., f.	1,220
The Manor House, stabling, and 153 a. 0 r. 14 p., f., including the advowson of Aston Sandford	6,800
Kingsey, Oxon.—Enclosure of meadow land, 2 a. 2 r. 5 p., f.	190

RECENT SALES.—*Continued on page* 28.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

JULY 9.—**Stoke-upon-Trent.**—ADDITIONS TO TOWN HALL.—The Corporation invite designs for additions to existing Town Hall. Premiums of 100*l.* and 50*l.* Conditions, etc., from Town Clerk, Town Hall, Stoke-upon-Trent. For further particulars see advertisement in our issue of May 15.

JULY 9. — **Wood Green.** — PUBLIC BATHS. — The Council of the U.D. of Wood Green invite applications from those wishing to send designs for the erection of new Public Baths at a cost not exceeding 8,000*l.* Premiums of 50, 25, and 15 guineas will be awarded to the authors of the designs placed by the assessor as the first, second, and third best submitted by the fifteen architects selected to compete. For further particulars see advertisement in our issue of June 26.

JULY 17 — **Burslem.**—COMPETITIVE PLANS—EXTENSION OF TIME.—The Corporation invite competitive plans for new public buildings, which will be placed before an assessor to be appointed by the Corporation. Subject to the conditions of competition, the architect whose design is considered by the assessor to be the best will be appointed to carry out the work, and the respective architects whose designs the assessor decides to be second and third in order of merit will be awarded premiums of 100*l.* and 50*l.* respectively. All designs must be sent in before July 17 next. Conditions of competition, etc., can be obtained from Mr. Bettany, Borough Surveyor, on payment of 2*l.* 2*s.*

JULY 30.—**Grimsby.**—The Corporation invite designs for the extension of existing Town Hall. Premiums of 250*l.*, 150*l.*, and 100*l.* Conditions from Mr. H. Gilbert Whyatt, Borough Engineer, Town Hall, Grimsby. Full particulars only on receipt of a deposit of 2*l.* (Cheques to be made out to Mr. Frank Stephenson, Borough Treasurer.) See advertisement in our issue of April 24 for further particulars.

JULY 31. — **Glasgow.** — LAYING-OUT LAND.—**The Patrons of the Royal Incorporation of Hutchesons' Hospital in the City of Glasgow invite competitive designs for laying-out for feuing and building their lands of Thornliebank, in the Parish of Eastwood and County of Renfrew, near the City of Glasgow. The terms and conditions of the competition, and, upon deposit of 3*l.* 3*s.*, skeleton plans showing the situation and boundaries of the different portions of the lands, may be had from the Chamberlains of the Hospital, Messrs Hill & Hoggan, 194, Ingram-street, Glasgow, with whom designs must be lodged not later than July 31 1909. Premiums of 100*l.*, 75*l.*, 50*l.*, and 25*l.* respectively will be awarded.**

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50, 25, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

Contracts.

BUILDING.

JULY 5. — **Buckingham.**—COTTAGES.—The U.D.C. invite tenders for the erection of two artisans' cottages. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Smith, Borough Surveyor.

JULY 5. — **Ewelme.** — READING-ROOM.—The Committee of the Parish Reading-room, Ewelme, invite tenders for the erection of a Parish Reading-room. Plans, etc., may be seen, and form of tender obtained, on application to Mr. Edwin E. G. Hearness, architect, 24, St. Martin's-street, Wallingford.

JULY 5.—**Huddersfield.**—FRAMINGS.—The Corporation of Huddersfield invite tenders for glazed framings proposed to be fixed around the Wholesale Market, Byram-street. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the offices of the Borough Engineer and Surveyor, 1, Peel-street.

JULY 5.—**Pendleton, Salford.**—ALTERATIONS, ETC.—The Electricity Committee of the Salford Corporation invite tenders for the alteration and addition to buildings at the Electricity Works, Frederick-road, Pendleton. Plans, etc., may be obtained on application at the office of Mr. Victor A. H. M'Coven, M.Inst.E.E., Borough Electrical Engineer, Frederick-road, Pendleton, on payment of a deposit of 1*l.* 1*s.*

JULY 5.—**Whittonstall.**—COTTAGES.—The Consett Iron Company, Ltd., invite tenders for the erection of three cottages near Whittonstall. Plans, etc., may be seen, and quantities obtained, upon personal application to the architect at the Company's general offices at Consett.

JULY 6. — **Blackburn.**—REPAIRS, ETC.—The Town Hall and Markets Committee invite tenders for the work required in repairing the stone cornice of the Town Hall and for reroofing No. 2 Market House. Specification, etc., can be obtained on application at office of Mr. William Stubbs, A.M.Inst.C.E., Borough Engineer, Municipal Offices, Blackburn.

JULY 6-19.—**Handsworth.**—CEMETERY CHAPEL AND ENTRANCE LODGE.—The U.D.C. of Handsworth invite tenders for the erection of a chapel and entrance lodge at their cemetery at the Leveretts, Handsworth. Applications for copies of the bills of quantities and conditions of contract must be made on or before July 6, together with cheque for 3*l.* 3*s.* The drawings, etc., can be seen at (but not obtained from) the offices of the architect, Mr. W. H. Bidlake, M.A., 77, Waterloo-street, Birmingham.

JULY 6.—**Plymouth.**—WORKS, ETC., AT SCATTERED HOMES.—The Guardians invite tenders for painters', carpenters', and masons' work required to be done at certain of the Scattered Homes. A specification may be seen at office of Mr. W. Adams, Clerk to the Guardians, 13, Princess-square, Plymouth, on application between the hours of 10 a.m. and 4 p.m.

JULY 6.—**Pontllanfraith (Mon.).**—SCHOOL.—Monmouthshire Education Committee invite tenders for the erection of a new school, to accommodate 260 infants, at Pontllanfraith, Mon. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. John Bain, architect, C.C. Offices, Newport, on payment of a deposit of 2*l.* 2*s.*

JULY 7.—**Barrow-in-Furness.**—CONVENIENCES.—The Corporation invite tenders for the erection of conveniences in the Public Park. Plans may be seen, and bills of quantities obtained, on application at the Borough Engineer's Office.

JULY 7.—**Burghead.**—ADDITIONS, ETC., TO STORE.—Mason, carpenter, plumber, and slater, and plaster works of additions and alterations to store and cottage at Burghead. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

JULY 7. — **Burton-upon-Trent.**—URINAL.—The Corporation of Burton-upon-Trent invite tenders for the erection of a public urinal in Hunter-street. Drawings may be seen, and the bill of quantities, etc., obtained, at office of Mr. George T. Lynam, Borough Engineer and Surveyor, Town Hall.

JULY 7.—**Charlton Horethorne.**—ALTERATIONS TO SCHOOL.—Alterations and additions to the Charlton Horethorne School. Plans and specifications may be seen at Messrs. Benson's offices at Yeovil.

JULY 7. — **Dagenham.**—SCHOOL ENLARGEMENTS.—The Governors of Ford's Charitable Bequest invite tenders for enlargements and alterations to their Dagenham Elementary Schools. Plans, etc., prepared by the architect, Mr. Joseph Aylott, 25, Ludgate-hill, E.C. Names and addresses, together with a deposit of 2*l.* 2*s.*, to the architect.

JULY 7.—**Doncaster.**—BUSINESS PREMISES.—Erection of business premises in Trafford-street, Doncaster, for Mr. F. G. Simpson. Plans, etc., on application to Mr. F. Norman D. Masters, M.A., Bank-chambers, Scot-lane, Doncaster.

JULY 7.—**Hereford.**—SCHOOL ADDITIONS.—Herefordshire C.C. Education Committee invite tenders for the construction of certain additions to the Council School situate at Burghill, near Hereford. The plans may be seen at the County Surveyor's Office, where bills of quantities, etc., may be obtained on payment of 2*l.* 2*s.*

JULY 7.—**Inverkeithing.**—SHOPS AND HOUSES.—The Rosyth Building and Estates Company, Ltd., invite tenders for tenements of shops and dwelling-houses to be erected in Hope-street, Inverkeithing. Plans may be seen, and schedules of quantities obtained, on deposit of 1*l.* 1*s.*, by applying to the architect, Mr. William Williamson, F.R.I.B.A., Kirkcaldy, or to Mr. A. C. Philp, C.A., Secretary, 143, High-street, Dunfermline.

JULY 7. — **Knottingley.** — SCHOOL.—West Riding C.C. invite tenders in connexion with the erection of a new school at Knottingley. Plans may be seen, and quantities obtained on application to the architects, Messrs. Tennant & Collins, of Pontefract. A deposit of 1*l.* must be paid to the West Riding Treasurer, and sent to him direct, at the County Hall, Wakefield.

JULY 7. — **Llanrhidian, etc.**—SCHOOL WORKS.—Glamorgan C.C. invite tenders for (2) erection of new school at Llanrhidian; (3) foundations for temporary school buildings at Loughor; (4) erection of higher elementary school at Caerphilly; (5) minor improvements at the Council School at Brithdir; (6) unclimbable iron fencing for Aberdare County School Recreation Field. Plans, etc., may be seen, and bills of quantities and form of tender obtained, for Work No. 2 at the Gowerton County Police-station, and for Work No. 4 at the Caerphilly Police-station. Plans may be seen, and specification, etc., obtained, for Work No. 3 at the Loughor Council School; for Work No. 5 at the Brithdir Council School; and for Work No. 6 at the Aberdare Police-station. The plans, etc., of all the works may be seen or obtained at offices of Mr. T. Mansel Franklen, Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

JULY 7. — **Roscrea.**—COTTAGES.—Roscrea No. 1 R.D.C. invite tenders for building thirty-six labourers' cottages in concrete blocks or stone. Plans, etc., can be obtained from Mr. Thomas Dooly, Clerk of Council, on payment of 5*s.*

JULY 7. — **Southampton.** — FLOOR FOR ROLLER SKATING.—The Southampton Harbour Board invite tenders for the supply and laying of a maple wood floor for the Royal Pier Pavilion, Southampton. Specification, etc., can be obtained from Mr. E. Cooper Poole, A.M.Inst.C.E., Engineer to the Board, at the Board's Office, Town Quay, Southampton, on payment of 1*l.*

JULY 7. — **Trehafod.** — HOUSES.—Erection of six houses at Trehafod. Plans, etc., may be seen at office of Mr. Edward Rees, architect and surveyor, Alexandra-chambers, Pontypridd.

JULY 8.—**Allerton Bywater.**—SCHOOL.—The West Riding Education Committee invite tenders for the following works:—Allerton Bywater, Lock-lane Provided School—alteration and repairs (builder and joiner). Plans may be seen, and specifications, etc., obtained on application to the West Riding Architect, County Hall, Wakefield.

JULY 8.—**Seafield Estates—Rothes District.**—HOUSE, ETC.—Estimates wanted for the mason, carpenter, slater, plumber, plaster, and painter works of dwelling-house at Brachead, Elchies; also for the mason, carpenter, and iron works of Cattle Courts at Hillhall, Elchies. Plans, etc., may be seen at Seafield Estates Office, Elgin.

JULY 9.—**Crosland Moor.**—BUNGALOW.—Tenders are invited for the various works required in the erection of a bungalow at Crosland Moor. Drawings may be seen, and quantities obtained, at offices of Messrs. J. B. Abbey & Son, architects and surveyors, 34a, New-street, Huddersfield.

JULY 9.—**Halifax.**—SHOPS.—Converting warehouse into two lock-up shops in Cheapside, Halifax. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Clement Williams & Sons, architects, Post Office-buildings, Commercial-street, Halifax.

JULY 9.—**Pontycymmer.**—COTTAGES.—The Gwynfryn Building Club invite tenders for the erection of thirty-six cottages at Pontycymmer. Plans, etc., can be seen at the Ffaldau Collieries Company's Offices at Pontycymmer on payment of 1*l.* 1*s.*

JULY 9. — **Skelmanthorpe Provided Mixed School.**—ALTERATIONS.—Specifications to be had on application to Mr. William Wood, Divisional Clerk, Penistone.

JULY 9.—**Slaithwaite.**—HOUSES.—Erection of two dwelling-houses, Manchester-road, Slaithwaite. Plans may be seen, and quantities obtained, at office of Mr. Joe Ainley, architect and surveyor, Chapel-street, Slaithwaite.

JULY 10-30. — **Berkeley.**—SCHOOL.—Gloucestershire Education Committee invite tenders for proposed new Council School, Berkeley. Bills of quantities can be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester, upon depositing 2*l.* 2*s.* Applications for bills of quantities must be made not later than July 10.

JULY 10. — **Gillingham (Kent).** — EXTENDING SCHOOLS.—Tenders are invited for carrying out the work of extending Byron-road and Richmond-road Council Schools, Gillingham. Plans, etc., may be seen, and bills of quantities and forms of tender may be obtained, from Mr. J. L. Redfern, A.R.I.B.A., Borough Surveyor (Surveyor to the Education Committee), Council Offices, Gardiner-street, Gillingham, Kent, upon payment to Mr. Andrew Johns, Education Secretary, Education Offices, 4, Gardiner-street, Gillingham, Kent, of a deposit of 10*s.* 6*d.* in respect of each school.

JULY 10.—**Keswick.**—TWENTY-FIVE COTTAGES.—Derwentwater Tenants, Ltd., invite tenders for the complete erection of four blocks of cottages at Keswick. Separate tenders will be required for each block. The plans, etc., may be seen from June 28 to July 3 at the office of Mr. D. N. Pape, Estate Agent, Keswick, and at the office of the architect, Mr. A. N. W. Hodgson, 9, High-street, Windermere.

JULY 10.—**Lauder.**—TECHNICAL SCHOOL EXTENSION.—Mason, joiner, plumber, plasterer, slater, asphalt work, painter work, heating and electric lighting, etc., of Lauder Technical School Extension. Offers to be lodged with Mr. D. Gorrie, Clerk to the School Board, 104, High-street, Dunfermline, in whose hands are the plans, and from whom schedules of quantities may be obtained.

JULY 10. — **Wooler.**—SCHOOL ALTERATIONS.—Tenders (single or whole) are required for alterations and additions to Wooler C.E. School premises. The plans, etc., may be seen at the school. Mr. M. Temple Wilson, M.R.San.I., architect and surveyor, Alnwick.

JULY 12.—**Aberlow and Lisvernane.**—SCHOOLS.—Tenders are invited for the erection of two schools, one at Aberlow, the other at Lisvernane. Plans, etc., can be seen at the Presbytery, Galbally.

JULY 12.—**Blackburn.**—PRIVIES, ETC.—The Health Committee invite tenders for the reconstruction of about fifty privies and cesspools to water-closets. Specification, etc., may be obtained at office of Mr. Wm. Stubbs, A.M.Inst.C.E., Borough and Water Engineer, Municipal Offices, Blackburn.

JULY 12. — **Ebbw Vale.**—JOBBING WORKS.—Ebbw Vale Education Committee invite tenders (by a

Digitized by Google

schedule of prices) for jobbing works to the schools for twelve months. Schedules and any further information required may be obtained from the architect, Mr. Henry Waters, at Market-chambers, Elbow Vale. Applications for schedules should be accompanied by a deposit of 10s. 6d.

JULY 12.—**Elland.**—VILLA.—Tenders are invited for the various works (painting excepted) required in the erection of a detached villa at Hullen Edge, Elland, for Mr. Geo. Ingham. Plans can be seen, and quantities obtained, at offices of Messrs. Richard Horsfall & Son, architects, No. 22a, Commercial-street, Halifax.

JULY 12.—**Guildford.**—BUILDINGS.—The T.C. invite tenders for the construction of the necessary superstructural buildings (upon foundations already completed) over the refuse destructor plant and machinery at Bellfields, Stoke. Plans, etc., may be seen, and a bill of quantities obtained, at the office of Mr. C. G. Mason, A.M.Inst.C.E., the Borough Engineer and Surveyor, Tuns Gate, Guildford, upon payment of the sum of 2*l.* 2s.

JULY 12.—**Guildford.**—REPAIRS AND ADDITIONS TO SCHOOLS.—The T.C., as the Local Education Authority, invite tenders from persons within the Borough for certain additions, alterations, paint-work, and repairs to elementary schools. Plans, etc., may be seen, and a form of tender obtained, on application to the Borough Surveyor, Mr. C. G. Mason, A.M.Inst.C.E., Tun's Gate.

✱ JULY 12.—**Kensington.**—TOOLHOUSE AND STORE.—The Council of the Royal Borough of Kensington are prepared to receive tenders for the erection of a toolhouse and store in West Mall, Notting Hill Gate. See advertisement in this issue for further particulars.

JULY 12.—**Leicester.**—BATHS.—The Baths Committee invite tenders for the erection of Public Baths in Knighton Fields-road West. Bills of quantities may be obtained at the office of the architect, Mr. Arthur H. Hind, A.R.I.B.A., 3, Greyfriars, Leicester, upon a deposit of 1*l.* 1s.

JULY 12.—**Mardy.**—HOUSES.—Erecting 100 houses at Mardy, Glam. Plans, etc., may be seen on application to Mr. Gomer Evans, Mardy, Glam.

JULY 13.—**Isle of Thanet Joint Hospital Board, Haine, near Ramsgate.**—ALTERATIONS, ETC.—Tenders are invited for alterations and additions required at the receiving block. Plans, etc., to be seen at the office of the Board's Architect, Mr. H. Bertram Langham, Bank-chambers, Broadstairs, or copies of the same will be supplied upon a deposit of 3*l.* 3s. being made.

JULY 13.—**Northfleet.**—URINAL.—Northfleet U.D.C. invite tenders for the erection of a small brick-built urinal on the Ebbs Fleet Pleasure Ground. Plans, etc., may be seen during office hours at the Council Offices, situate The Hill. Mr. J. A. Mitchell, District Surveyor.

JULY 13.—**Reading.**—ALTERATIONS, ETC., TO WORKHOUSE.—The Guardians invite tenders for alterations and additions to their Workhouse (Infirm Women's Block). Plans, etc., may be seen, and forms of tender obtained, on applying to the Master of the Workhouse, 344, Oxford-road, Reading.

JULY 14.—**Larne.**—DISPENSARY.—The Board of Guardians invite tenders for the erection of a dispensary and caretaker's residence at Carrickfergus. Plan, etc., can be seen at the Workhouse, Larne, or at the office of the Guardians' Architect, Mr. W. D. R. Taggart, 51 and 52, Scottish Provident-buildings, 2, Wellington-place, Belfast.

JULY 14.—**Longford.**—REPAIRS.—The Governors of the Longford Infirmary invite tenders for repairs, etc., to Surgeon's House. Full particulars, etc., can be had from the Registrar, Co. Infirmary.

JULY 14.—**Smarden.**—REPAIRS TO SCHOOL.—Kent Education Committee invite tenders for the execution of general repairs required to be carried out at Smarden Council School. Specifications can be seen, and further information obtained, at the office of the Correspondent, Mr. F. W. Buss, West End, Smarden, S.O.

JULY 15.—**Belfast.**—COTTAGES.—The R.D.C. invite tenders for the building and fencing of twelve labourers' cottages, to be built in pairs, according to the plans, etc., prepared by Mr. W. D. R. Taggart, C.E., Scottish Provident-buildings, Belfast. Plans, etc., can be inspected, and tender forms obtained, at the office of the Clerk of the R.D.C., Workhouse, Belfast, or at the office of the architect.

JULY 15.—**East Tuddenham and Honingham School.**—ALTERATIONS.—Alterations and additions to the above. Apply to Messrs. Lacey & Upcher, architects and surveyors, 6, Upper King-street, Norwich, where plans, etc., can be seen, and copies of quantities obtained. Copies of the plans, etc., can also be seen at Honingham Vicarage.

✱ JULY 15.—**Windsor.**—HOUSES.—The Commissioners of H.M. Works and Public Buildings desire tenders for the erection of new houses in Park-street, Windsor. See advertisement in this issue for further particulars.

JULY 16.—**Shooter's Hill.**—WATER TOWER.—The Metropolitan Water Board invite tenders for the construction of a water tower and other subservient works at Shooter's Hill. The drawings etc., may be inspected at the offices of the Chief Engineer, Savoy-court, Strand, W.C. Forms of tender, etc., from the Chief Engineer on the production of an official receipt for the sum of 10*l.*, which sum must be deposited with the Accountant at Savoy-court, Strand, W.C.

✱ JULY 19.—**Ilford.**—BOUNDARY WALLING, ETC.—The Ilford Education Committee invite tenders for brick boundary walling, wrought-iron palisading on granite base, and entrance gates to school site at South Park Elementary School, Water-lane, Ilford. See advertisement in this issue for further particulars.

✱ JULY 19.—**Merton.**—COTTAGES.—Tenders are invited for the erection of eight cottages in Mill-road, Merton Abbey Estate, High-street, Merton, S.W. See advertisement in this issue for further particulars.

JULY 20.—**Tanfield Lea, Bloemfontein, etc.**—SCHOOL, ETC.—The C.C. of Durham invite tenders for new higher elementary school and pupil teacher centre at Tanfield Lea; new Council school at Bloemfontein; alterations at Willington and Collierley Council Schools. Plans, etc., may be seen, and bills of quantities obtained, as follows:—(1) For Tanfield Lea and Bloemfontein Schools: At the office of Mr. W. Rushworth, Shire Hall, Durham. (2) For alterations at Willington and Collierley Schools: At the office of Mr. F. E. Coates, Shire Hall, Durham.

✱ JULY 21.—**Homerton.**—ADDITIONS TO HOSPITAL.—The Metropolitan Asylums Board invite tenders for additional accommodation for male staff at the Eastern Fever Hospital, Homerton-grove, Homerton. See advertisement in this issue for further particulars.

JULY 23.—**Putford and Woolfar-Disworthy.**—HOUSE AND SCHOOL.—Devon County Education Committee invite tenders for a mistress' house and other work at the West and East Putford Council School, and for the enlargement, etc., of the Woolfar-Disworthy West Council School. The drawings, etc., may be seen at the respective schools.

✱ JULY 28.—**Astley Bridge, Great Lever, and Halliwell.**—LIBRARIES.—The Bolton Corporation invite tenders for the erection of Public Branch Libraries at Astley Bridge, Great Lever, and Halliwell Districts of the Borough. Application must be accompanied by the sum of 1*l.* 1s., which will be returned on the receipt of a bona fide tender. See advertisement in this issue for further particulars.

NO DATE.—**Belfast.**—THEATRE.—Estimates are required for the erection and completion of a theatre at the corner of Grosvenor-street and Durham-street, in the City of Belfast. Schedules of quantities may be obtained on payment of the sum of 1*l.* 1s. from the architects, Messrs. J. D. Swanston & Syme, Kirkcaldy, N.B. Plans may be inspected at the offices of the Company's solicitors, Messrs. W. B. Galway & Boas, Scottish Provident-buildings, Belfast.

NO DATE.—**Carlisle.**—WAREHOUSES.—Erection of warehouses, Crown-street and Collier-lane, Carlisle, for Messrs. P. McCumiskey. Names to Mr. H. Foxall, architect, 54, Lowther-street, Carlisle, with deposit of 1*l.* 1s.

NO DATE.—**Chapel-en-le-Frith.**—SCHOOLS.—New Primitive Methodist Schools at Chapel-en-le-Frith. Plans may be seen, and bills of quantities obtained, at the offices of the architects, Messrs. Bryden & Walton, Buxton.

NO DATE.—**Doncaster.**—SHOPS, ETC.—Erection of two shops and seven houses (labour only), general builder's, carpenter's and joiner's, slater's, plasterer's, plumber's and glazier's, and painter's work. Write to Box 407, *Doncaster Gazette* Office.

NO DATE.—**Leeds.**—ALTERATIONS.—Alterations, etc., to the Miners' Institute, York-road, Leeds, for the Yorkshire Miners' Association. Names to Messrs. Garside & Pennington, architects, Pontefract and Castleford.

NO DATE.—**Mynyddygarreg.**—COTTAGES.—Erection of workmen's cottages on Mynyddygarreg. For particulars apply A. Y., Dinas Silica Brick and Lime Company, Ltd., Kidwelly.

NO DATE.—**Otterbourne and Allbrook.**—REPAIRS, ETC.—The Managers of the Otterbourne and Allbrook Schools invite tenders for the internal decoration and minor repairs of their schools (including offices). The specifications of the work and sample panels are deposited at the respective schools.

NO DATE.—**Pulteneytown.**—HALLS.—Proposed halls for the United Temperance Association of Pulteneytown. Names to Mr. George Sinclair, architect, 95, Bath-street, Glasgow.

NO DATE.—**Tranmere.**—CLASSROOM.—Tenders are invited for the erection of a science classroom, etc., at the Higher Tranmere High School for Girls. Plans, etc., may be seen at the office of the architect, where bills of quantities may be obtained. Mr. J. R. Mewton, 56, Hamilton-square, Birkenhead.

NO DATE.—**Yeovil.**—ALMSHOUSE.—Erection of new almshouse in Preston-grove. Particulars may be obtained from Mr. A. Oddy, Borough Surveyor, Municipal Offices, Yeovil.

ENGINEERING, IRON, AND STEEL.

JULY 5.—**Bristol.**—WASHING MACHINE.—Tenders are invited for the installation of a washing machine at the Stapleton Workhouse, in accordance with a statement which is deposited for inspection at office of Mr. J. J. Simpson, Clerk to the Guardians, St. Peter's Hospital.

JULY 6.—**London.**—ROLLING STOCK.—The South Indian Railway Company, Ltd., invite tenders for the supply of rolling stock. Specifications, etc., may be obtained at the Company's Offices. A charge, which will not be returned, will be made of 1*l.* for each copy of the specification. Copies of the drawings may be obtained at the office of Mr. Robert White, M.Inst.C.E., Consulting Engineer to the Company, 3, Victoria-street, Westminster, London, S.W., on payment of 5s. per sheet. (Company's Offices, 91, York-street, Westminster, London.)

JULY 6.—**Wealdstone.**—ENGINE, ETC.—Wealdstone U.D.C. invite tenders for the supply, delivery, and fixing of the following, viz.:—Contract 1.—A 5 b.h.p. oil engine and a 3-in. centrifugal pump, with the necessary pipes, etc. Contract 2.—Ten 65-ft. diameter automatic rotating sewage distributors, with the necessary 6-in. feed pipes, etc. Drawings may be seen, and specifications, etc., obtained, on application to Mr. Herbert Walker, C.E., F.C.S., the Council's Engineer and Surveyor, Council Offices, Wealdstone.

JULY 7.—**Wheatenhurst Union.**—BOILER, ETC., FOR EASTINGTON WORKHOUSE, NEAR STONEHOUSE, GLOS.—Tenders are invited for the supply of Workhouse boiler, with heating apparatus and cooking plant. Plan, etc., may be seen at the Workhouse. Copies of the specification can be supplied on payment of the cost thereof, 5s. Mr. R. E. Stuart, Clerk, Bedford-street, Stroud, Glos.

JULY 10.—**Aylesbury.**—BOILER.—The Guardians invite tenders for the supply to the Aylesbury Union Workhouse of a 3 N. h.-p. high-class cross-tube vertical boiler, by Messrs. Marshall, Sons, & Co., Ltd., of Gainsborough. The contractor can obtain further particulars, and inspect form of contract, on application to the Master of the Workhouse, Aylesbury.

JULY 10.—**Kepwick.**—BRIDGE WORKS.—Thirsk R.D.C. invite tenders for taking down the tramway bridge in Kepwick Bank, removing same, and rebuilding over Brenk Beck, on the boundaries of the Parishes of Kepwick and Nether Silton. Plan, etc., may be seen at the office of the Surveyor, Thirsk.

JULY 12.—**Edinburgh.**—ELECTRIC LIGHT.—The School Board invite estimates for an electric light installation at Gorgie School. Specifications may be obtained at the office of Mr. George Thomson, A.M.Inst.C.E., M.Inst.M.E., 11, Randolph-place.

JULY 12.—**Hull.**—HEATING.—The Education Committee of the Corporation invite tenders and scheme for the heating by a low-pressure system the school buildings which they propose to erect, one school comprising two separate blocks in Sidmouth-street, and one school comprising two separate blocks in Southcoates-lane. Plans, etc., can be obtained at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull.

JULY 13.—**London.**—CRANES.—The Madras and Southern Mahratta Railway Company, Ltd., Board of Directors invite tenders for thirty-two pillar jib cranes, as per the specification, which may be seen at the offices of the Company. The charge for the specification is 1*l.* 1s., which will not be returned. Mr. H. Bonham-Carter, Secretary, 91, York-street, Westminster, S.W.

JULY 13.—**Richmond.**—BOILERS, ETC.—The Joint Committee of the Richmond District Asylum invite tenders for the supply and erection of two "Lancashire" boilers, to be fixed at the female wing of the institution. Plans, etc., can be seen and copied at office of Mr. W. J. Murphy, Chief Clerk, Asylum Offices, Grangegorman, Dublin, on payment of 2*l.* 2s.

JULY 14.—**Middleton.**—BOILER.—The Corporation of Middleton invite tenders for a Lancashire boiler. Further particulars, etc., may be obtained on application to Mr. C. F. Broadhead, Gas Engineer, Middleton.

✱ JULY 14.—**Twickenham.**—CONVENIENCES.—The London C.C. invite tenders for conveniences and dressing accommodation at Marble Hall, Twickenham. See advertisement in this issue for further particulars.

✱ JULY 19.—**London.**—FIREPROOFING.—The Commissioners of H.M. Works desire tenders for the fireproofing of the National Gallery (east wing). See advertisement in this issue for further particulars.

JULY 19.—**Meavy.**—BRIDGE.—The C.C. of the County of Devon invite tenders for removing the old and building a new bridge over the River Mew. The plans, etc., can be seen at the offices of the Council at the Castle of Exeter.

✱ JULY 19.—**Ringwood.**—HEATING APPARATUS, ETC.—Southampton C.C. desire tenders for heating apparatus, etc., for Ringwood new County schools. See advertisement in this issue for further particulars.

✱ JULY 19.—**St. Marylebone.**—KITCHEN RECONSTRUCTION.—St. Marylebone Guardians desire tenders for reconstructing kitchen and cooking apparatus at the Infirmary, Rackham-street, Notting Hill, W. See advertisement in this issue for further particulars.

JULY 22.—**Portsmouth.**—RETAINING WALL.—Tenders are invited for constructing, supplying, and maintaining for six calendar months a ferro-concrete retaining wall at the Fish Market, Portsmouth, together with a wooden bulwark and stairs. The specification, etc., may be seen, and a form of tender obtained, at the Borough Engineer's Office at the Town Hall.

JULY 22.—**Swansea.**—STEEL SHED.—Swansea Harbour Trustees invite tenders for the supply, delivery, and erection at the South Dock Basin, Swansea, of one framed and braced steel single-storied shed, 117 ft. long by 60 ft. wide in two spans of 30 ft., with curved roof, part of the sides and ends of corrugated iron respectively. Forms of tender can be obtained, and plan, etc., inspected, on application to Mr. Talfourd Strick, Clerk, Harbour Offices, Swansea.

JULY 23.—**Ponder's End.**—PUMPS, ETC.—The Metropolitan Water Board invite tenders for the manufacture and erection of a pair of vertical bucket and plunger pumps, alterations to the existing engine, and the provision of new buckets and working barrels, and alterations to valves and pump rods of the existing deep well pump, and all contingent works at Ponder's End Well, Enfield, Middlesex. The drawings, etc., may be inspected at the Eastern District Engineer's Office of the Metropolitan Water Board, Lea Bridge-road, Clapton, N.E. Forms of tender, etc., from the District Engineer on the production of an official receipt for the sum of 10*l.*, which sum must be deposited with the Accountant at Savoy-court, Strand, W.C.

JULY 24.—**Dublin.**—WARMING.—The Technical Education Committee invite tenders for the warming of the new Technical Schools, Bolton-street, Dublin, in accordance with a memorandum of particulars, etc., which can be obtained at the office of the City Architect, Municipal Buildings, Cork-hill, Dublin, where the plans of the building can also be inspected.

AUGUST 16.—**Bury.**—BOILERS.—The Corporation of Bury invite tenders for the supply and erection of three water-tube boilers, each capable of evaporating 25,000 lb. of water per hour. A copy of the specification and form of tender may be obtained from Mr. S. J. Watson, M.Inst.E.E., Engineer and Manager, Electricity Works, Bury, on payment of a deposit of 2*l.* 2s.

✱ NO DATE.—**Aberystwyth.**—HEATING APPARATUS.—Tenders are invited by the University College of Wales, Aberystwyth, for heating apparatus at the Alexandra Hall, Aberystwyth. Plans and specifications may be inspected on application to the Registrar at the College. See advertisement in this issue for further particulars.

NO DATE.—**Hale.**—HEATING.—Tenders are invited for heating, ventilating, electric lighting and wiring Altrincham New Higher Elementary School, Queen's-road, Hale, now in course of erection. Plans may be seen, and specifications obtained, at the offices of Mr. Jos. Howarth, Clerk, Education Department, Altrincham, Cheshire. A deposit of 1*l.* 1s. will be required.

NO DATE.—**Ledstone.**—SINKING A SHAFT.—Sinking a shaft 18 ft. finished diameter, for the Micklefield Coal and Lime Company, Ltd., at Ledstone, near Kippax. For particulars apply to Mr. J. G. Linneker, Manager.

Digitized by Google

MISCELLANEOUS.

JULY 6.—**Epping.**—STEAM ROLLING.—Epping U.D.C. invite tenders for the steam rolling of about 2,500 super. yds. (more or less) of reconstructed road surface. Specification can be seen, and work viewed, by appointment with Surveyor of the Council.

JULY 6.—**Spalding.**—CARTING.—Spalding U.D.C. invite tenders for carting cast-iron pipes. Specification, etc., may be obtained of Mr. John Bailey, Town Surveyor, Spalding, upon receipt by him of the sum of 5s.

JULY 7.—**Axminster.**—STEAM ROLLING.—Axminster R.D.C. invite tenders for steam rolling about 8,000 cubic yds. of stone on main and district roads. Particulars can be obtained on application to the District Surveyor, Mr. Geo. A. Millard, of Axminster.

JULY 9.—**Romsey.**—STEAM ROLLING.—The R.D.C. invite tenders for the hire of a steam roller for the year ending March 31, 1910. Full particulars and form of tender may be obtained on application to Mr. C. W. Chiddy, Surveyor, Romsey.

JULY 10.—**Ripley.**—GAS LIGHTING.—The Trustees of Ripley Wesleyan Methodist Church invite tenders for pipes and fittings for a complete installation of gas lighting for the church. Specification, etc., may be obtained from Mr. E. Hutchinson, Nottingham-road, Ripley, near Derby, on payment of 10s. 6d.

JULY 10.—**Rotherham.** MOTOR TOWER WAGON.—The Rotherham Corporation invite tenders for the supply of a petrol-driven tower wagon. Particulars can be had on application to the Tramways Manager (Mr. E. Cross), Tramways Office, Rotherham.

JULY 12.—**East Ashford.**—STEAM ROAD ROLLER.—East Ashford R.D.C. invite tenders for the supply and delivery of a 12-ton steam road roller. Particulars, etc., obtained on application to Mr. Horace Hamilton, Clerk to the Council, 11, Bank-street, Ashford, Kent.

JULY 13.—**Blaydon.**—SCAVENGING, ETC.—The Blaydon U.D.C. invite tenders for the removal and disposal of contents of ashpits, house refuse, etc., at Blaydon, Winlaton, and Winlaton Mill. Specifications, etc., may be obtained from Mr. Robert Biggins, Sanitary Inspector, at the offices of the Council, Blaydon-on-Tyne.

JULY 15.—**Lambeth.**—SLOP CARTS.—The Lambeth B.C. invite tenders for the supply of six slop carts. Specification, etc., may be obtained from Mr. Henry Edwards, C.E., Borough Engineer, Town Hall, Brixton-hill, S.W.

✱ JULY 19.—**West Ham.**—SCHOOL FURNITURE, ETC.—The Education Committee of the County Borough of West Ham invite tenders for school desks and repairs and tar paving of playgrounds. See advertisement in this issue for further particulars.

PAINTING, etc.

JULY 5.—**Bristol.**—PAINTING.—Tenders are invited for interior painting, etc., at the Children's Homes at Downend, in accordance with the specification, which is deposited for inspection. Form can be obtained at office of Mr. J. J. Simpson, Clerk to the Guardians, St. Peter's Hospital.

JULY 5.—**Buckingham.**—PAINTING.—Buckingham U.D.C. invite tenders for the painting of the sewer ventilating shafts and columns. Full particulars, etc., may be obtained on application to Mr. James Smith, Borough Surveyor.

JULY 5.—**Keighley.**—PAINTING, ETC.—Keighley Education Committee invite tenders for whitewashing and distempering at Holycroft Senior, Junior, Infant, and Parkwood Mixed Council Schools; and also for painting outside at Eastwood, Holycroft Senior, Junior, Infant, and Parkwood Mixed Council Schools. Tenders are also invited for varnishing and whitewashing and distempering at Keighley C. of E. School. Particulars may be obtained from the Secretary on application.

JULY 5.—**Taunton.**—PAINTING.—The T.C. invite tenders for the work of painting, etc., of Tone Bridge, Taunton, in accordance with the specification prepared by Mr. David Edwards, A.M.Inst.C.E., Borough Surveyor, Municipal Buildings, Taunton. Form of tender and further particulars can be obtained on application to the Borough Surveyor.

JULY 6.—**Great Yarmouth.**—PAINTING.—The Education Committee invite tenders for outside painting and inside colouring work at the School of Science and Art, 59, South-quay. Specifications can be seen, and forms of tender obtained, at the office of the Borough Surveyor, Town Hall, Great Yarmouth.

JULY 7.—**Bury.**—PAINTING, ETC.—The Education Committee invite tenders for painting and decorating St. Mary's R.C., Clerke-street Wesleyan, St. Paul's (Bell), Guardian Angels Infants', St. Paul's (Huntley), and St. Chad's Schools. Specifications, etc., may be obtained upon application to the Director of Education, 8, Bank-street, Bury.

JULY 7.—**Glamorganshire.**—PAINTING.—Glamorgan C.C. invite tenders for painting and cleaning work at schools. Specifications, etc., at office of Glamorgan C.C., Westgate-street, Cardiff.

JULY 7.—**Huddersfield.**—PAINTING, ETC.—The Education Committee invite tenders for the painting, colouring, etc., of schools. General specification, etc., may be seen, and forms of tender and short specification for each school may be obtained, on application at the offices of Mr. K. F. Campbell, M.Inst.C.E., Borough Engineer, 1, Peel-street.

JULY 7.—**Manchester.**—PAINTING.—The Sanitary Committee invite tenders for painting the exteriors of the Corporation Dwellings in Rochdale-road (Alexandra-place), Pollard-street (Granville-place), Oldham-road (No. 2) Block (Victoria-square). Specifications may be obtained at the office of the City Architect, Town Hall, upon payment of 10s. 6d. for each specification. All cheques or postal orders are to be made payable to the order of "The Manchester Corporation."

JULY 7.—**Plumstead.**—PAINTING, ETC.—The Woolwich Guardians invite tenders from painters and decorators for work proposed to be executed at the Nurses' Home and Infirmary, Plumstead. The specification can be inspected at the Steward's Office at the Infirmary, Plumstead, or at the office of Messrs. Church, Quick, & Whincop, William-street, Woolwich, architects to the Guardians.

JULY 9.—**Barking Town.**—PAINTING, ETC.—The U.D.C. Education Committee invite tenders for internally cleaning, distempering, painting, etc., the North-street, Westbury, and Gascoigne-road Schools, Barking. Specifications may be seen, and forms of tender obtained, at the office of the architect, Mr. C. J. Dawson, F.R.I.B.A., No. 16, Cambridge-road, Barking.

JULY 12.—**Eccles.**—PAINTING.—The Public Libraries Committee of the Eccles Corporation invite tenders for the painting and decoration of the interior and exterior of the Carnegie Public Library, Church-street, Eccles. Copies of the specification, etc., may be obtained from Mr. Edwin Parkes, Town Clerk, Town Hall, Eccles, on receipt of a deposit of 1*l.* 1s. Drawings may be inspected at the office of the hon. architects, Messrs. Potts & Hennings, 34, Victoria-buildings, Victoria-street, Manchester.

✱ JULY 14.—**Chelsea.**—CLEANING AND PAINTING.—The Council of the Borough of Chelsea invite tenders for cleaning and painting the outside of the Town Hall, King's-road, S.W. See advertisement in this issue for further particulars.

JULY 14.—**Knutsford.**—DECORATING.—Bucklow Guardians invite tenders for decorating, etc., the male and female sides of the Union Workhouse Hospital at Knutsford. A specification of the work and further information and conditions may be obtained on application to the Master of the Workhouse, Knutsford.

✱ JULY 22.—**Kensington.**—PAINTING AND CLEANSING.—The Kensington Board of Guardians ask for tenders for painting and cleansing the Infirmary, Marloes-road, Kensington. Forms of tender are to be had at the office of the Guardians. See advertisement in this issue for further particulars.

JULY 23.—**Scartop.**—PAINTING, ETC.—Tenders are invited for painting, lighting (acetylene or petrol gas), and heating Scartop Sunday-school. Mr. Joseph Sunderland, Stanbury, near Keighley.

NO DATE.—**Barkisland.**—PAINTING, ETC.—Painting, colouring, and decorating the interior of Christ Church, and also for pointing roofs, etc., and doing some minor repairs outside. Particulars can be obtained from Mr. W. Clark, Endowed School, Barkisland.

NO DATE.—**Lavey.**—POINTING.—Estimates are required for pointing the external walls and painting and decorative work interior of Parish Church, Lavey, Knockloghrim, Co. Derry. Specifications can be had on application to Rev. Michael O'Neill, P.P., or to Messrs. E. & J. Byrne, 4, Waring-street.

ROADS SANITARY, AND WATER WORKS.

JULY 5.—**Auckland.**—SEWAGE WORKS.—The R.D.C. of Auckland invite tenders for the construction of Sewage Disposal Works at Toddhills. Plans, etc., can be seen, and further particulars obtained, on application to Mr. Charles Heslop, Sanitary Surveyor, 9, Cradock-street, Bishop Auckland.

JULY 5.—**Crompton.**—TANKS, ETC.—The Crompton U.D.C. solicit tenders for the construction of timber-framed separating tanks, filters (of brick and concrete), equalising tanks, together with the other works appurtenant thereto. Plans, etc., may be seen, and bills of quantities obtained, at the office of the Engineer, Mr. J. P. Wilkinson, M.Inst.C.E., 301-4, Cathedral-street, Manchester, on payment of a deposit of 1*l.* 1s.

JULY 6.—**Aspull.**—LAYING DRAIN TILES.—The Aspull D.C. invite tenders for labour in cutting and laying 3-in. and 4-in. drain tiles on a portion of Aspull Moor. Plans and sections can be seen at the Council Offices, Aspull, during office hours. The Council also invite tenders for 6,000 3-in. and 4,000 4-in. drain tiles.

JULY 6.—**Handsworth.**—MAKING-UP.—The U.D.C. of Handsworth invite tenders for making Arden-road. All particulars may be obtained on application to Mr. H. Richardson, A.M.Inst.C.E., Surveyor to the Council.

JULY 6.—**Merthyr Vale.**—ASPHALTING.—Merthyr Tydfil Education Committee invite tenders for excavating, filling, forming, and asphalting of playgrounds at Merthyr Vale Council Schools. Drawings may be seen, and copy of the specification, etc., obtained, on application to Mr. E. Stephens, Clerk, or the Committee's Architect, Mr. J. Llewellin Smith, M.S.A.

JULY 6.—**Motherwell.**—SEWER, ETC.—The T.C. of the Burgh of Motherwell invite tenders for the construction of a new sewer in fire-clay pipe, cast-iron pipe, and concrete cluvert, extending to 1,470 yds. or thereby. Drawings may be seen at the office of the Engineer, Mr. Wm. Allan Carter, M.Inst.C.E., 51, Queen-street, Edinburgh, from whom copies of the specification, etc., can be obtained on payment of 1*l.* 1s.

JULY 6.—**Spalding.**—EXCAVATION, ETC.—Spalding U.D.C. invite tenders for the excavation of pipe trench, seven miles or thereabouts; also for laying therein 12-in. internal diameter cast-iron pipes 12 ft. long, and filling in trench. Plan of route may be seen at the Town Surveyor's Office, Ayscoughfee Hall, Spalding, and specification with further particulars may also be obtained, upon payment of the sum of 5s.

JULY 7.—**Dromore.**—SEWER.—The Dromore U.D.C. invite tenders for laying a sewer on the Banbridge-road, in accordance with the plan, etc., to be seen at office of Mr. A. Fielding Wright, Town Clerk, Town Hall, Dromore.

JULY 7.—**East Keswick.**—SEWERAGE.—Wetherby R.D.C. invite tenders for the construction of about 3,040 lin. yds. of 9-in., 8-in., and 6-in. earthenware pipe sewers, with manholes, etc.: also sewage tanks, continuous filters, and other works. Drawings, etc., may be seen, and quantities, etc., obtained, at the office of the Engineer, Mr. H. A. Johnson, M.Inst.C.E., 15, The Exchange, Bradford; also at the offices of Mr. E. H. Coates, Solicitor, Wetherby, on payment of a deposit of 2*l.* 2s.

JULY 8.—**Hale.**—MAKING-UP.—Hale U.D.C. invite tenders for the making-up of Nursery-avenue, Hale. Plans, etc., can be seen, and bills of quantities, etc., obtained, at the office of the Council's Surveyor, Mr. S. A. Pickering.

JULY 8.—**Skegness.**—TAR PAVING.—The Skegness U.D.C. invite tenders for the supplying and laying of about 7,800 super. yds. of tar paving on the footpaths in Drummond-road, Skegness. Specifications, etc., may be obtained on application to Mr. Ralph Hudson, the Surveyor to the Council.

JULY 9.—**Dorchester.**—SEWER.—The T.C. of the Borough of Dorchester invite tenders for an extension of the high-level sewer from Damer's-road to St. Martin's-road. Plans, etc., may be seen at the office of Mr. Percival T. Harrison, A.M.Inst.C.E., the Borough Engineer, during office hours.

JULY 9.—**Hull.**—STREETS.—Mr. Ernest Whitlock, architect and surveyor, 26, Scale-lane, Hull, invites tenders for construction of Westcott-street and side streets.

JULY 10.—**Fowey.**—SEWERS.—Laying of new main sewers and constructing manholes on the Tower Park Estate, Fowey, for Mr. J. C. S. Rashleigh, M.D. Plans, etc., may be seen at the Estate Office, Menabilly, Par Station, on Tuesdays, Thursdays, and Saturdays. Mr. W. H. Polglaze, Surveyor, Menabilly Estates Office, Menabilly, Par Station.

JULY 10.—**Leith.**—CONCRETING.—The Provost, Magistrates, and Councillors invite tenders for laying Portland cement concrete in various back courts in the Burgh. Specifications, etc., may be had, and any information obtained, at the Burgh Surveyor's Office, Charlotte-street, Leith.

✱ JULY 12.—**Camberwell.**—KERBING, ETC.—The Camberwell B.C. invite tenders for kerbing, channelling, foundations for asphalt paving, roadwork, etc. See advertisement in this issue for further particulars.

JULY 12.—**Ilford.**—STREET WORKS.—Ilford U.D.C. invite tenders for levelling, metalling, flagging, lighting, and making good Paget-road, Ilford. Plans, etc., may be seen, and form of tender obtained, on application to Mr. H. Shaw, M.Inst.C.E., Surveyor to the Council, Town Hall, Ilford, on payment of a deposit of 2*l.* 2s.

JULY 12.—**Kensington.**—WOOD PAVING WORKS.—The Council of the Royal Borough of Kensington invite tenders for providing and laying creosoted deal blocks. Specifications can be seen, and further particulars obtained, at the office of the Borough Engineer and Surveyor, Town Hall, Kensington.

JULY 12.—**South Moor and Oxhill.**—STREET WORKS.—Stanley U.D.C. invite tenders by schedule of prices for private street improvement works. Plans, etc., may be seen, and quantities, etc., obtained from Mr. Joseph Routledge, Surveyor, Council Offices, Stanley.

JULY 13.—**Manchester.**—TRACK WORK.—The Tramways Committee of the Manchester Corporation invite tenders for the supply of special (permanent way) track work. Specifications, etc., may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester, on deposit of 2*l.* 2s.

JULY 13.—**Mansfield.**—SEWAGE-DISPOSAL WORKS.—The T.C. invite tenders for the construction of sewage-disposal works between Bath-lane, in the said Borough, and Old Mill-lane, in the Parish of Mansfield Woodhouse. Plans, etc., may be seen, and form of tender, etc., obtained (on deposit of 5*l.* 5s.), at the office of Messrs. Vallance & Westwick, White Hart-chambers, Mansfield, the engineers for the work.

JULY 13.—**Mount Bellew.**—SINKING WELLS.—The R.D.C. invite tenders for sinking wells from their present depth sufficiently to secure a plentiful supply of spring water and erect pumps. The present depth of the wells, specifications for the works required to be done, etc., can be had on application to the Council's Engineer, Mr. A. M. Cornwall, Thomasfort, Ballygar.

JULY 13.—**Ruddington.**—WATER MAINS.—The R.D.C. of Basford invite tenders for providing and laying about five miles of cast-iron water mains in the Parish of Ruddington, near Nottingham. Plans, etc., may be seen by appointment, and copies of the bills of quantities, etc., obtained from Mr. S. Maylan, Engineer and Surveyor, Public Offices, Basford, Nottingham, on deposit of 2*l.* 2s.

JULY 13.—**Selston and Kimberley.**—SEWER.—Basford R.D.C. invite tenders for the construction of about 300 yds. of 9-in. pipe sewer in the Parish of Selston, and small extension of sewer in the Parish of Kimberley. Plans, etc., may be seen, and copies of the bills of quantities obtained, from Mr. S. Maylan, Engineer and Surveyor, Basford Public Offices.

JULY 14.—**Birmingham.**—PAVING.—The Public Works Committee invite tenders for excavating, laying concrete foundation, and paving with granite setts and wood certain streets and roads. The drawings may be seen, and specification, etc., obtained, at the office of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, the Council House, Birmingham, on deposit of the sum of 2*l.*

JULY 14.—**Brighouse.**—REPAVING BETHEL-STREET.—The Highways Committee invite tenders for the repaving of the above street, along with the re-flagging. Plans, etc., may be seen, and specification, etc., obtained, upon application to Mr. S. S. Haywood, Borough Engineer and Surveyor, Municipal Offices, Brighouse.

✱ JULY 14.—**Fulham.**—MAKING-UP CARRIAGE-WAY.—The Council of the Fulham Borough will receive tenders for carriageway of Ranelagh-avenue, sect. 2. See advertisement in this issue for further particulars.

JULY 14.—**Manchester.**—HEATON PARK RESERVOIR.—The Waterworks Committee invite tenders for the supply of iron and steel work, valves, sluices, etc., required in connexion with the reservoir. Specification, etc., may be obtained on application to Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, upon receipt of cheque for 2*l.* 2s.

JULY 14.—**Manchester.**—THIRLMERE AQUEDUCT: WELDED STEEL PIPES AND COLLARS.—The Waterworks Committee invite tenders for the supply of about 3,600 tons of welded steel pipes and collars, 44 in. and 40 in. diameter. Specification, etc., may be obtained on application to Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, upon receipt of a cheque for 2*l.* 2s.

JULY 15.—**Morden.**—STREET WORKS.—Croydon R.D.C. invite tenders for making-up Queen's-place, Queen's-road, and Stanley-road, in the Parish of Morden. Plans, etc., may be seen, and form of tender obtained, on application to Mr. R. M. Chart,

Digitized by Google

F.S.I., Surveyor to the Council, Council Offices, Katharine-street, Croydon.

JULY 16. — **Bournemouth.**—SEWER.—Tenders are invited for new sewer on East Cliff. Full particulars, etc., can be obtained of the Borough Engineer, Mr. F. W. Lacey, at whose office drawings can be seen, provided that the sum of 1*l.* 1s. has been previously deposited with him in respect to the tender.

JULY 17.—**Chard.**—SEWERAGE AND SEWAGE-DISPOSAL WORKS.—The Corporation of Chard invite tenders for the construction of stoneware pipe sewers, tanks, bacteria filters, culvert, storm-water overflow chamber, and other works. Drawings may be seen, and specification, etc., obtained, at the office of Mr. S. G. Rogers, Borough Engineer and Surveyor, on payment of a deposit of 3*l.* 3s.

JULY 19.—**Spennymoor.**—STREET WORKS.—Spennymoor U.D.C. invite tenders for the making of back Barker-street, Spennymoor. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. C. R. Spencer, Surveyor to the Council, Silver-street, Spennymoor.

JULY 20.—**Lewisham.**—KERBING, ARTIFICIAL STONE PAVING, METALLING AND CHANNELLING WORKS, SEWERAGE WORKS, AND SUPPLY OF IRON FENCING.—The plans, etc., may be seen, and forms of tender obtained, at the Town Hall, Catford (Surveyor's Department).

JULY 20.—**Steyning West.**—ROAD IMPROVEMENTS.—Steyning West R.D.C. invite tenders for carrying out certain road improvements in the Parish of Upper Beeding, consisting of :—(*a*) Widening the road at East Mead; (*b*) raising the level of the road at the bottom of Small Dole Hill and providing new culvert; (*c*) lowering the gradient of Small Dole Hill. The drawings may be seen, and the specification obtained, from Mr. Frederick Slaughter, A.M.Inst.C.E., High-street, Steyning.

JULY 20. — **Stonehouse.** — SEWER.—The District Committee of the District of the Middle Ward of the County of Lanark invite tenders for providing and laying about 720 yds. of 9-in. diameter outfall sewer and relative works. Plans may be seen, and copies of the specification, etc., obtained, at the office of Mr. W. L. Douglass, C.E., District Engineer, District Offices, Hamilton, on payment of 1*l.* An assistant engineer will meet intending contractors at Stonehouse Station at 10.15 a.m. on July 6.

JULY 21. — **Springhead.** — ASPHALTING.—West Riding C.C. (Springhead District Education Sub-committee) invite tenders for asphalting the playgrounds. Specifications may be obtained from Mr. Edgar T. Woodhead, Divisional Clerk, Cloth Hall-street, Huddersfield, on receipt of stamped addressed envelope.

NO DATE.—**Yeovil.**—SEWER.—The Yeovil Corporation invite tenders for the laying of a 12-in. and 9-in. pipe sewer in West Hendford. For particulars apply Mr. A. Oddy, Borough Surveyor, Municipal Offices, Yeovil.

NO DATE. — **Yeovil.**—STREET WORKS.—The Yeovil Corporation invite tenders for private street works in Victoria-road. For particulars apply Mr. A. Oddy, Borough Surveyor, Municipal Offices, Yeovil.

STONES, MATERIAL, AND STORES.

JULY 6.—**Adlington.**—NEW SETTS, SCAPPLING OLD SETTS, AND PAVING.—The U.D.C. invite tenders. Further particulars, etc., may be had from the Surveyor, Mr. Robert Edge, at the Council Office, Adlington.

JULY 6.—**Bromley.**—ROAD MATERIALS.—The Council invite tenders for the supply of road materials. Forms can be obtained on payment of a sum of 10s.

JULY 6. — **Wellingborough.** — GRANITE.—The U.D.C. of Wellingborough invite tenders for the supply of granite. Forms to be obtained from Mr. J. T. Parker, Clerk to the Council, 29, Church-street, Wellingborough.

JULY 7.—**Edinburgh.**—PIPES.—The Edinburgh and District Water Trust invite tenders for supplying a quantity of cast-iron pipes. The drawings may be seen, and copies of specification, etc., may be obtained, at the Superintendent's Office, No. 12, St. Giles-street, Edinburgh.

JULY 8. — **Southend-on-Sea.** — MAIN SEWERAGE WORKS (CONTRACT No. 1).—The Corporation invite tenders for the supply and delivery of concrete tubes. Copy of general conditions, etc., may be obtained on application to the Borough Engineer, Mr. Ernest J. Elford, M.Inst.M.E., Municipal Buildings, Southend-on-Sea, on payment of a deposit of 5*l.* 5s.

JULY 8. — **Southend-on-Sea.** — MAIN SEWERAGE WORKS (CONTRACT No. 2).—The Corporation invite tenders for the supply and delivery of approximately 1,450 tons of 33-in. cast-iron turned and bored pipes and specials. Copy of general conditions, etc., may be obtained on application to the Borough Engineer, Mr. Ernest J. Elford, M.Inst.M.E., Municipal Buildings, Southend-on-Sea, on payment of a deposit of 5*l.* 5s.

* JULY 12.—**London.**—MATERIALS AND STORES.—The Port of London Authority invite tenders for the supply of materials and stores to be delivered at various docks. See advertisement in this issue for further particulars.

JULY 13.—**Ladysmith, Natal.**—CAST-IRON PIPES, ETC.—The Corporation of Ladysmith, Natal, invite tenders for the manufacture, supply, and delivery "free on rail" at the Port of Durban, Natal, of cast-iron pipes and special castings, etc. Specifications, etc., may be obtained from Messrs. Webster, Steel, & Co., London Agents, 5, East India-avenue, Leadenhall-street, London, E.C., on deposit of 2*l.* 2s.

JULY 14.—**Leeds.**—MATERIALS.—The Street Lighting Committee invite tenders for supply of articles. Further particulars, etc., may be obtained on application to the Superintendent of Street Lighting, Springwell-street Depôt, between 9 and 11 a.m. daily.

JULY 22. — **Portsmouth.**—SUPPLIES.—Portsmouth Education Committee (Elementary Education) invite tenders for supplies of sundries to the various schools, required for cleaning and petty repairs. Samples may be seen, and form of tender obtained, at the Committee's Offices, Town Hall, Portsmouth.

AUGUST 9. — **London.** — TELEGRAPH POLES.—The Postmaster-General invites tenders for the supply of telegraph poles of (*a*) home-grown larch or fir; (*b*) Swedish, Norwegian, Finland, or Russian red fir. Forms of tender, containing all particulars, may be obtained on application to Mr. G. Morgan, Controller of Stores, Stores Department, G.P.O., 17-19, Bedford-street, London, W.C.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*MANUAL TRAINING INSTRUCTOR	London C.C.	50*l.*, etc.	July
*WOODWORK INSTRUCTOR	London C.C.	120*l.* per annum, etc.	July 9
*SANITARY INSPECTOR	East Barnet Valley U.D.C.	100*l.* per annum, increasing	July 14
*BUILDING INSPECTOR	East Barnet Valley U.D.C.	50*l.* per annum, increasing	do.
*INSTRUCTOR IN MANUAL WORK	Liverpool Education Com.	150*l.* per annum	July 17
*SANITARY SURVEYOR AND INSPECTOR OF NUISANCES	Shoeburyness U.D.C.	75*l.* per annum	July 20

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDING ESTATE, TOOTING BROADWAY—At the Mart	Walton & Lee	July 6
*MANUFACTURING PREMISES, SOUTH BERMONDSEY—At the Mart	H. W. Smith	do.
*TOTTENHAM AND ENFIELD, BUILDING ESTATE AND NURSERY—At the Mart	Protheroe & Morris	July 13
*DARTFORD (WEST), PRIORY-PARK ESTATE—At the Bull Hotel, Dartford	Protheroe & Morris (in conjunction with Rupert Mitchell)	do.
*FREEHOLD BUILDING, BAPTIST CHAPEL—At the Mart	C. C. & T. Moore	July 15
*FREEHOLD BUILDING LAND	Ellis, Copp, & Co.	July 20
*FREEHOLD GROUND RENTS, BUILDING LAND, ETC.—At the Mart	Farebrother, Ellis, & Co.	July 22

RECENT SALES.—*Continued from page* 24.

By SEXTON & GRIMWADE (at Colchester).

Thorpe-le-Soken, Essex.—White Hall Farm, 130 a. 0 r. 14 p., f.	£2,150
James Land Farm, 69 a. 1 r. 6 p., f.	1,350
Fordham, Essex.—The Place Farm, 115 a. 2 r. 33 p., f.	1,800
Wakes Colne, Essex.—Enclosure of accommodation land, 4 a. 0 r. 38 p., f.	175
White Colne, Essex.—Three enclosures of arable and pasture, 10 a. 2 r. 28 p., f.	340
Stratford St. Mary, Suffolk.—Four cottages and 6 acres, f.	300
Polstead, Suffolk.—Two enclosures of arable land, 10 a. 2 r. 9 p., f.	200
Nayland, Suffolk.—Court-st., Wharf, and plot of land, f.	140

By J. C. H. ROBINSON (at Bedford).

Felmersham, Beds.—Harrowden Farm, 86 a. 1 r. 18 p., f.	1,625
Hardwick Farm, 54 a. 1 r. 39 p., f.	700
A freehold cottage and 28 p.	115
Whiteground Field, 14 a. 1 r. 14 p., f.	250
Milton Ernest, Beds.—East Manor Farm, 306 a. 0 r. 6 p., f.	3,850
West Manor Farm and allotments, 308 a. 1 r. 17 p., f.	4,300
Enclosure of arable land, 8 a. 2 r. 24 p., f.	340
Post-office row cottages (four), f.	320
Kempston, Beds.—West End Farm, 243 a. 2 r. 1 p., f.	4,900
The Tithe Farm, 90 a. 3 r. 33 p., f.	2,900
Six cottages and gdns., f.	550
Two cottages and pasture land, 4 a. 1 r. 11 p., f.	370
Stevington, Beds.—Allotment gdns., 12 a. 2 r. 3 p., c.	405

June 21.—By BUCKLAND & SONS.

Winkfield, Berks.—Bishop's-la., enclosure of grass land, 3 a. 1 r. 23 p., f.	205
Chawridge-la., enclosure of meadow land, 3 a. 0 r. 24 p., f.	190

By GREEN & SON.

City.—22, Martins-la. (warehouse and offices), area 625 ft., f., p.	2,010

By KEMSLEYS'.

Beauchamp Rothing, Essex.—Gubbis Farm, 89 a., f.	£1,675

By KING & CHASEMORE.

Horsham, Sussex.—The Chase and 59 a. 2 r. 11 p., f.	3,500
Griggs Farm, 49 a. 0 r. 35 p., f.	3,200

By BAXTER, PAYNE, & LEPPER.

Lee.—Dacre Pk., f.g. rents 81*l.*, reversion in 17 to 20½ yrs.	2,680
Beckenham.—Blandford-rd., f.g. rents 30*l.*, reversion in 87 yrs.	570

By A. BURTENSHAW & SON (at Eastbourne).

Eastbourne.—22, Bourne-st., f., y.r. 40*l.*	555
Wilmington, Sussex.—Rose cottage, f.	330
Lucks land, 26 a. 0 r. 1 p., f.	1,400

By JAMES ELEY (at Martin).

Martin, Lincs.—Two cottages and 4 a. 3 r. 39 p., f.	250

June 22.—By BROAD, WILTSHIRE, & PENNY.

Catford.—Blyth Hill and Upper Winchester-rd., f.g. rents 26*l.*, reversion in 77 yrs.	580
Finchley.—Granville-rd., f.g. rents 26*l.*, reversion in 93 yrs.	570

By H. DONALDSON & SONS.

Dalston.—14. St. Philips-rd., u.t. 14½ yrs., g.r. 6*l.*, yr. 38*l.*	360

By MAY & PHILPOT.

Harrow.—2, 4, 6, and 8, Blawith-rd., f., y.r. 110*l.*	1,650
Bloomsbury.—19 and 20, Woburn-pl., profit rental of 130*l.* for 18 yrs.	900

By BROWETT & TAYLOR.

Norwood.—59 to 65 (odd), Bungalow-rd., f., gross rental 98*l.* 16s.	920
156, Clifton-rd. (s), f., w.r. 32*l.* 10s.	225
Paddington.—1 to 4, Carlton Mews, ut. 36¼ yrs., g.r. 12*l.*, gross rental 94*l.* 18s.	160

By JOSHUA BAKER, COOKE, & STANDEN.

High Barnet.—1, Clyde Villas, f., y.r. 45*l.*	645

By TYLER & Co.

Forest Row, Sussex.—Cookhams Farm and woodland, 49 a. 0 r. 23 p., f.	£1,550
Horsted Keynes, Sussex.—Freehold pasture and woodland, 37 a. 2 r. 7 p.	1,050
Moons Mead Farm and woodland, 35 a. 0 r. 25 p., f.	850
Hang Down Mead, 5 a. 1 r. 27 p., f.	400
West Hoathly, Sussex.—Freehold pasture and woodland, 35 a. 0 r. 2 p.	725

By S. & G. KINGSTON (at Spalding).

Weston, Lincs.—Farmhouse and enclosures, 80 a. 3 r. 15 p., f. and c.	4,525

June 23.—By BEARD & SON.

Notting Hill.—70, 72, and 74, Cornwall-rd., f., gross rental 260*l.*	1,940
Cornwall-rd., f.g.r. 10*l.*, reversion in 55 yrs.	240
23, 24, and 25, Thorpe-mews, u.t. 54 yrs., g.r. 1*l.*, gross rental 95*l.*	440
63, St. Quintin-av., u.t. 70 yrs., g.r. 10*l.*, gross rental 87*l.*	470

By DANIEL & IVERSON.

Norwood.—229 to 237 (odd), Gipsy-rd. (s.), u.t. 56 yrs., g.r. 33*l.* 8s., y.r. 281*l.* 10s.	2,550

By E. HUGH HENRY.

Clapham.—7, Cedars-mews, u.t. 50 yrs., g.r. 5*l.*, w.r. 36*l.* 8s.	200

By FULLER, MOON, & FULLER.

Tottenham.—High-rd., f.g. rents 58*l.*, reversion in 69 yrs.	1,195
Catford.—Engleheart-rd., f.g. rents 24*l.*, reversion in 88 yrs.	495
Croydon.—Tamworth-rd., f.g.r. 8*l.*, reversion in 44 yrs.	210
Sumner-rd., f.g.r. 7*l.* 15s., reversion in 36 yrs.	220
Hathaway-rd., f.g. rents 39*l.*, reversion in 90 yrs.	780
117 and 119, North End, f., y.r. 180*l.*	4,115

By MARK LIELL & SON.

Limehouse.—98, Turners-rd., u.t. 55 yrs., g.r. 5*l.*, e.r. 44*l.*	175
Plaistow.—48, Balaam-st. (s.), f., y.r. 35*l.*	490
50 to 64 (even), Balaam-st., f., w.r. 270*l.*	1,900
100 and 102, Jedburgh-rd., f., w.r. 57*l.* 4s.	420
West Ham.—31 to 43 (odd), Park-gr., f., w.r. 200*l.*	1,240

Digitized by Google

By RUSHWORTH & BROWN.
St. Giles.—8, Lumber-ct. (a.), u.t. 25½ yrs., g.r. 20*l.*, w.r. 80*l.* 12s. £115

By DOUGLAS YOUNG & Co.
Southwark.—7 and 8, Boddy's Bridge, f., w.r. 49*l.* 8s. 230
Wandsworth.—238, Earlsfield-rd. (s.), f., y.r. 38*l.* 410
Clapham.—47, Sandmere-rd., u.t. 71 yrs., g.r. 7*l.* 12s., w.r. 52*l.* 300
Dalston.—97, Navarino-rd., and l.g.r. 5*l.* 5s., u.t. 41¾ yrs., g.r. 10*l.* 6s., y.r. 32*l.* 190

By JAMES ELEY (at Boston).
W gtoft, Linca.—The Eagle b.h. and 2 a. 3 r. 34 p., f. 415

By BENJAFIELD & WOOD (at Hull).
Cottingham, Yorks.—Castle-rd., two enclosures, 6 a. 2 r. 28 p., f. 590

By H. A. WOOFF (at Ringwood).
Ellingham, Hants.—Goulding's Farm and Blashford House, 81 a. 0 r. 19 p., f. 4,350

By WOODHAMS, SON, & PARKS (at Crowhurst).
Crowhurst, Sussex.—Blacklands Estate, seven freehold plots 938

By MADDISON, MILES, & MADDISON (at Yarmouth).
Ormesby St. Michael, Norfolk.—The Old Manor House and 2 a. 1 r. 35 p., f. 550

By H. F. RUSSELL & SON (at Hereford).
Burghill, Hereford.—Broomhill Farm, 18 a. 1 r. 32 p., f. 1,225
Canon Pyon, Hereford.—Freehold cottage and 6 a. 0 r. 17 p., ... 520

June 24.—By DANIEL WATNEY & SONS.
Lambourne, Berks.—The Manor or Lordship of Lambourne Deanery, with its rights, privileges, emoluments, appurtenances, and the rectorial tithe rent charges of 1,280*l.* 5s. per annum (⅛ share) 7,500

By VENTOM, BULL, & COOPER.
Eastcote, Middlesex.—Catlin's-la., freehold land, 4¼ acres 640

By WAGSTAFF & SONS.
Islington.—36, Gibson-sq., u.t. 18 yrs., g.r. 7*l.*, e.r. 45*l.* 190

By HERRING, SON, & DAW.
Canonbury.—Canonbury-pk. North, l.g. rents 65*l.*, u.t. 27 yrs., g.r. 2*l.* 755
Canonbury.—Rotherfield-st., l.g.r. 9*l.*, u.t. 32 yrs., g.r. nil. 110
Streatham.—Knollys-rd., l.g.r. 11*l.*, u.t. 67 yrs., g.r. 1*l.*, with reversion 155
Brixton.—1, 3, 5, and 7, Tregenna-st., u.t. 47 yrs., g.r. 16*l.*, gross rental 102*l.* 520
60 and 62, Cornwall-rd., u.t. 52 yrs., g.r. 6*l.*, gross rental 67*l.* 465
Streatham.—66, 68, 82, and 84, Natal-rd., u.t. 61 yrs., g.r. 18*l.*, gross rental 140*l.* 850
121 to 127 (odd), Hambro-rd., u.t. 74 yrs., g.r. 21*l.*, gross rental 145*l.* 775

By STIMSON & SONS.
Battersea.—126 to 132 (even), Chatham-rd., f., gross rental, 117*l.* 700
Forest Hill.—46 and 48, Sunderland-rd., u.t. 65¾ yrs., g.r. 20*l.* 4s., p. 550
Fulham.—33, Stamford-rd., u.t. 56 yrs., g.r. 6*l.* 15s., y.r. 36*l.* 250
Kentish Town.—57 and 59, Kentish Town-rd., u.t. 20 yrs., g.r. 10*l.* 10s., y.r. 78*l.* 315
Islington.—225, Liverpool-rd., f., y.r. 30*l.* 300
162, Barnsbury-rd. (s.), f., y.r. 48*l.* 700
Dalston.—85, Dalston-la. (s.), u.t. 75 yrs., g.r. 40*l.*, y.r. 80*l.* 425
Highbury.—22 and 67, Kelvin-rd., u.t. 55 yrs., g.r. 14*l.*, y.r. 80*l.* 575
90, Riversdale-rd., u.t. 61 yrs., g.r. 8*l.*, y.r. 33*l.* 250
Holloway.—182 and 184, Drayton-pk. (s.), u.t. 67 yrs., g.r. 22*l.*, y.r. 72*l.* 450
Hornsey.—Eastfield-rd., freehold strip of land .. 100
New Southgate.—18, Beaconsfield-rd., f., y.r. 40*l.* 450
Edmonton.—5 and 6, Townsend-ter., u.t. 69 yrs., g.r. 6*l.* 6s., gross rental 50*l.* 250

By CECIL HOBDAY (at Putney).
Putney.—11, Holmbush-rd., u.t. 86 yrs., g.r. 10*l.*, e.r. 65*l.* 710
4, Montserrat-rd., u.t. 77 yrs., g.r. 7*l.*, e.r. 45*l.* 515

June 25.—By DIXON & Co.
Forest Hill.—46 and 48, Queenswood-rd., u.t. 86 yrs., g.r. 14*l.*, y. and e.r. 64*l.* 550

By FURBERS.
Chelsea.—41 and 43, Uverdale-rd., u.t. 72¾ yrs., g.r. 13*l.* 15s., w.r. 111*l.* 16s. 530
Battersea.—20 and 22, Orkney-st., u.t. 55¼ yrs., g.r. 6*l.*, w.r. 59*l.* 16s. 320
302, Queen's-rd., u.t. 64½ yrs., g.r. 7*l.* 10s., w.r. 71*l.* 10. 250
Notting Hill.—189, Lancaster-rd., u.t. 51½ yrs. g.r. 7*l.*, w.r. 67*l.* 12s. 125
Islington.—30 and 32, Pembroke-st., u.t. 40½ yrs., g.r. 8*l.* 8s., w.r. 72*l.* 18s. 410
27, Stanmore-st., u.t. 35½ yrs., g.r. 6*l.*, y.r. 38*l.* 210
Kentish Town.—42, Lady Somerset-rd., u.t. 68 yrs., g.r. 8*l.*, y.r. 50*l.* 300

By MULLETT, BOOKER, & Co.
Paddington.—168, Westbourne-ter., 17 and 25, Westbourne Terrace-rd., u.t. 33 yrs., g.r. 50*l.*, y.r. 240*l.* 960
18, Cleveland-gdns., u.t. 30 yrs., g.r. 2*l.*, p. .. 1,400

By HAMPTON & SONS.
Holloway.—40, Pemberton-gdns., u.t. 42 yrs., g.r. 5s., y.r. 50*l.* 420

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	,, delivered
Flettons	1 4 6	,, at railway depôt.
Best Fareham Red	3 12 0	,, ,, ,,
Best Red Pressed Ruabon Facing	5 0 0	,, ,, ,,
Best Blue Pressed Staffordshire	3 15 0	,, ,, ,,
Do. Bullnose	4 0 0	,, ,, ,,
Best Stourbridge Fire Bricks	3 14 0	,, ,, ,,
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	,, ,, ,,
Headers	9 17 6	,, ,, ,,
Quoins, Bullnose, and Flats	13 17 6	,, ,, ,,
Double Stretchers	15 17 6	,, ,, ,,
Double Headers	12 17 6	,, ,, ,,
One Side and two Ends	16 17 6	,, ,, ,,
Two Sides and one End	17 17 6	,, ,, ,,
Splays and Squints	15 7 6	,, ,, ,,
Best Dipped Salt Glazed Stretchers	10 7 6	,, ,, ,,
Headers	9 17 6	,, ,, ,,
Quoins, Bullnose, and Flats	13 17 6	,, ,, ,,
Double Stretchers	15 17 6	,, ,, ,,
Double Headers	12 17 6	,, ,, ,,
One Side and two Ends	16 17 6	,, ,, ,,
Two Sides and one End	17 17 6	,, ,, ,,
Splays and Squints	15 7 6	,, ,, ,,
Second Quality White and Dipped Salt Glazed	1 5 0	,, less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	,, ,,
Best Portland Cement	28 0	per ton, ,,
Best Ground Blue Lias Lime	19 0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.	

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	,, ,,
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	,, ,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	,, ,,

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer ,,	1 6	,, ,,
Greenshill ,,	1 10	,, ,,
Darley Dale in blocks	2 4	,, ,,
Red Corsehill ,,	2 2	,, ,,
Closeburn Red Freestone	2 0	,, ,,
Red Mansfield ,,	2 4	,, ,,

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. ,,
6 in. rubbed two sides ditto, ditto	2 6	,, ,,
3 in. sawn two sides slabs (random sizes)	0 11½	,, ,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	,, ,,
1½ in. to 2 in. ditto, ditto	0 6	,, ,,
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. ,,
6 in. rubbed two sides ditto	3 0	,, ,,
3 in. sawn two sides slabs (random sizes)	1 2	,, ,,
2 in. self-faced random flags	0 5	,, ,,

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 ,, ,,	13 17 6	,, ,,
20×10 first quality ,,	13 0 0	,, ,,
20×12 ,, ,,	13 15 0	,, ,,
16×8 ,, ,,	7 5 0	,, ,,
22×10 best blue Portmadoc	12 12 6	,, ,,
16×8 ,, ,,	6 12 6	,, ,,
20×10 best Eureka unfading green	15 17 6	,, ,,
20×12 ,, ,,	18 7 6	,, ,,
18×10 ,, ,,	13 5 0	,, ,,
16×8 ,, ,,	10 5 0	,, ,,
20×10 permanent green	11 12 6	,, ,,
18×10 ,, ,,	9 12 6	,, ,,
16×8 ,, ,,	6 12 6	,, ,,

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000, at rly. depôt.
Hip and Valley tiles	3 7	per doz. ,,
Best Broseley tiles	50 0	per 1000 ,,
Do. Ornamental tiles	52 6	,, ,,
Hip and Valley tiles	4 0	per doz. ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 ,,
Do. Ornamental do.	60 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 0	,, ,,
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 ,,
Do. Ornamental do.	54 6	,, ,,
Hip tiles	4 1	per doz. ,,
Valley tiles	3 8	,, ,,
Best "Rosemary" brand plain tiles	48 0	per 1000 ,,
Best Ornamental tiles	50 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 8	,, ,,
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 ,,
Do. pressed	47 6	,, ,,
Do. Ornamental do.	50 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 6	,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 ,,
Hand-made sand-faced	45 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 6	,, ,,

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	,,
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	,,
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	... 4 15 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
,, ,, 3 in. by 9 in.	13 10 0	... 14 0 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
,, ,, 3 in. by 9 in.	12 10 0	... 13 10 0
Battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	,,
Seconds, regular sizes	38 0 0	,,
Oddments	28 0 0	,,
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak logs— Large, per ft. cube	0 3 0	... 0 3 9
Small ,, ,,	0 2 6	... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¾ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	... 0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak per load	17 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0
Prepared Flooring, etc.— 1 in. by 7 in. yellow, planed and shot	Per square. 0 13 6	... 0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	... 0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	... 0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	... 0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	... 0 13 6
1 in. by 7 in. ,, ,,	0 14 0	... 0 18 0
¾ in. by 7 in. white ,, ,,	0 10 0	... 0 11 6
1 in. by 7 in. ,, ,,	0 12 9	... 0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

Digitized by Google

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.		£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	...	7 10 0
Compound Girders, ordinary sections	9 0 0	...	10 0 0
Steel Compound Stanchions	11 0 0	...	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	...	10 0 0
Flitch Plates	9 0 0	...	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	...	8 10 0

METALS.

	Per ton, in London. £ s. d.		£ s. d.
IRON—			
Common Bars	8 10 0	...	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	...	9 5 0
Staffordshire "Marked Bars"	10 10 0	...	—
Mild Steel Bars	8 15 0	...	9 5 0
Hoop Iron, basis price	9 5 0	...	9 10 0
" " Galvanised	17 0 0	...	—
(*And upwards, according to size and gauge.)			
Sheet Iron, Black—			
Ordinary sizes to 20 g.	9 15 0	...	—
" " 24 g.	10 15 0	...	—
" " 26 g.	12 5 0	...	—
Sheet Iron, Galvanised, flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	...	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	...	—
" " 26 g.	16 10 0	...	—
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	18 0 0	...	—
" " 22 g. and 24 g.	18 10 0	...	—
" " 26 g.	20 0 0	...	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	...	—
" " 22 g. and 24 g.	14 15 0	...	—
" " 26 g.	16 5 0	...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	...	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	...	—
" " " 26 g.	15 0 0	...	—
Cut Nails, 3 in. to 6 in.	10 10 0	...	11 0 0
(Under 3 in., usual trade extras.)			

LEAD, &c.

	Per ton, in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 3lb. and up.	16 7 6	...	—
Pipe in coils	16 17 6	...	—
Soil pipe	18 17 6	...	—
Compo pipe	19 17 6	...	—
ZINC—Sheet—			
Vielle Montagne	26 10 0	...	—
Silesian	26 5 0	...	—
COPPER—			
Strong sheet per lb.	0 1 0	...	—
Thin "	0 1 1	...	—
Copper nails "	0 0 10	...	—
Copper wire "	0 0 10	...	—
BRASS—			
Strong Sheet "	0 0 11	...	—
Thin "	0 1 0	...	—
TIN—English Ingots "	0 1 5	...	—
SOLDER—Plumbers' "	0 0 7	...	—
Tinmen's "	0 0 9½	...	—
Blowpipe "	0 1 0	...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
3 oz. thirds	4½d " "
" fourths	4½d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅛ "	3½d. " "
¼ "	2½d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 2
" " " in barrels	"	0 2 3
" " " in drums	"	0 2 6
Boiled " " in barrels	"	0 2 6
" " " in drums	"	0 2 9
Turpentine in barrels	"	0 2 6
" " in drums	"	0 2 8
Genuine Ground English White Lead	per ton	20 10 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

PUBLISHER'S NOTICES.

Nat. Tel., 6112 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME XCVI. (January to June, 1909) will be given as a supplement with the issue of July 10th.

CLOTH CASES for Binding the Numbers will shortly be ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE NINETY-SIXTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, will be ready on the 20th inst.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ... 2s. 0d.
Each additional line ... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ... 4s. 6d.
Each additional line (about ten words) ... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ... 2s. 6d.
Each additional line (about ten words) ... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

, Stamps must not be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office, 4, Catherine Street, Strand, W.C., free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

APPLEBY.—For erecting a new elementary school, for Westmorland County Education Committee. Mr. J. Hartley, architect, Swadford-chambers, Skipton:—

Masons and Joiners: Brassington Bros., Settle*	£3,807‡
Plumbers: J. & W. Scott, Penrith*	474
Painting: J. & W. Scott, Penrith*	95
Plastering: Dodgson, Appleby*	204
Slating: Dodgson, Appleby*	306
Ironwork: Chatterley, Appleby*	147

‡ Insurance £12.

BANSTEAD (Surrey).—For the erection of two cottages in Ferndale-road, for Mr. S. Stevens. Mr. Douglas Weightman, architect, 78, North-end, Croydon:—

Pink	£536	Martin	£465
Sedgwick	495	Sanders	448
Everitt	480	Roberts & Tilbury*	435

BROWN LEES (Staffs).—For erecting a Primitive Methodist church. Messrs. Elijah Jones & Jackson, architects, 10, Albion-street, Hanley:—

S. Heath	£1,854	C. Comes & Sons	£1,620
J. Moss	1,700	Colclough & Breeze	1,620
Sambrook	1,700	Bennett Bros.	1,590
Young & Son	1,619	C. Smith	1,575
Yorke & Goodwin	1,630	J. Poole	1,560
Colley & Lindop	1,626	W. Sherratt, Smallthorne, Stoke*	1,554
Tompkinson & Betteley	1,626	C. W. Machin	1,455
J. Gallimore	1,625		

CARDIFF. — For private street works, for the Corporation:—

Osmond & Son*	£523 11 6	Pentre-street.
	164 11 10	Pentre-lane.
	358 19 8	Penydyris-street.
	256 1 4	Dereas-place.
	428 17 6	Mardy-street.
	203 3 7	Merches-place.
	384 7 2	Victoria-avenue.
	90 8 2	Victoria-lane.
	80 0 0	Turberville-place.
T. R. Williams*	591 1 8	Marlboro-road.
	129 6 10	Marlboro-lane.
	255 6 4	Trafalgar road.
	125 10 8	Moorland-lane.
	362 8 3	Lechuro-place.

CARLISLE.—For painting, etc., of three elementary schools, for the Education Committee. Mr. H. C. Marks, M.Inst.C.E., 36, Fisher-street, Carlisle:—

Brook-street Schools.

W. M. Hill & Sons, Carlisle*	£175 2 9

Caldewgate Schools.

Ellis & Keenan, Carlisle*	145 10 6

St. Bede's School.

Ling & Mark, Carlisle*	47 5 0

CHAPEL-EN-LE-FRITH.—For reconstruction of bridges—Contract No. 1: (1) Crowden Brook, (2) Upper Booth, (3) Barber Booth, (4) Yeoman's, in Edale, (5) Kilhill, (6) Watergate, Hope, and (7) Shatton; Contract No. 2: (8) Corn-heys, (9) Wash, (10 and 11) Blackbrook, (12) Bridgeholme Green, (13) Whitehough, (14) Baghouse, and (15) Collinacre Combs, for the Rural District Council. Mr. T. Partington, engineer, Bank-chambers, Market-place, Chapel-en-le-Frith. Quantities by engineer:—

H. Ashley, Bentinck-chambers, Mansfield £1,707

CHURWELL.—For erecting a warehouse, etc., Lane Side Mills, for Messrs. Charles Scarth & Sons, Ltd. Mr. T. A. Buttery, architect, Queen-street, Morley, and 1, Basinghall-square, Leeds:—

Masons: W. & H. Sykes, Morley	£1,560 0 0
Joiners: J. Clegg & Sons, Morley	896 0 0
Plumber: J. W. Stakes, Morley	82 10 0
Plasterers: G. Crossley & Son, Birstall	180 0 0
Slater: J. Kellett, Morley	159 0 0
Ironfounders: J. Bagshaw & Sons, Batley	65 0 0

DUNTON GREEN.—For erecting a new Council school, to accommodate 250, at Dunton Green, near Sevenoaks, for Kent Education Committee. Mr. W. H. Robinson, Architect:—

S. Edwards	£3,823 0	Elmore & Son	£2,850
F. L. Honess	3,484 0	West Bros.	2,845
A. E. Taylor	3,170 0	R. A. Lowe	2,844
W. L. Ballard & Co.	3,169 0	G. E. Wallis & Sons, Ltd.	2,835
J. Gregory	3,110 0	W. P. Banks	2,827
D. Godden & Son	3,065 0	Spencer, Santo, & Co., Ltd.	2,803
W. F. Blay, Ltd.	3,057 0	J. & M. Patrick	2,778
E. W. Jacobs	3,024 14	Pethick Bros.	2,777
R. Corben & Son	2,998 0	W. Wallis, Ltd.	2,775
Thomas & Edge	2,992 0	Davis & Leaney	2,758
R. Durtnell & Sons	2,950 0	F. Webster & Son	2,730
Hayward & Paramor	2,898 0	E. Wallis	2,670
H. Somerford & Son	2,891 0	C. E. Skinner	2,664
Strange & Son, Ltd.	2,870 0	J. A. Davison	2,629
		J. Podger & Son, Bromley‡	2,569

‡ Recommended for acceptance.

ELLON (Scotland).—For additions to U.F. Church. Messrs. Wilsons & Walker, architects, 181A, Union-street, Aberdeen:—

Mason: G. Henderson, Ellon	£69 0 0
Carpenter: W. Auld, Ellon	53 10 0
Slater: F. McRae, Ellon	16 10 6
Plumbers: J. Laing & Sons, Ellon	14 8 6
Plasterer: R. Moir, Aberdeen	10 14 0
Painter: W. Auld, Ellon	3 15 0
Heating: Shuras, Laing, & Co., Aberdeen	12 3 9

HEMSWORTH.—For the erection of athletic club buildings at Hemsworth Collieries, near Wakefield, for the South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Messrs. Garside & Pennington, architects, Pontefract and Castleford. Quantities by architects:—

F. H. & J. W. Moore	£4,348 3 0
Simpson & Watson	4,143 15 11
W. Hanley	3,873 16 9
W. H. Dews & Co.	3,768 0 0
S. Johnson & Son, Mirfield*	3,678 14 7

HEPTONSTALL.—For cleaning, painting, and decorating the parish church. Messrs. Sutcliffe & Sutcliffe, architects. New-road, Hebden Bridge:—

Watson & Watson	£363 0	T. Blacka	£127 10
E. Harland & Sons	245 0	J. Lord	115 0
W. H. Holdsworth	239 8	Wrigley & Sons, Hebdon Bridge*	148 0
Simpson & Sons, Ltd.	192 0		

HOLMBROOK (Cumberland).—For relaying of the drainage at Holmrook Hall:—

J. H. Neal & Son	£671 4 0
R. G. W. Bradley	473 0 0
J. Dawson	420 18 0
D. Burns & Co.	325 0 0
J. Watson, Gosforth, Cumberland*	323 12 6

[These are alternative tenders, providing for main pipes and overflow pan septic tank, to be of 6-in. weldless steel spigot and faucet tube, as manufactured by British Mannesman Tube Co., Ltd., which have been decided upon.]

ISLEWORTH.—For painting, distempering, etc., at the Mogden Isolation Hospital, for Richmond Borough Council and the Heston and Isleworth Urban District Joint Isolation Hospital Committee:—

G. & H. Huffell	£98 18 6	Perrott & Co.	£59 14 9
J. Moseley	95 10 0	P. McCarthy	59 0 0
C. Clarke	90 10 0	Speechley & Smith	59 0 0
W. Lacey	81 10 0	Chudleigh Bros.	54 0 0
Jarman & Co.	74 0 0	H. Tinkler	54 0 0
A. Cutler & Sons	72 0 0	J. Wills	48 3 4
H. Morgan	70 12 6	F. D. Hidden	47 18 8
W. E. Stone	62 10 0	T. Davies, 24, Northcote-road, St. Margaret's-on-Thames*	42 0 0
T. J. Homan	61 10 0		
F. W. Hampton	60 10 0		
R. W. Clayden	60 10 0		
H. C. Osborne	60 0 0		

KENSINGTON.—For making up the mewsway of Hayden's-place, Portobello-road, for the Royal Borough of Kensington:—

G. Wimpey & Co.	£210	W. Griffiths & Co., Ltd.	£182
E. Rogers & Co.	193	J. Mowlem & Co., Ltd.*	167

LINTHWAITE.—For erecting a dwelling-house, New Royd. Mr. J. Ainley, architect and surveyor, Chapel-street, Linthwaite:—

Masons: D. Haigh & Sons, Linthwaite*	£200 0 0
Joiner: J. Lawton, Linthwaite*	72 10 0
Plumber: E. Rayner, Milnsbridge*	40 0 0
Plasterer: A. Taylor, Golcar*	22 0 0
Concreter: J. Cooke, Huddersfield*	15 5 3
Slaters: Allinson's, Ltd., Milnsbridge*	21 0 0

LITTLE HAVEN (Pembrokeshire).—For interior renovation of Congregational Chapel, for Tabernacle, English Congregational Chapel, Little Haven, Pembrokeshire. Mr. Rich. Rogers, builder, Broad Haven, Pembrokeshire:—

Plastering and Reseating.

W. Williams	£195 0 0
A. Heatherly & Co.	160 0 0
R. Rogers, Post Office, Broad Haven, Pembrokeshire*	159 0 0

Digitized by Google

LLANELLY.—For new Calvinistic Methodist Chapel, Glenalca-road, Llanelly. Mr. W. Griffiths, F.S.I., architect and surveyor, Falcon-chambers, Llanelly:—
G. Mercer, Llanelly* £2,108 18 10

LLANELLY.—For first section of Y.M.C.A. new building. Mr. Wm. Griffiths, architect, Falcon-chambers Llanelly:—

G. Mercer	£3,599 17 3
D. Davies & Son	3,550 0 0
Brown, Thomas, & John	3,466 10 0
B. Howell & Son	3,399 0 0
W. Williams	3,380 0 0
D. W. Davies	3,373 9 7
T. P. Jones, Llanelly*	3,300 0 0

LONDON.—For repairing, cleaning, and painting the interior of SS. James's and Peter's school, Soho. Mr. E. R. Robson, F.S.A., architect:—

S. & S. Dunn	£242 0	Parkinson & Son	£173 0
H. & C. Lea	198 0	Streek & Co.	168 8
A. Daniel	174 0		

LONDON.—For alterations to Messrs. Fabbro & Sons' hall, Falcon-road, Battersea, S.W. Mr. Herbert Bignold, architect, 242, Lavender-hill, S.W.:—

J. Nicks	£425	E. Tucker*	£334
W. Hammond	360		

LONDON.—For alterations to the police-station at Notting Dale, W. Mr. J. Dixon Butler, Architect, F.R.I.B.A., Surveyor to the Metropolitan Police, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Aldelphi-terrace, Strand:—

F. & H. F. Higgs	£2,290	McCormick & Sons	£2,090
Mowlem & Co., Ltd.	2,240	Willmott & Sons	2,074
Treasure & Son	2,233	Lovatt, Ltd.	2,057
F. G. Minter	2,232	Grover & Son	1,994
Holloway Bros.	2,220	Ashby & Horner	1,988
C. Ansell	2,200	Godson & Sons	1,947
Higgs & Hill, Ltd.	2,184		

LONDON.—For swing bridge for Grosvenor Canal property, for the Westminster City Council:—
F. Morton & Co., Hamilton Iron Works, Garston, Liverpool £280

LONDON.—Painting, repairs, etc., at baths, for the Westminster City Council:—

Love & Co.	£191 10	T. Coulthard, 113, Eaton-terrace*	£145 1
J. R. Sims	183 10		
T. W. Haylock	172 5		

LONDON.—For bridge to island in boating lake, Victoria-park, for the London County Council:—

A. Handyside & Co., Ltd.	£424 0 0
General Iron Foundry Co., Ltd.	340 0 0
Wilkins Wire Rope Co., Ltd.	336 0 0
Heenan & Froude, Ltd.	260 0 0
J. M. Henderson & Co.	242 10 0
Alnwick Foundry and Engineering Co., Ltd.	219 0 0
Goddard, Massey, & Warner, Ltd.	214 14 1
Kirk & Randall	207 0 0
D. Rowell & Co., 31, Old Queen-street, Westminster, S.W.*	201 0 0
E. W. Sweet	200 0 0
W. Muirhead & Co.‡	198 0 0

‡ Not to specification.

CLEANING AND/OR PAINTING WORK AT CERTAIN LONDON COUNTY COUNCIL SCHOOLS.

Lewisham.—The "Hither Green."

Kirk & Randall	£514	E. Proctor & Sons	£398
C. Wall, Ltd.	460	Friday & Ling	375
J. Scott Fenn	425	L. Kazak, 3 and 4, Station-road, Belvedere*	235
W. Akers & Co.	419		
Thomas & Edge	399		

Marylebone, E.—The "Portland."

J. & M. Patrick	£309 0	G. Neal	£256 0
Spencer, Santo, & Co., Ltd.	278 0	J. R. Sims	249 1
J. C. Richards & Co.	270 0	J. Peattie & Sons, 18, Dorset-street*	225 0

Marylebone, W.—Bell-street.

J. C. Richards & Co.	£560	J. R. Sims	£482
Spencer, Santo, & Co.	551	J. & M. Patrick	449
G. Godson & Sons	545	J. Peattie & Sons, 18, Dorset-street*	410
Ford & Walton, Ltd.	540		
G. Neal	518		

St. Pancras, N.—The "Acland."

G. E. Wallis & Sons, Ltd.	£634	C. P. Roberts & Co.	£574
G. Godson & Sons	598	Ford & Walton, Ltd.	564
Patman & Fotheringham, Ltd.	596	G. Kirby	538
Brand, Pettit, & Co.	591	G. S. & S. Williams & Son	379
Marchant & Hirst	582	H. W. Langsford, 29, Little Albany-street*	312

Finsbury, C.—Risinghill-street.

T. G. Hawkins & Sons	£638	J. Peattie	£584
W. Hornett	624	C. F. Kearley, 4, Great Marlborough-street*	557
H. & E. Lea	596		
W. Reason	589		

LONDON.—For manual training centre, Park-walk, Chelsea, for the London County Council:—

Lapthorne & Co.	£1,265 0 0	Lole & Co	£1,159 11 10
A. Roberts & Co., Ltd.	1,264 0 0	Lathey Bros.	1,157 0 0
J. & W. Drake	1,238 7 6	E. Triggs	1,063 0 0
T. Bendon Ltd.	1,219 3 3	S. N. Soole & Son, Sheen-road, Richmond*	1,052 14 10
J. Peattie	1,162 0 10		

[The estimate of the Architect (Education) comparable with the tenders is £1,136.]

LONDON.—For new school, Torriano-avenue, St. Pancras, E., for the London County Council:—

Spencer, Santo, & Co., Ltd.	£14,758 0 0
Leslie & Co., Ltd.	14,056 0 0
Patman & Fotheringham, Ltd.	13,671 0 0
W. Johnson & Co., Ltd.	13,465 0 0
J. Smith & Sons, Ltd.	13,442 0 0
McLaughlin & Harvey, Ltd.	13,192 4 7
McCormick & Sons	13,068 0 0
L. H. & R. Roberts	13,020 0 0
G. Godson & Sons	12,987 0 0
Treasure & Son, Ltd.	12,951 0 0
C. F. Kearley	12,893 0 0
J. Chessum & Sons, 7A, South-place‡	12,648 5 3
E. Lawrance & Sons	12,530 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £13,154.]
‡ Recommended for acceptance.

MACCLESFIELD.—For rebuilding the Back-lane Bridge, Great Warford, for the Rural District Council. Mr. T. Carswell, surveyor, 19, King Edward-street, Macclesfield:—
L. Brown & Sons, Wilmslow* £56 5 0

NANCEGOLLAN.—For reseating and renovating of church, for the Trustees of the Wesleyan Church. Mr. W. J. Winn, architect, Helston, Cornwall:—

J. Wear	£306 0 0	T. Willoughby	£350 0 0
Mitchell & Bond	294 0 0	G. Bond	336 0 0
Praed & Radj.	315 0 0	N. Jory, Connerton and Hayle*	265 10 0
J. White	309 19 6		
J. Williams	354 0 0		

NEW INN.—For erecting a church at New Inn, for the Wesleyan Methodist Trustees. Mr. D. C. Udell, architect, Commercial-street, Pontypool:—

R. Partridge	£500 2 6	W. H. Campbell, Pontypool*	£382 2 6
J. Burgoyne & Son	435 0 0		
Powell Bros.	402 5 0		

NORWICH.—For the enlargement of Thompson school, for Norfolk Education Committee. Messrs. W. O. & O. P. Milne, architects, 16, St. James's-street, Bedford-row, London, W.C.:—
W. P. Vout, Caston, near Attleboro £387 15
[Twelve tenders received.]

OXFORD.—For additions and alterations to St Ebbe's School, for the Managers. Mr. H. Quinton, architect and surveyor, 22, George-street, Oxford Quantities by the architect:—

Fathers & Son	£1,057	Wooldridge & Simpson	£739
Chandler	860	Kingerlee & Sons, Queen-street, Oxford*	648
Horne	849		
Hutchins & Son	825		
Fisher	811		
Simms & Son	775		

[Architect's estimate, £700.]

PENSHAW STAITHES.—For building miners' hall Mr. J. Palliser, architect, Philadelphia, Fence Houses Durham. Quantities by architect:—
J. Berriman, 1, Morton-avenue, Fence Houses, Co. Durham £680

PEPPARD.—For the erection of a ten-bed ward and laundry, for the Trustees of Maitland Sanatorium for Working Class Patients, at Peppard, near Reading Mr. W. Roland Howell, F.R.I.B.A., architect, Reading, and 18, Percy-street, W.:—

Bell & Sons	£1,378 10	The Frazzi Co., Ltd.	£1,175 4
J. Trinder & Son	1,210 10	J. Cox, Stokerow, Henley*	1,117 0
C. Butler	1,198 0		
G.S. Lewis & Bros.	1,180 0		

QUAKER'S YARD (Wales).—For erecting a retaining wall at the South Wales and Monmouthshire Truant School. Mr. C. M. Davies, architect, 112, High-street, Merthyr Tydfil:—

	Per cub. yd. s. d.
A. Jones	19 6
W. Brown	19 6
H. Prothero	16 6
Walcott, Jones, & Co.	12 0
E. Price	12 4
G. Price, Treharris*	11 0

RAMSGATE.—For remodelling the sanitation and alterations to the Royal Hotel, Ramsgate. Mr. Stanley H. Page, F.S.I., architect, 6, Queen-street, Ramsgate:—

W. W. Martin	£1,123	Turner & Watts	£1,075
J. T. May	1,120	E. R. Dunn*	1,034
Grummant Bros.	1,085		

SHUTTLEWOOD.—For sewerage works at Shuttlewood, near Bolsover, for Bolsover Urban District Council. Mr. W. G. H. Browne, Engineer and Surveyor, Bolsover, near Chesterfield:—
Spiby & Booth, High-street, Staveley, near Chesterfield* £1,290

SITTINGBOURNE.—For erecting a new Council school at Sittingbourne, to accommodate 400, for Kent Education Committee. Mr. W. H. Robinson, Architect:—

W. Sanderson	£9,787 2 9	C. E. Skinner	£4,687 0
S. Edwards	5,582 0 0	E. Fuller & Sons	4,675 0
S. E. Moss & Co.	5,195 0 0	Amos & Foad	4,669 0
J. & M. Patrick	5,001 0 0	H. J. Tidy	4,649 0
T. Higgs	4,995 0 0	G. H. Denne & Son	4,640 0
Drowler & Co.	4,940 0 0	T. Monk	4,601 0
H. Dixon	4,882 0 0	Pethick Bros., Ltd.	4,588 0
D. Godden & Son	4,818 0 0	S. Wise	4,577 0
West Bros.	4,755 0 0	G. Baker & Son	4,499 0
Hayward & Paramor	4,771 0 0	Jones & Andrews	4,475 0
Thomas & Edge	4,762 0 0	W. J. Ballard & Co.	4,464 0
G. Gates & Sons	4,750 0 0	E. Bishop & Sons	4,371 0
Spencer, Santo, & Co., Ltd.	4,738 0 0	J. A. Davison	4,347 0
G. E. Wallis & Sons, Ltd.	4,721 0 0	L. Seager	4,336 0
A. S. Ingleton	4,697 0 0	W. & L. Bowes, Milton Regis‡	4,312 10

‡ Recommended for acceptance.

SOUTHAMPTON.—For building additions at St. Michael's House, for the Corporation. Mr. J. A. Crowther, Borough Engineer:—

G. R. Long	£3,498	W. G. Blake	£3,110
Golding & Ansell	3,353	J. Nichol	3,068
J. Douglas	3,299	F. Osman	2,984
Dyer & Sons	3,270	Jenkins & Sons, Ltd., Southampton*	2,964
Exors. of W. Franklin	3,150		
H. Stevens & Co.	3,127		

STOTFOLD.—For erecting a dwelling-house, etc., for Mrs. Whitehead. Mr. S. Redhouse, architect and surveyor, Letchworth. Quantities by surveyor:—

Morris & Son	£975 10	Phillips	£845 0
Raban & Sons	856 0	Turner & Sons	804 0
Bailey & Sons, Ltd., Ashwell*	850 0	F. W. E. Harris	770 0

THORNTON HEATH.—For Thornton Heath Beulah Baptist Church. Messrs. G. Baines & Sons, architects, 5, Clement's-inn, Strand, W.C.:—

Estimate "A"		Estimate "A"	
Higgs & Hill	£4,284	Patman & Fotheringham	£3,700
C. Brightman & Son	3,979	Knight & Son	3,679
Mattock Bros.	3,857	Lawrence & Son	3,677
Holliday & Greenwood	3,790	J. W. Jerram	3,652
F. G. Minter	3,752	W. Akers & Co.	3,633
J. & C. Bowyer	3,747	Battley Sons & Holness*	3,587
J. Smith & Sons	3,727		

LONDON.—Painting and repairs to libraries, for the Westminster City Council:—

Names and Addresses of Persons Tendering.	Buckingham Palace-road Library.	South Audley-street Library.	St. Martin's-lane Library.	Totals.	Tender for doing whole of Work.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Haywood Bros.	110 5 0	199 10 0	170 5 0	480 0 0	470 0 0
E. Jenner	120 15 0	151 5 0	147 10 0	419 10 0	410 0 0
J. Styles & Son	82 0 0	132 0 0	147 0 0	361 0 0	350 0 0
Love & Co.	74 0 0	139 0 0	110 0 0	323 0 0	323 0 0
Burton Bros.	77 0 0	130 10 0	116 10 0	324 0 0	320 0 0
J. R. Sims, 60, Horseferry-road*	72 0 0	136 0 0	106 0 0	314 0 0	309 0 0

LONDON.—For paving works, for the Westminster City Council:—

Street.	Present Paving.	Proposed New Paving.	Estimated Cost.		Tender.	
			£ s. d.		£ s. d.	
Artillery-row	Asphalt	Asphalt (rock)	920 0 0	Limmer Asphalte Paving Co., Ltd.	669 16 8	
Belgrave-square‡	Macadam	Yellow deal	13,000 0 0	Acme Flooring and Paving Co., Ltd.	11,345 0 0	
Berkeley-street	Wood	Yellow deal	1,050 0 0	Acme Flooring and Paving Co., Ltd.	803 7 6	
Bow-street	Wood	Yellow deal	1,045 0 0	Acme Flooring and Paving Co., Ltd.	830 18 8	
Brick-street	Granite setts	Yellow deal	573 0 0	Improved Wood Pavement Co., Ltd.	455 15 10	
Buckingham-gate	Asphalt	Asphalt (rock)	1,600 0 0	Limmer Asphalte Paving Co., Ltd.	1,211 19 2	
Carey-street	Wood	Yellow deal	380 0 0	Acme Flooring and Paving Co., Ltd.	307 19 4	
Carlos-place	Wood	Yellow deal	787 10 0	Acme Flooring and Paving Co., Ltd.	649 14 2	
Gillingham-street	Macadam	Yellow deal	533 0 0	W. Griffiths & Co., Ltd.	466 12 11	
Leicester-square (west side)	Wood	Yellow deal	625 0 0	Acme Flooring and Paving Co., Ltd.	484 17 4	
Nassau-street	Setts	Yellow deal	235 0 0	Improved Wood Pavement Co., Ltd.	183 0 0	
St. James's-square (north half)	Wood	Yellow deal	3,700 0 0	W. Griffiths & Co., Ltd.	2,654 5 0	
Soho-square (west side, Frith-street to Soho-street)	Wood	Yellow deal	1,150 0 0	Acme Flooring and Paving Co., Ltd.	829 3 8	
Upper Belgrave-street	Macadam	Yellow deal	1,950 0 0	W. Griffiths & Co., Ltd.	1,729 2 6	
Wardour-street	Wood	Yellow deal	900 0 0	Acme Flooring and Paving Co., Ltd.	702 17 0	
West Halkin-street	Macadam	Yellow deal	1,105 0 0	Acme Flooring and Paving Co., Ltd.	993 18 4	
York-street	Asphalt	Asphalt (rock)	1,350 0 0	Limmer Asphalte Paving Co., Ltd.	1,235 4 2	
			£30,903 10 0		£25,553 12 3	

The recommendations were accepted except ‡, which was taken back by the chairman of the committee.

Digitized by Google

TOTTENHAM.—For the construction of a new road on the Downhills estate, Tottenham, N. Messrs. David Burnett, Son, & Baddeley, surveyors, 15, Nicholas-lane, London, E.C.:—

R. Ballard	£2,271 0 0	T. Adams	£1,669 0 0
E. Peill & Sons	2,050 0 0	W. Neave & Son	1,628 0 0
J. A. Dunmore	1,910 4 3	G. Bell & Sons	1,592 0 0
Killingback & Co.	1,866 0 0	S. Kavanagh & Co.	1,587 0 0
F. Hamlett	1,827 0 0	E. T. Bloomfield	1,570 0 0
E. Parry & Co.	1,740 0 0	W. & C. French	1,455 0 0
Rowley Bros.	1,738 0 0		

TOTTINGTON.—For new Council school, for Norfolk Education Committee. Messrs. W. O. & O. P. Milne, architects, 16, St. James's-street, Bedford-row, London, W.C.:—

W. P. Vout, Caston, near Attleboro £869 4

[Eleven tenders received.]

WALTHAMSTOW.—For Coppermill-road new school, for the Education Committee. Mr. H. Prosser, M.S.A., Architect to the Committee. Quantities by Mr. G. T. G. Wright, F.S.I., 3, Gt. Winchester-street, E.C.:—

T. W. Moss	£4,050	H. Knight & Son	£3,542
B. E. Nightingale	3,948	Lawrence & Son	3,540
Spencer, Santo, & Co.	3,813	Brand, Pettit, & Co.	3,490
Brown Bros.	3,698	F. & A. Willmott	3,473
F. J. Coxhead	3,697	R. & E. Evans	3,469
H. J. Carter	3,651	Hammond & Son, Romford*	3,393
Appleby & Sons	3,600		
W. J. Maddison	3,556		

WITHERNSEA.—For sea-wall—(*a*) concreting path and constructing road and steps, for the Urban District Council. Mr. J. H. B. Kirton, surveyor, Exchange-buildings, Lowgate, Hull:—

Brebner & Co.	£594 2 0
H. Medforth	520 13 2
F. G. Armstrong	505 8 3
B. Robinson	478 12 1
Leggott & Speight	376 8 10
H. Langton & Son	359 2 3
J. Sangwin, Hull*	292 15 3
Burkett & Midgley	291 8 10½

WITHERNSEA.—For mere land gardens—(*a*) draining and laying out, (*b*) iron fencing and gates, wood fencing, for the Urban District Council. Mr. J. H. B. Kirton, surveyor, Exchange-buildings, Lowgate, Hull:—

W. Green	£884 8 1
B. Robinson	399 9 2
Leggott & Speight	325 17 6
Brebner & Co.	267 17 9
H. Langton & Son, Hull*	245 10 2
H. Medforth‡	222 15 11

‡ Withdrawn.

Wood Fencing.

H. Langton & Son, Hull*	45 0 0

[Two tenders received.]

Iron Fencing and Gates.

J. Elwell, Birmingham*	88 14 0

[Ten tenders received.]

WEST HAM.—For painting, cleaning, repairs, etc., of public buildings:—

—	Section A.	Section B.	Section C.	Section D.	Section E.	Section F.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
W. C. Bragg	13 0 0	80 17 6	133 18 6	40 5 0	—	—
Burns & Co., Plaistow	129 16 0	*380 17 0	997 0 0	24 13 0	*14 7 0	56 3 0
J. S. Fenn, Woolwich	*108 19 6	493 15 0	*908 18 6	29 0 0	16 0 0	58 12 6
H. C. Horswill, Forest Gate	167 0 0	—	—	28 10 0	15 15 0	*55 0 0
J. W. Jerram	187 0 0	388 0 0	978 0 0	25 0 0	16 0 0	88 0 0
C. J. Kemp	145 7 0	458 16 0	—	27 8 0	21 12 0	—
Kendall & Son	—	—	—	—	21 13 0	—
E. Lovely, West Ham	195 0 0	457 14 0	—	*22 10 0	18 0 0	—
Roberts & Co.	207 8 0	431 16 0	1,065 13 6	27 0 0	18 0 0	90 10 0
Stoneley & Carr	207 7 6	—	—	99 0 0	—	—
A. E. Symes	169 0 0	507 0 0	—	35 0 0	20 0 0	65 0 0
A. Webb	159 0 0	480 0 0	—	23 0 0	16 0 0	62 10 0

WITHERNSEA.—For lavatories—(*a*) constructing shops and lavatories, (*b*) providing and fixing suction pipes, for the Urban District Council. Mr. J. H. B. Kirton, surveyor, Exchange-buildings, Lowgate, Hull:—

H. Saunderson	£523 10 0	J. E. Dearmer	£484 11 11
J. Williamson	489 13 11	R. J. Smith, Hull*	448 16 0
C. Greenwood	485 14 4		

Suction Pipes, etc.

W. Siddle, Withernsea* £67 16 8

WITHERNSEA.—For groynes—constructing three timber groynes, for the Urban District Council. Mr. J. H. B. Kirton, surveyor, Exchange-buildings, Lowgate, Hull:—

R. C. Brebner & Co.	£1,328 1 8	Leggott & Speight	£726 3 9
J. Sangwin	799 8 5	H. Langton & Son, Hull*	679 2 9
H. Medforth	758 2 10		
B. Robinson	754 3 4		

WITHERNSEA.—For cemetery—(*a*) laying out and draining, shrubs, trees, and painting, for Urban District Council. Mr. J. H. B. Kirton, surveyor, Exchange-buildings, Lowgate, Hull:—

Wood & Co., Ltd.	£379 8 11	R. C. Brebner & Co.	£190 3 4
H. Langton & Sons	326 12 3	Burkett & Midgley, Withernsea*	167 19 9
W. Green	319 10 9	H. Medforth	143 13 9
B. Robinson	289 15 7		
Leggott & Speight	222 7 11		

WITHERNSEA.—For new sea-wall, slipway, and road—(*a*) constructing wall and road, (*b*) supplying and fixing iron handrails, for the Urban District Council. Mr. J. H. B. Kirton, surveyor, Exchange-buildings, Lowgate, Hull:—

H. Langton & Sons	£1,243 5 3
H. Medforth	1,184 6 0
B. Robinson	1,060 6 9
R. C. Brebner & Co.	1,039 8 4
Leggott & Speight	970 11 5
J. Sangwin, Hull*	942 2 9

Handrails.

J. Elwell, Birmingham*	35 0 0

[Ten tenders received.]

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

TILES! TILES!! TILES!!!
EVERY DESCRIPTION OF
FLOOR TILES, WALL TILES, and KERAMIC MOSAIC.
Excellent Quality. Immense Stock. Low Prices.
GIBBONS, HINTON & CO., Decorative Tile Works,
BRIERLEY HILL (S. STAFFS).

JOHN BOLDING & SONS Ltd.
MANUFACTURERS OF
WATER CLOSETS, BATHS, LAVATORIES, Etc.
IRON AND BRASS FOUNDERS.
MARBLE and SLATE MERCHANTS and MASONS.
EXTENSIVE SHOWROOMS. INSPECTION INVITED.
Just Published New Illustrated Catalogue.
FREE BY POST ON APPLICATION.
GROSVENOR WORKS, DAVIES STREET, LONDON, W.

EWART'S
Cures in 19 cases out of 20.
"EMPRESS"
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
Established 1834.
Telephone: 751 North.
SMOKE-CURE

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3466. JULY 10, 1909.

Contents.

	PAGE
Workmen's Compensation: Recent Cases	33
The Taxation of Land	34
Among the Yorkshire Abbeys	34
Notes	35
Competition for Park at Wrexham	37
Dunblane and Doune	37
St. Margaret's Hospital, Taunton	39
Notes from France	40
The Institution of County and Municipal Engineers	40
Ceremonial Key, Birmingham University	41
The Architectural Association	41
The London County Council	41
Applications under the London Building Acts, 1894 to 1908	42
Engineering Societies	42
Legal Column	42
Court of Common Council	43
London and District Borough Councils	43
London County Council Education Committee	44
Metropolitan Asylums Board	44
Projected New Buildings in the Provinces	44
Correspondence:—	
Institute of Architects	45
"A Diploma Course in Architecture"	45
Middlesbrough Library Competition	45
The London Association of Master Decorators	45
Re Proposed Steel Skeleton Framework in Buildings	45
Meetings	46
Fifty Years Ago	46
Builder Competition for a Fountain	46
Illustrations:—	
Christ Church, Spitalfields	46
Refuge Assurance Company, Manchester	47
Some Buildings in Montreal	47
Waterlow Court, Hampstead	48
Metropolitan Water Board	48
Books Received	48
Competition News	48
Obituary	48
General Building News	48
Stained Glass and Decoration	49
Appointment	49
Sanitary and Engineering News	49
Miscellaneous	49
Patents	49
Some Recent Sales	50
List of Competitions, Contracts, etc., Open	51
Prices Current	55
Tenders	56

Illustrations.

Late Renaissance Churches of London.—VII. Christ Church, Spitalfields. Drawn by Mr. John Quekett.

Refuge Assurance Company's Buildings, Manchester. Mr. Paul Waterhouse, F.R.I.B.A., Architect.

Some Buildings in Montreal, Canada.

Waterlow Court, Hampstead. Mr. M. H. Baillie Scott, Architect.

Illustrations in Text.

	PAGE
Sculptured Panel found on Site of Corstopitum	37
Sculpture on Leper Hospital, Taunton	39
Ceremonial Key for Opening of Birmingham University	41
Christ Church, Spitalfields. Plan	47
Refuge Assurance Co. Building, Manchester. Plan	47

Workmen's Compensation: Recent Cases.

HERE have recently been a considerable number of cases relating to Workmen's Compensation, but they can be very briefly reviewed.

An important decision of the House of Lords is that delivered in Anslow *v.* Cannock Chase Colliery Company, Ltd., noted in the Court of Appeal (the *Builder*, January 2). The point involved was how the average weekly earnings of a workman who had been in the same employ during the previous twelve months should be calculated. The man was a miner, and in the mine where he was engaged the full working week was five and three-quarter days, and he had actually worked for thirty-three such weeks, earning some 68*l*. Of the remaining nineteen weeks in the year he was unemployed sixteen owing to recognised incidents in the trade, stoppages, public holidays, etc., but the three remaining weeks owing to a voluntary holiday and to illness. He claimed that his average weekly earnings were to be arrived at by dividing the sum he had earned by the weeks he had actually worked, but the House of Lords, affirming the Court of Appeal, held that the question for determination was what was the earning capacity of the man under the conditions prevailing, and that to arrive at this the enforced periods of inactivity prevalent in the trade must be taken into consideration, but not those which were personal to the man himself, the result being that the total sum earned was divided by the thirty-three weeks worked and the sixteen weeks compulsory inactivity.

The decision in this case has been rendered difficult by reason of the rules laid down in Schedule 1 par. (2) of the Act with reference to the interpretation of the expression "average weekly earnings," and to a decision, Bailey *v.* Kenworthy, noted in the *Builder*, January 11, 1908. This decision has been explained by the judgments given in Anslow's case, but par. (2c) still remains obscure. That paragraph prescribes that "'Employment by the same employer' shall be taken to mean employment by the same employer in the grade in which the workman was employed at the time of the accident, uninterrupted by absence from work due to illness or other unavoidable cause." The paragraph is wholly ungrammatical, but it appears to refer not to the question involved in the above decision, "average earnings," but to the continuity of employment in connexion with which interruptions due to illness or unavoidable causes are to be disregarded.

The difficult question as to what is included in the term "injury by accident" has once again come before the Court of Appeal in the case Ystradowen Colliery Company *v.* Griffiths. A workman injured his knee, and in reaching home in his injured condition he contracted a chill, which developed into chronic asthma and bronchitis. The County Court judge held this not to be the natural result of the accident, and that the employers were not bound to pay full compensation; but the Court of Appeal sent the case back with a direction that the test to be applied was not whether the man's condition was the natural result of the accident, but whether, in fact, it was the result of the accident, following the decision of the Court in Dunham *v.* Clare (the *Builder*, June 28, 1902). In connexion with this point, the case of Eaves *v.* Blaenclydach Colliery Company, Ltd. (Current Law Reports), should be considered, as the Court of Appeal in this case held that where weekly payments are being reviewed on the ground that the man's physical incapacity has ceased, not only the muscular and physical condition have to be regarded, but the nervous condition as far as it is the result of the accident as well. In the case in question the man had suffered an injury to his foot; the foot had physically recovered, but the man was suffering from traumatic neurasthenia and anæsthesia—a recognised nervous complaint which prevented him from using his leg. The man was genuine, and was held not to be malingering, and it was held that he was entitled to compensation.

The case of Marks *v.* Carne is of considerable importance in connexion with sect. 4 of the Act. Carne was a timber merchant who had contracted to purchase and take away some growing timber. He employed a subcontractor to fell the timber, who in his turn employed his own son to assist him. The son was injured in the course of the work and claimed compensation from Carne under sect. 4, which renders the "principal" liable to his subcontractor's workmen. The son, being "a member of the subcontractor's family dwelling in his house," was not as far as the subcontractor was concerned "a workman" according to the definition contained in sect. 13 of the Act, and the Court of Appeal held that as he could have no claim against the subcontractor, his father, neither could he claim against the "principal." The importance of the decision can be grasped when it is remembered that sect. 4 only makes the "principal" liable in the first instance, as it gives him a right to indemnity by the man's own employer, and thus had the decision been otherwise the principal would have been made liable with no remedy over. A consideration of the above cases shows that this complex Act affords a mine of litigation, and as

Digitized by Google

general principles are wanting, each case may give rise to different considerations.

One more case, Gare *v.* Norton Hill Colliery Company, has come before the Court of Appeal on the question of when employment ceases. The applicant was engaged in the mine as a carter, and when the accident occurred he had left the place where he had been engaged in working and was on his way home. There were several ways in which he could have reached his home, and that he chose was the nearest, but it involved crossing some lines under the control of the Colliery Company, and whilst he was doing so some trucks were moved, and he sustained injuries which necessitated amputation of his legs. The County Court judge had found that this was the usual way the man returned home, and that he used it with the employers' knowledge, and it must also be observed that the accident happened on premises under the control of the employers. The County Court judge held that the accident had not occurred in the course of the employment, but the Court of Appeal, as a question of law, held that on the above facts the accident arose out of and in the course of the employment. In our issue, November 2, 1907, we carefully considered this question, and the case appears to fall within the principles which we then indicated; see also Cremins *v.* Guest, Keen, & Nettlefolds, noted July 4, 1908.

THE TAXATION OF LAND.

ONE of the objections against the proposed taxation of land, urged in these columns on May 22, immediately after the Budget speech was delivered, was that the proposals would prevent the easy and economical transfer of land. Since that date this objection has been brought to the notice of the Government, both by those most qualified to speak on the subject within the House of Commons and those acquainted with transactions in land outside the House, and no satisfactory arguments have been brought forward by those who favour this form of taxation which have in any way proved this apprehension to be ill-founded. The valuation in the first instance to obtain the original site value will impose very serious charges on all who are interested in land, but when once the Act is in force, no transaction can take place, at however frequent intervals, without a further valuation to ascertain the increment value, and that uncertain and arbitrary body "the Commissioners" can delay any transfer until they are satisfied that all information has been supplied them, and that duties due on previous occasions have been paid. The Attorney-General actually argued, or we should prefer to say attempted to argue, that this would not hinder transactions in land, and that as the purchaser would not be liable for the increment value tax he would not hesitate to purchase, whilst the vendor could sell in complete ignorance of the amount the Government would claim out of the purchase money. This argument is typical of those brought forward in favour of this form of taxation, and displays a singular ignorance of general business principles.

In a further recent Memorandum the Council of the Surveyors' Institution show the important influence the proposed taxation will have on rents and prices, and the serious effect the uncertainty attaching to this form of taxation will have on all transactions connected with the land. The Attorney-General can hardly be ignorant of the delay which occurs when a Government office has to be consulted, and we commend the following passage in the Memorandum to his attention. "The purchase and sale of land and the building and sale of houses are businesses like the purchase and sale of corn and tea." The Chancellor of the Exchequer is aware of the influence any alteration in the scale of taxation exerts on such a commodity as tea, and how invariably the increased taxation is borne by the consumer. In the same manner a price cannot be named for the land until the amount of the tax can be determined. If a tax varying in amount with the quality were imposed upon tea and no sale could take place without a Government office certifying the quality of the tea and the payment of the tax, what would become of the tea trade? That would be a comparatively simple matter compared to the valuation proposed of the land, the expenses of which valuation and the amount of the tax will certainly not in every case be borne alone by the vendor, but will form a very important element in the price.

AMONG THE YORKSHIRE ABBEYS.

RIGHTLY is Yorkshire proud of her cathedral and collegiate churches and the remains of her monastic houses; for no stretch of English country was of old more amply endowed than this with great religious establishments. Other regions there are which may in some sort compare with it—the valleys of Thames and of Severn, or the fenlands of East Anglia; but there is something in the combined beauty of sites and of buildings that has always distinguished this Yorkshire group and, appealed in a special way even to popular sentiment. On the sheer cliff, in the sheltering valley, on the open plain alike they stand, Abbey and Priory and Minster, such as they are yet left to us. But especially in the valleys. For our present concern is with religious houses; and of these the most typical belonged here to the Cistercian observance, whose followers habitually sought remote and inaccessible retreats—*Bernardus valles amabat*—a circumstance which in the end but ensured completer ruin.

A highly ascetic order, with ideals—or at least a system—somewhat other than that of their Benedictine parent, the Cistercians carried their severities even into the fashion of their fabrics. Not for them the clustering steeples, the sculptured frontages, the storied windows of cathedral and other ecclesiastical bodies. Simplicity ruled their designs, and uniformity—as between house and house—their structural dispositions, especially in the XIIth-century beginning of things. Yet it must be remembered they were among the first, to adopt the pointed arch, which indeed if novel, was as yet austere. Often the name of a Cistercian settlement recalls its origin and family. New foundations as they were, and in spots unchristened one may surmise by the Saxon—Rievaulx, Jervaulx, and Meaux seem to proclaim themselves daughters of Citeaux and sisters of Clairvaux; Fountains has a parallel at Fontenay, while "Byland" but veils a foreign derivation. Kirkstall is an instance to the contrary, and here precisely is said to have existed an earlier hermitage. In this category (to cite but leading examples) Fountains, mother of many, of course holds the primacy, and this both as to original importance and present condition; its situation, too, is one of the most picturesque, though now much artificialised, while it is exceptional in keeping considerable remains of the dwelling portions, or abbey proper. The preservation of the church is such that the nave at least might be roofed in, while its lofty tower (a late-mediæval departure from tradition) stands almost intact. Noteworthy, too, is the rare and beautiful feature of the east-end transept, or chapel of the nine altars; a feature matched indeed at Durham, but—what is not always recognised—at a later date. Fountains was plainly the prototype. The romantic situation of Rievaulx (how wild before its colonisation may be conceived) draws a host of admirers. The architectural remains, too, are extremely fine, though they comprise but half a splendid church and a noble refectory, both in ruin. And though ruins as such must be abhorrent to a well-ordered mind, which naturally desires, not mutilation, but a whole, yet it must be confessed that there is occasionally an accidental charm about incompletion or decay, and to Rievaulx, if to any example, belongs that strange artistry of ruin, that pictorial imperfection which serves sometimes to soften the real melancholy of such spectacles. In point of design it was one of the richest churches of its class.

Let us pass, however, from Cistercian to other monasteries, for all the leading Orders found a home in Yorkshire. The great Benedictine family—foremost of course in the order of time, and foremost in splendour of building—was established at York and Selby and Whitby. While St. Mary's at York is, alas! but a wreck, Selby, founded by the Conqueror, and a mitred House, is noted as the sole entire abbey church in the county, and thus deserves special remark. Such indeed it remained at the Reformation, fated, however, to peculiar misfortune afterwards. Accident deprived it of its tower and southern transept some 200 years ago; design removed the interesting—because rare—addition that replaced the former, quite lately; since when we have seen the disastrous fire of 1906, caused directly or indirectly by the intrusion of a gas-engine into the organ chamber. Lamentable, and in part irreparable, was the havoc, especially in the famous choir. It is a poor consolation to reflect that this choir is perhaps to be numbered among things over-praised. The characteristic

Digitized by Google

of the period (advanced Decorated) in which it was mainly built is suavity, and Selby choir is suave to a fault, and in other points not blameless. But the general vista of the interior, closed by the great window with its lovely old glass, was a memorable thing, though the extreme length of it demanded division, as of old, by a choir screen. Fortunately the window was preserved. This striking length characterises equally the exterior, whose long low roof-line dominates the featureless little town and the marshy flats around it. Of the abbatial buildings scarce a trace remains, the fine barn having disappeared in quite recent years—a belated vandalism indeed.

A strong family likeness, extending to more than general treatment, is to be found in Yorkshire, as elsewhere, between edifices of similar date, as, *e.g.*, in these Howdenshire churches; and this provincialism of architectural speech is one of the most interesting features of the subject when pursued in detail. As distinct from this, there is the equally interesting fact that, on a broad view, the farther east one goes the finer becomes the quality of design. Account for it as you may (and race is probably the main factor), the rule holds good, with interesting deviations, for the country at large, not perceptibly perhaps from town to town, but certainly from county to county and Riding to Riding. It may be accident that supplies an extreme example of it in Whitby on its eastern headland; but the instance is there, all unrecognised no doubt by the majority of the sightseers who clamber up the steep streets and the stairway of 200 steps leading to the parish church and abbey ruins. Architectural pre-eminence, grandeur of situation, and early historic renown combine to confer upon Whitby Abbey a unique distinction. From the merely scenic standpoint it must have ranked with Lincoln and Durham, and there are those yet living who can recall the time before the coherence of the whole was destroyed by the fall of the central tower—a calamity which, we may be allowed to think, would not have been possible in this more zealous generation. The design, as visible in the still extensive remains (chiefly of Early English date), is surpassingly fine, and has indeed supplied inspiration for not a few notable modern churches. The effect of the ruin is greatly enhanced by the deep rich rust of its walling, akin in colour to its native crag, and like it rudely scarred by the sea winds and salt spray of centuries. The whole scene indeed is one of strange solemnity and pathos.

On the coast again, but a mile from the cliffs, stands Burlington Priory, one of the great churches of another great building order, the Augustinian Canons. Between the complete and the ruinous, it may be taken as representative of those Conventual churches which had the fortune to be spared in part for parochial purposes, and consists to-day of a magnificent nave, to which the XIXth-century restorer added two tower-tops. Another relic among the less known, and of the same ecclesiastical filiation, is the truly splendid fragment at Guisborough in the Cleveland country (now noted for quite a different class of products). A lofty screen or gable-end, of exquisite detail, standing in singular isolation on a faultless greensward, it is practically the only remnant above ground of what was perhaps the most splendid church in the county, save only the Metropolitan Minster. Much in the same way there has survived at Kirkham little more than one small gem of design in the shape of the Gatehouse façade, set in the green seclusion of a charming valley.

It would be easy to prolong the tale of perished beauties, of the ruined Norbertine (or Premonstratensian) houses at Easby and elsewhere, of the part-surviving Gilbertine church at Old Malton—interesting besides as belonging to an order of English origin; but it must suffice to mention further the West Riding Priory at Bolton (the popular "Bolton Abbey"), visited perhaps more for its scenery than for its half-ruined church. It affords, however, a noteworthy instance of mediæval building processes. Stopped less than midway at the Reformation, Prior Moon's tower stands unfinished a little way in advance of the older west front, a beautiful Early English work, which would presently have been demolished to effect a connexion with the nave; such was the cheerful prodigality of an age still creative. The amount of mediæval work thus destroyed by the mediævals themselves is indeed astonishing.

It is not without interest that the seeker after monastic remains notices in the neighbourhood of Byland the modern Benedictine Abbey and College of Ampleforth. Standing on a woody rise near the picturesque hill-climbing village of the same name, it makes a sufficiently striking group of buildings, but we miss the traditional forms and especially the reposeful lines which our ancestors instinctively wedded with such a setting. Nor is the church of any magnitude.

Little has been said of these ancient Religious Houses in their historical aspect, but their connexion, whether as spiritual or temporal factors, with the general fortunes of the county, its people and its nobility, was, of course, an intimate one. Everywhere, in passing from abbey to abbey, one's attention is arrested by the castle, also mostly ruinous. Yorkshire, in fact, impresses one as a land of great institutions in Church and State, of great families, lay and religious, closely associated from the day of the latter's first endowment by the former to the day when the representatives of either made common cause and met a common fate in the Pilgrimage of Grace.

Many of the ruins are jealously kept; others betray a certain neglect. Much more might often be brought to light by careful excavation, such as in some cases has been already effected. Rievaulx Byland, and Whitby, among others, appeal for the revelation of the treasures lying buried beneath the broken surface of their grass-grown precincts. Without a doubt it would be possible if desired in many cases even to reconstitute portions of the fabric with their original materials; but at least the most valuable fragments should—as at St. Mary's at York—be recovered from their heaped-up graves and gathered into fitting shelter on the spot.

WILFRID RANDOLPH.

NOTES.

The Safety of London Water. AT the last meeting of the Metropolitan Water Board the Water Examination Committee stated that the fourth Report on research work by Dr. Houston was of distinctly reassuring character. In a previous report Dr. Houston has shown that typhoid bacilli are unable to live for longer than one week in unfiltered water from the Thames, Lea, and New River. Dr. Houston now makes public the results of his investigations into the vitality of the cholera vibrio, from which it may safely be concluded that this germ dies very rapidly in raw river water as the result of storage. In the particular case of the metropolitan water supply, four safeguards are offered even in the improbable event of the sources becoming infected with cholera. The germs can readily be detected by appropriate tests; the practice of storage would eliminate more than 99 per cent. of them after one week, and the whole of them after about three weeks; the final process of filtration is an additional assurance of safety; and in emergency the whole water supply could be sterilised by the aid of large storage reservoirs already at the disposal of the Water Board. This Report strengthens the evidence already brought forward in support of the view that the safety of the metropolis in respect of water-borne epidemic diseases is morally if not absolutely assured.

The Budget and the Building Trade. WE published in our issue of June 26 a letter signed "Alpha," asking for any information as to building works which had been abandoned in consequence of the new burdens on property threatened to be imposed by the Budget; letters to be forwarded to our correspondent by the Editor of the *Builder*. He has only so far received two replies, though it is well known that a great deal of building work on a large scale has been suspended or abandoned in consequence of the terms of the Budget. "Alpha," who is an eminent architect, does not wish his name to be put forward, but he writes:—

"I am disappointed at the very meagre response to my 'Alpha' letter. I suppose people don't like revealing their 'trade secrets' to an anonymous gentleman.

If anyone would like to get in communication with me as 'Alpha' through you *before* giving their information, so that they may know to whom they are giving it, I need not say I shall be pleased to write to them.

I am sure that if I could show a very large loss to the building trade, *i.e.*, the workmen, we should score a big point."

The object of course is to make a case against the Government in respect of the injury to the building trade caused by the Budget.

The Newport Dock Disaster. COMING so soon after the mishap at Birkenhead, the sudden failure of the timber construction lining the sides of the excavation for the new dock at Newport cannot but suggest the desirability of exhaustive inquiry into the causes of both accidents. In each case the responsible engineers are men whose names alone are sufficient to inspire absolute confidence, and the same may fairly be said of the contractors.

Digitized by Google

Disasters of the same kind are happily rare, and probably may be attributed to the fact that by the disturbance of natural conditions insuring equilibrium of the earth, forces of almost inestimable magnitude are brought into play, before which timbering of the most massive proportions is swept away and overwhelmed as if it were so much straw. While we may be sure that no reasonable precautions were neglected at Newport, it is distinctly satisfactory to learn that the Home Office will be represented by an engineering expert at the inquest. and that an inquiry will be instituted by the same Department into the special dangers which this and the Birkenhead disaster have shown to be connected with deep excavation work in the vicinity of estuaries, where the earth always seems to have a propensity for caving in if cut through to any important depth.

Newcastle-on-Tyne Bridges. In a note referring to the paper by Messrs. F. W. Davis and C. R. S. Kirkpatrick, read to the Institution of Civil Engineers on the new railway bridge over the Tyne, a French engineering contemporary says that this work "replaces a bridge of great height, of which the construction, due to Messrs. Robert Stephenson and T. E. Harrison, goes back to 1849." The writer evidently does not attach the same importance as do most people in this country to the monumental work which we know rather as "*the* high-level bridge" than as "*a* bridge of great height." Moreover, he has jumped to a quite wrong conclusion in supposing that Stephenson's bridge has been replaced in any sense of the term. The actual words used by the authors of the paper were these: "The bridge was constructed for three lines of railway, and for nearly sixty years the whole of the enormous traffic of the district had to be worked over these three lines. As the traffic continued to increase, the directors of the North-Eastern Railway Company decided to construct a new high-level bridge with four lines of railway, and Parliamentary powers for this undertaking were obtained in 1899." It would perhaps have been well if the authors had made clear the fact that the older and, in its way, the finer structure is still in regular use both for railway and for ordinary highway traffic, and they might have added that so far as can be seen at present it may continue to be so used for many years and perhaps centuries to come.

The Metropolitan Railway Fire. In the report by Mr. A. P. Trotter on the fire which occurred in May at the Charing Cross Station of the District Railway it is pointed out that the outbreak was not of electrical origin, but had been caused by a spark from a brake block or by a lighted match or cigarette end, which set fire to combustible *débris* in a concrete chamber beneath the edge of the north platform. It seems that when once started the fire attacked the timber cover of the chamber, and so caused much delay and inconveniene to the railway company and the public. Mr. Trotter says that the accident appears to have arisen mainly from the inadvertent use of ordinary planks to form the cover of the concrete chamber. This is a very polite way of characterising the folly of the company in adhering to the use of an entirely unsuitable material. If the cover had been of reinforced concrete, like some very similar covers described in our recent article on the General Post Office extension, there could have been no risk of any kind. Unfortunately it happens that railway engineers are hardened offenders in the way of adhering to the employment of timber in situations where fire-resisting materials would be suggested to the mind of less conservative persons. Nothing but stringent regulations will effect the necessary reform in this respect, and we hope that the Board of Trade may find it possible to take the point into consideration.

The Municipal Electrical Association. At the annual convention of the Municipal Electrical Association at Manchester last week there were several papers read which were of general interest. Mr. Pearce, the President, thought it advisable that small local authorities should purchase their electricity in bulk at low rates from neighbouring municipalities or power companies. He laid stress on the necessity for combination amongst municipal authorities, and warmly supported the Amendment Bill to the Electric Lighting Acts which is now before Parliament. The question of whether a manufacturing department of a corporation should sell to the consumers at cost price or whether a reasonable profit should be made was also raised. We agree with the Mayor of Manchester in considering that the latter procedure is more equitable, as many ratepayers do not use the electric light, and it seems hard that they should have to find the capital without sufficient remuneration. Municipal undertakings, like all others, are subject to trade depression, and reserve funds must be accumulated to tide over these periods. Sometimes, also, there is competition between two departments of the same municipality. In Manchester, for instance, it was necessary to make a compromise between the interests of the hydraulic and electric departments. Mr. Hoadley read an interesting paper on the influence of metallic filament lamps on the electrical industry. In many cases apparently the revenue has been seriously reduced. He pointed out, however, that the lamps would soon get cheaper, and that this lowering of price would lead to important developments. He mentioned that the average life of the high voltage metallic filament lamps was 1,100 hours and that individual lamps sometimes lasted 6,000 hours. These lamps are specially adapted for street lighting, and in many towns considerable economies could be affected by using them for this purpose.

High-street, Brentford. A CORRESPONDENT at Brentford sends us some views taken from photographs, illustrating the state of High-street, Brentford, on a recent occasion when the traffic was exceptionally heavy owing to a garden party at Sion House. On this occasion, it is said, the trams were practically suspended, and also many of the special cars taking guests to the garden party. It appears to us that tram lines have been run through a street which is too narrow for them without serious stoppage to other traffic. We presume that what the inhabitants want is that the street should be widened by pulling down and setting back one side of it; unless the abolition of the tram lines is demanded. The present condition of things must evidently be very injurious to tradesmen whose shops are in the High-street.

French Students' Work. THE drawings sent home by French students at the Villa Medici are at present on view at the Ecole des Beaux-Arts, Paris. In architecture, M. Hébrard, a pupil who has just completed his course, has sent a remarkable series of studies for the restoration of the Palace of Diocletian at Spalato. M. Lefevre has sent studies of a Roman house on the Palatine; and M. Joussely exhibits plans, sections, and elevations of the Forum of Pompeii. M. Bonnat has sent some good studies of the Palace of Caprarola; and M. Nitod, a first-year pupil, drawings of the temple of Castor and Pollux and of fragments of the temple of Neptune.

Egyptian Antiquities, University College. THE collection of Egyptian antiquities discovered during the latest excavations of Professor Petrie and his students, exhibited as usual in one of the rooms in University College, Gower-street, is smaller than on some former occasions, occupying only one room, but contains a great deal that is of interest. The objects exhibited come from the Palace of Apries (Memphis) and from Qurneh (Thebes). Under Group 3 is a chair with what the catalogue calls "animal legs," which appear to us to be rather crude representations of human feet, with a plaited string seat nearly complete and looking as if it had been only recently made. Under Group 4 is some beautiful ornamental work; a light girdle of gold and silver alloy of most delicate design, and a gold "uræus" of XIIth dynasty work, not only a beautiful design, but so absolutely preserved that, but for the style, it might have been taken from a Bond-street shop window. Under Group 6 are sculptures from Qurneh, among them two figures of hawks remarkable not only for their delicacy of design, but for the fact that one of them is in ordinary (very low) relief, and the other in the intaglio method of Egyptian sculpture, in which the appearance of relief is given by incising round the edge of the design. Most interesting of all to architects is an example of the so-called "lotus" capital of an early date, and with a degree of realistic detail which in this case goes to support the theory of the natural origin of this capital. The collection is on view till the 31st inst.

Roman Corstopitum. WE have before referred to the interest of the excavations made at the Roman site of Corstopitum, near Corbridge in Northumberland, which were first commenced in consequence of the discoveries made when the Northumberland County History Committee, with a view to describing the parish of Corbridge in their history, undertook trial excavations

Digitized by Google

Sculptured Panel found on Site of Corstopitum.

on the Roman site. As already described (see *Builder* of Sept. 26, 1908), the excavations yielded matter of interest quite beyond expectation, and a Corbridge Excavation Committee was formed to continue the work in a systematic manner. The results of 1908 were even better; among other things the remains were unearthed of two large buttressed granaries faced within and without with ashlar, and with mullions in the basement windows, a most unusual if not unique feature in Roman work. Two examples of sculpture were also found, of one of which we give an illustration, and a large hoard of gold coin. The site has never been built on, and is therefore wholly accessible to the spade, and the owner of the land, Captain Cuthbert, is entirely favourable to the explorations. The work is costly, however, and the committee now appeal for subscriptions in aid of its continuance, which may be sent either to Mr. Howard Pease, F.S.A., Otterburn Tower, Northumberland, or to Mr. W. H. Knowles, F.S.A., Gosforth, Northumberland. Any communications or inquiries in regard to the excavations should be addressed to Mr. W. H. Knowles.

Addington, Surrey.

THIS property, which has an interesting history, is offered for sale. It consists of some 1,200 acres, whereof a large portion belonged to the Knights Templar, near Shirley and Croydon, with the house which was built by Barlow Trecothick, Lord Mayor in 1770, who in 1767 brought from the Leigh family the manor then known as Aguillon's or Bardolph's, which was held since William I.'s day by grand serjeantry of a coronation dish of gyroun or maupyrgernon. At that time was still standing on Castle-hill most of the house for the fortifying and crenellating of which Sir Robert Aguillon obtained licence in 54 Henry III. Trecothick built his house, of stone, near the site of the older one, which he pulled down in 1780; in 1807 the estate was bought from Mr. Cole for 35,000*l.*, proceeds of the sale of Croydon Palace and lands elsewhere, on behalf of Dr. Manners Sutton, Archbishop of Canterbury, whose successor, Dr. Howley, made many additions to the house and beautified the park, which covers 500 acres. Addington Park formed a residence of the archbishops until its sale, ten years ago, the total net proceeds realised by the Ecclesiastical Commissioners being 46,007*l.* The Commissioners then provided more suitable residences for the Archbishops of Canterbury and the Bishops of Rochester. In the parish church—partly rebuilt *temp.* Edward III.—are memorials of Trecothick and Archbishops Sutton and Sumner, and the altar tomb of Archbishop Howley: Longley, Tait, and Sumner were buried in the churchyard. In 1876 Mr. St. Aubyn restored the fabric and added the vestry and north aisle; the chancel (wherein is a Saxon window) was restored and decorated, and the white alabaster reredos was designed, 1899, by Mr. Arthur J. Reeve, as a memorial to Archbishop Benson.

COMPETITION FOR PARK AT WREXHAM.

THE competition for the laying-out of a park at Wrexham has been decided in favour of Messrs. J. Cheal & Sons, of Crawley. Their plans, together with those of four other competitors, were exhibited at the Guildhall, Wrexham, on Friday and Saturday of last week. The other schemes (in order of merit) were submitted by Messrs. Barrow & Son, Derby; Messrs. Geo. Jackson & Sons, Surrey; Mr. D. A. Beveridge, Liverpool; and Mr. Patrick Abercrombie, Liverpool.

The site, which is a very irregular one, both as regards shape and levels, has an area of about 26 acres, and is situated at the extremity of the town on the Ruthin-road. Roughly speaking, the roads enclosing the site are fairly level on the highest contour line, and within them the park undulates considerably, dropping as low as 30 ft. below the level of these enclosing roads, and rising to the centre into a mound of approximately the same level.

Three of the competitors took this mound as the centre point of their scheme in order to form a climax to the park, and carried a main axis line diagonally across the park from the entrance in Bradley-road, though this centre point to the opposite entrance, which was asked for in Tenter's-square. The latter is at present a mere collection of mean cottages and sheds, but it would seem as though the Town Council contemplated carrying a road through to the centre of the town, so as to form a park-way clean out into the country. (This was shown by No. 5 on a block plan.) This main axis line seems to us the correct solution of the problem, and, seeing that it was adopted by Nos. 1, 4, and 5, we cannot quite understand the reason for placing Nos. 2 and 3 where they are, as their plans have no main lines about them and are really negligible as designs; they are merely a series of wantonly curved paths wandering about more or less along the contour lines, with "incidents" thrown in at random. In No. 2 the football ground is placed where the maximum amount of levelling is required, one half being on the lowest and one half on the highest part of the site.

But to return to the other three designs. All three competitors seem to have held the opinion that a compromise must be adopted between a formal and an entirely haphazard lay-out. The sum given—4,000*l.*—was not sufficient to warrant any extensive levelling and terracing such as would be necessary for a completely formal scheme, which would have included the football, tennis, and bowling-green, with the lake and "centre point" in one comprehensive design. They therefore carried through a formal scheme on a main axial line, and left the rest of the park practically in its natural state save for the necessary levelling required for tennis lawns, etc. All three competitors also make use of a cross axis at right angles to the main one and carried through the centre point. Nos. 1 and 4 carry this cross axis through on both sides to form entrances on the Bellevue and Ruthin roads. The latter, however, was not asked for, and seems to us hardly necessary, as there is only a cemetery along this road. The Bellevue side of this axis is curved in No. 1 so as to give a level road following the contour, but we should have preferred a straight road with a slight dip in it as being more pleasant to look at and more in keeping with the character of the scheme.

No. 1 shows a park pavilion at the centre point, with staircases and terraces leading down to the football ground, which occupies the lowest portion of the site facing Tenter's-square. We rather feel that, however well drained, this football ground will be "sloppy" in bad weather, and prefer the position along the Bellevue-road, which is identical in Nos. 4 and 5. These two both show a lake in place of the football ground of No. 1—of a wildly picturesque shape in No. 4 and a formal piece of water in No. 5. They both show a simple bandstand at the centre point, surrounded by a large open space, which would make a most effective gathering-ground on summer evenings.

There is some pleasant planning about the centre point of No. 1, though the pavilion is too trifling and flimsy for a town which contains such a magnificent piece of solidity as the tower of the parish church, clearly seen from this point and in a direct continuation of the line of the principal axis.

On the whole, we wish to commend the town of Wrexham for having put their park out to public competition (there were twenty-six sets sent in) instead of relying on the local landscape gardener; but we would suggest that in the case of a public competition an assessor of wider experience than the Park Superintendent might have been appointed.

DUNBLANE AND DOUNE.

ON Saturday last the Edinburgh Architectural Association visited Dunblane Cathedral and Doune Castle, under the guidance of Mr. Hippolyte J. Blanc, who has sent us the following interesting notes on the two places.

Dunblane Cathedral.

Dunblane (the Mound or Hill of the Chapel of St. Blane) was an early ecclesiastical centre. A church existed here in the VIIth century, said to have been an off-shoot of the Church of Kingarth, in Bute, the founder of which was St. Blane.

St. Blane was of the race of the Irish Picts, and was Bishop of the Church of Kingarth, which Cathan, his uncle, had founded. The church was burned by the Britons of Strathclyde between 844 and 860, and in 912 is recorded to have again been ravished by Danish pirates. An important college existed at Muthill, where the Dean of Dunblane afterwards had his seat. There were other centres of the Celtic Church in the neighbourhood which served their day until the new Ecclesiastical Order, inaugurated by Queen Margaret, was established. About 1150 King David I. established the Bishopric of

Digitized by Google

Dunblane, and in 1198 Earl Gilbert and his Countess introduced Canons Regular by the foundation of the priory of Inch Affray. Under the growing importance of these influences the Culdee possession fell into lay hands, and after 1214 the Prior and Culdees of Muthill disappear from the Records.

The only material evidence of the existence of a church in the XIIth century is the square tower, in the lower stage of which there remain characteristic details of Norman work, and it is interesting to recognise in them a similarity to that which we find in the chancel arch of Queen Margaret's Chapel, Edinburgh Castle. The lower four stages of the tower appear to belong to this period of the original work, as an inner staircase at the south-west angle goes no higher than the top of the fourth stage. All other remains of the original church seem to be have been obliterated when the present structure was erected. It will be observed that the church has been lined off with its axis out of parallel with that of the tower.

The See fell into a ruinous condition, for when the learned Dominican Clement was bishop—from 1233 to 1258—he made a pilgrimage to Rome and represented to the Pope that the rents attached to the church were barely sufficient to sustain him for six months, and that the church was so ruinous he had no where to lay his head. The bishop left the fabric "a stately sanctuary rich in lands and heritage served by prebendary and canon." He built the nave—XIIIth century work—the most beautiful part of the structure, the detail of which is later than that of the north aisle of the choir.

The cathedral consists of a nave of eight bays with north and south aisles; a choir of six bays without aisles, the attached chamber already referred to on the north side regarded as a Lady chapel or a vestry, but probably also in part serving as a chapter house, as its form and equipments rather support this view. Over this aisle or chamber is an apartment of similar area lighted by twin lancet-headed lights. This may have been a scriptorium or muniment room. The whole fabric is of the First Pointed period, with a slight expression of transition to the geometric. Bar tracery, of which there is a suggestion here, appeared in the close of the XIIIth century. The choir is between First Pointed and Decorated. The east end seems later than the west, and may have been erected after the nave, probably in the XIVth century. This change of period, however, may have been caused by the fabric having become dismantled from fire and local feuds, and the parts damaged rebuilt at a later time: It is more frequently found that the choirs in Scottish churches are earlier than the naves. The pinnacles and parapets of the choir here bear the date 1500.

The west end is a charm of graceful proportion. Its deeply-recessed doorway with blind arcade on each side, its long, graceful triplet twin lights above, with the cinquefoil and quatrefoil heads, and its gablet Vesica, with the bay-leaved, unconventional enrichment, all flanked by the sturdy buttresses at the angles, together exhibit a most inspiring composition. Ruskin, in his "Lectures," refers specially to this gable, and says it is acknowledged to be beautiful by the most careless observer. He declares he was no common man who designed that Cathedral of Dunblane. He says:—

"I know nothing so perfect in its simplicity and so beautiful—so far as it reaches—in all the Gothic with which I am acquainted; and just in proportion to his power of mind that man was content to work under nature's teaching, and instead of putting a merely formed dog-tooth, as everyone did at that time, he went down to the woody bank of the sweet river beneath the rocks on which he was building, and he took up a few of the fallen leaves that lay by it and he set them in his arch side by side for ever."

Of course, Ruskin's poetry of diction makes a picture of whatever he touches.

There are a few canopied sedilia in the choir, survivors of a series that most probably occupied each side of the choir. One has the arms of the Chisholm family and a mitre. There were three bishops of the same name, but it is thought the stalls were provided by the first bishop between 1486 and 1534. They are of oak and crisply carved, and are supposed to have been brought from Flanders.

The building was helped forward by enterprising bishops between 1400 and 1447.

Of the interior it may suffice to note that the nave, which is almost entirely pure First Pointed, measures 129 ft. by 57 ft., including the aisles. There is no triforium, but the clearstory has a passage in the thickness of the wall with elegant arcading in the interior wall and window perforation in the exterior. It may be noted that the bays of the nave are of irregular width. The windows are quite plain, consisting of two and four lancets, cut as though through a slab, under an obtusely pointed arch and drip stone, or label moulding. Features approximating to tracery are found in the clearstory and in the west gable. These are plainly treated outside, but elaborated on the inside by shafting and arches.

Passing the tower interior, we may note the elevation of the sill of the door above floor level. This is not uncommon in isolated towers of its period. The lower story is vaulted with a barrel arch divided by ribs into a series of compartments, rather an unusual treatment at the period. A very interesting feature exists in a partially built up doorway on the north side. The jambs are shafted, and the decorations of the arch mouldings are familiar to all students of Norman detail. The choir measures 82 ft. by 28 ft. It has no aisles properly so-called. This is not an isolated instance, because other examples of like arrangement are found at Dunkeld, Paisley, Inchmahone, Dundrennan, and three or four more of our Scottish abbeys. While internally undefined, externally it is divided by buttresses into six compartments or bays.

The east window is rather an unusual variety of triplicate form, the centre light being taller and wider than that on each side of it. None of the original details, however, of the choir remain, the whole of this part of the cathedral having undergone many changes since its foundation.

The west doorway is not remarkable for grandeur of size or design. We have not many examples of proportionate doorways to our cathedrals in Scotland. Kirkwall has three at its west end—an isolated instance. Elgin, St. Andrew's, and Holyrood are perhaps the most conspicuous we have, many of our largest churches having doors of small dimensions. In this respect this—the First Pointed period—falls far short of the richly decorated and deeply recessed doorways of the Norman period, for example, Kelso, Kirkliston, Dalmeny, Dunfermline, Arbroath, and others.

A bell dated 1615 is preserved here.

The bishop's wall by the river is associated with Leighton, who occupied the See from 1661-1670, and who chose Dunblane because it was the smallest and poorest of Scotland's Sees. He bequeathed to it his library, which is still preserved.

Of this walk Dr. Walter Smith writes:

A quaint old place—a minster grey,
And grey old town that winds away
Through gardens, down the sloping ridge
To river's brim, and ancient bridge
Where the still waters flow
To the deep pool below.

Doune Castle.

Doune is another form of the Gaelic word "dun," a hill, or rising ground. The site occupied by the castle is an eminence at the confluence of the Teith and the Ardoch. The castle is a dignified and somewhat extensive group of buildings, and affords a good example of the style of fortified residence of the beginning of the XVth century. It is of the courtyard type, comprising buildings set against high curtain walls on the four sides of an inner court about 90 ft. square. Unlike the castles of the XIVth century, which were mostly isolated keeps or peel towers, existing in various parts scattered over Scotland, the keep is here attached to the other buildings, and forms the most imposing part of the group at the north-east angle, having an altitude of about 80 ft.

Tradition has it that the site was fortified before the present castle existed, and looking to the great advantages possessed by the site, in the commanding prospect obtained from it, one can readily believe it would be preferred as a sure place of defence.

The date of the present castle is assigned to the first quarter of the XVth century, when the severities of feudal warfare were giving place to greater civilities, and the stern provisions for defence were being substituted by freer domestic treatment, indicating an increasing confidence in one's neighbours. These are seen in the wider window openings and the comparative absence of appliances for engines of war. There are still evidences here, however, of a prudent regard for possibilities, in the massive walling—in some parts 10 ft. thick—which is a characteristic of this structure.

McGibbon & Ross inform us that the tower-built castles are characteristic of Scotch architecture of the XIVth century. Those in France and England of the same period are of the grandest and most extensive description. Pierrefonds in France, and Cærnarvon, Conway, and others in England, are contemporary with the towers and keeps of Scotland. They mark, however, the difference of wealth in this and the southern countries in the XIVth century.

The keep plan of building was universal in Scotland during the XIVth century. It was employed not only in smaller towers of the impoverished nobility, but even in the Royal palaces and castles. In the XVth century the type changed. Instead of the isolated keep, tower buildings surrounded by courtyards or quadrangles such as a Doune, Dirleton, Cærlavrock, began to be erected. During the first five Jameses the larger castles and Royal palaces were built, or further enlarged into castles with courtyards or quadrangles, such as Linlithgow, Stirling, Falkland, Edinburgh, Holyrood. In some of the earlier castles, as Tantallon and Doune, one part of the castle forms a keep, but on a different plan from the Norman parallelogram. It is larger, and contains increased accommodations on each floor, with towers and turrets. The keep forms a commodious residence, and while attached to the other buildings, it is sometimes without intercommunication. The entrance gateway, instead of being through the enclosing wall, is usually, as at Doune, in the form of a pend, through part of the buildings; this enables it to be protected with gates and portcullis, instead of by a single door as on the restricted entrance of the old keep.

The castle of the quadrangle type is continued with many changes and developments to about the middle of the XVIth century; and, while a large number of contemporary castles continued to be built on the old keep plan, the quadrangle plan is also continued to near the end of the XVIth century. Many existing castles were also converted by the addition of quadrangles to old keeps. Of such we have an example at Craigmillar. The main entrance to the castle accommodation continues to be at the level of the first floor, but reached by stone stairways from the inner quadrangle. Interior stairs are narrow and spiral. Doune affords a good example of of Scotch smithwork in the grated "Yett" at the main entrance.

Various forms of defensive features are seen in these later castles, but they become gradually reduced in importance, and at Doune we do not find the usual bold, projecting corbels with machicolated openings, but a parapet projected merely upon plain string-course. While gunpowder began to be used in the XIVth century, its employment in artillery for attack and defence of fortified places began in the XVth century, and many castles of the time show in consequence the provisions made for its use. The domestic chapel is not common in castles

Digitized by Google

of the time, but there are several examples of oratories in window recesses, such as at Borthwick Castle and Doune.

The Castle of Doune is recorded to have been built by Murdoch, Duke of Albany, who was Regent from 1419 to 1424, while James I. was captive in England. On the return of the King he executed vengeance against the Duke and his followers, took possession of the Castle of Falkland, and of the fortified Palace of Doune—Albany's favourite residence. Albany was executed at the Castle of Stirling, and his wife, Isabella, daughter of the Earl of Lennox, was immediately committed to the Castle of Tantallon, of which the King possessed himself as being one of the strongest fortresses in the country. Doune therefore became thenceforward a Royal domain, and in 1469, when Margaret of Denmark was married to James III., the Scottish Crown obtained the accession of the Islands of Orkney and Shetland as security for the young Queen's dowry, and the castle territories were destined to the Queen as part of her dowry should she survive her husband. It was in the same manner secured to Margaret, daughter of Henry VII., when she became the wife of James IV.

After the death of James IV., in 1513, his Queen married Henry, Lord Methven, a descendant of Murdoch, Duke of Albany, and immediately she, with the consent of her son, James V., and of her husband, Lord Monteith, granted to James Stewart, a younger brother of her husband and ancestor of the family of Moray, custody of the castle for life, which a few years afterwards was converted into a feu to him and his heirs. The son of James Stewart obtained full possession of the castle, and was created Lord Doune in 1581, and since then without interruption the castle has been in possession of the Earl of Moray's family.

In the rebellion of 1745 the castle was for some time occupied by the rebels. When the rebels left it the castle was examined and reported upon, but no works of reconstruction seem to have been recommended, and in consequence it remained a ruin until about thirty years ago, when a scheme of restoration was drawn up and partly executed.

The buildings are all of the same period of architecture, though probably erected at intervals. The north-east corner was probably first built along with the enclosing walls, and it has evidently been intended to complete the buildings all round, because tusking has been left in various parts of the structure. The enclosing walls of enceinte are 40 ft. high, with a parapet 6 ft. higher slightly projected on a string-course. No machicolations occur excepting over the postern door in the west wall, but the walls are defended with open bartizans at the angles and in the centre of the curtains. The whole group of buildings occupy an area measuring 155 ft. by 143 ft.

As already mentioned, the entrance is in the centre under the hall of the keep. It is protected by wooden doors, portcullis, and an iron-grated gate. The portcullis is worked from the window recess of the chamber above. Passing through the pend, a guard-room and prison-chamber are on the right side, while on the left are stores and cellars with a well in the basement of the round tower. The first floor of the keep contains the lord's hall, which is 44 ft. by 26½ ft., and 24½ ft. to the crown of the vault. The hall is entered only from an outside stone stair. In it may be seen the portcullis window, and also a fine ornamented double fireplace with side shafts, such as we are familiar with in other castles, but it may be noted as another evidence of the degeneracy of Gothic practice in Scotland at this period that the details are of a very inferior character. From a small room off the hall an opening, or "luggie," permits a view to the hall interior. From the hall a staircase leads to the private rooms on the floor above.

Adjoining this hall is the larger, or banqueting hall, to which a through communication has in recent times been made, and is the only opening between the lord's hall and the other apartments. The banqueting hall entrance is from an independent staircase from the quadrangle. This enters a vestibule, which is also a serving-room between the kitchen on one side and the banqueting hall on the other. The kitchen has in addition an independent access from the quadrangle or courtyard, and has many interesting features. The banqueting hall on this level is a large apartment, measuring 68 ft. by 27 ft., and about thirty years ago it was refitted and reroofed. At the south-west angle a circular stair gives access to the parapets, and also to a minstrels' gallery, which would also form part of the finished accommodation. It has been suggested that the large pointed windows in the south curtain were constructed with the view to adding a chapel, not carried out.

In the upper floors of the keep are the drawing-room and minor apartments, which may have been appropriated as sleeping accommodation; while off the drawing-room on the second floor is the oratory referred to, with its aumbry, piscina, etc.

It may be noted that the chief lighting for the banqueting hall is on the inner or south wall to the quadrangle, the north wall having very few openings, which might become vulnerable points in a siege, and on the north wall externally there is a semicircular turret-like projection, the purpose of which is doubtless to add strength to this wall. No fireplace exists in the banqueting hall, so that probably the fire would be placed on dogs in the centre of the floor, for which the roof ventilator is provided, as at Penshurst and elsewhere.

In the "Antiquarian Itinerary," published in 1815, the state of ruin of the different buildings is referred to, and among other items are noted the square opening in the floor of the lord's hall or dining-room, stated to be for the supply of air and food to the captive in the chamber below. It is there also noted that the large banqueting hall was at that time roofless.

The castle site is most advantageously situated, as from it most beautiful pictures may be viewed of Stirling Castle, the scenery of the romantic Teith, the picturesque groves in Blairdrummond, and the long ridge of Kippen and Craigunnoch. H. J. B.

ST. MARGARET'S HOSPITAL, TAUNTON.

AT the extreme eastern boundary of the town of Taunton stands what was once the Leper Hospital of St. Margaret, situated, as were all such lazar houses of mediæval times, at a respectable distance from the dwellings of the healthy members of the community. Of the original structure little is known, and still less remains, for no part of the existing edifice can be earlier than the time of Richard Beere, last abbot but one of Glastonbury (1510-15), who appears to have rebuilt the hospital. The present building is long and low, with a roofing of thatch, which, being continued below the eaves where it is upheld by wooden uprights, forms a kind of primitive covered way, closed at either end by slightly projecting wings, of which the westernmost, now in private occupation, was originally the hospital chapel. The structure to-day has more historical than architectural interest, save for a fine piece of sculpture inserted in the face of the wall a few feet above the ground level. The carving rests in a plain recessed niche, and is in very high relief. It depicts the heavily-jewelled mitre of a XVIth century abbot (Glastonbury was a mitred abbey), and a shield charged with the monogram R. B., in allusion, no doubt, to the worthy Richard Beere. Supporting the shield is a cleverly-arranged background of interlacing cords and tassels, the whole forming, in its breadth of design and vigorous modelling, as pleasing a trifle of mediæval art as one could wish to meet with. SIDNEY HEATH.

Digitized by Google

NOTES FROM FRANCE.

It is announced that the Palace of the Popes at Avignon, which has been rescued from its former occupation as a cavalry barracks and is open to the public, is shortly to be subjected to extensive restorations at a cost of about 200,000 francs. The principal object will be to restore the frescoes in the Hall of Audience, at present hidden under a coat of plaster; to rebuild the porch of the ancient chapel; and to restore the monumental portal to the chapel of Pope Clement VI.

Two large decorative paintings by M. Detaille, State commissions, have been fixed up in the Hôtel des Invalides. One represents the departure of the Volunteers, under the First Republic; the other, the presentation to the Senate (First Empire) of the standards captured at Ulm and Austerlitz.

The Municipality of Rennes have commissioned the eminent sculptor, M. Jean Boucher, to execute a monument for the decoration of the façade of the Hôtel de Ville at Rennes, a work of the architect Gabriel. The sculpture composition is to symbolise the union of Brittany with France; Brittany being symbolised by the figure of Anne de Bretagne, sumptuously attired in the costume of the XVth century, followed by a group of Bretons in national costumes, met by a figure representing France, which receives them with open arms.

The Touring Club of France, in conjunction with the Committee of Sites and Monuments, proposes to open a national subscription in order to acquire permanently the domain of Chambord, at present in the hands of a private owner, and to safeguard the château, which is such a remarkable monument of Francis I. architecture, as a national property.

THE INSTITUTION OF COUNTY AND MUNICIPAL ENGINEERS.

The annual meeting of the Institution of County and Municipal Engineers resumed its proceedings in the Town Hall, St. Pancras, on Friday, June 25. Mr. W. Nisbet Blair, M.Inst.C.E., President, was in the chair.

Dangerous Structures.

Mr. E. Willis, A.M.Inst.C.E. (Surveyor, Chiswick), read a paper on "Dangerous Structures." He said the object of the paper was to create an interest in the subject which might lead to systematic inspection, and by this means lessen the possibility of any structures causing injury to the public.

As most of them were aware, the power in respect of dangerous buildings, etc., was given wholly to the surveyor of the Council, and not to the Council direct, or any other officer.

No special clause in detail was provided in the Public Health Act, 1875, but sect. 160, sub-sect. 3, incorporated the provisions of the Towns Improvement Clauses Act, 1847, with respect to ruinous or dangerous buildings, and it was important to notice that under the 1847 Act notices might be served upon both the owners and occupiers affected.

It should also be particularly noted that the surveyor, when acting under this section (*i.e.*, sect. 75, Towns Improvement Clauses Act, 1847), might not require the dangerous or ruinous structure to be rebuilt, but only made safe, and in serving notice thereunder it must be remembered that the Act was complied with so soon as the defective portion is removed, secured, or repaired, and not necessarily reconstructed in the same manner or to the same design as originally existed.

Another point which it was important to remember was that under this Act the structure must be dangerous to other than the occupiers of the building or messuage on which such structure existed before the surveyor had power to take action thereon.

This was the principal point of difference between the powers of district surveyors in London and local surveyors in the provinces, inasmuch as sect. 73 of the Metropolitan Building Act, 1855, specially applied to any dangerous structure, whether it was dangerous to the individual occupiers, or to the occupiers of adjoining property, or the public at large. Further, this section was one upon which the surveyor must act absolutely on his own initiative, since if a structure in his opinion was dangerous, he could apparently, without taking the matter to his Council, obtain a summons; but the author's opinion, based on experience, was that the latter portion of the section giving power to erect a hoarding for the protection of the public, was the better procedure to adopt, and it was seldom necessary to proceed further in the matter, such action being usually sufficient to result in the necessary repairs being executed forthwith.

The words "dangerous structures" were not those adopted in the section under consideration, which was as follows:—"If any building or wall, or anything affixed thereon, within the limits of the special Act, be deemed by the surveyor of the commissioners to be in a ruinous state, and dangerous to passengers or to the occupiers of the neighbouring buildings, such surveyor shall immediately cause a proper hoard or fence to be put up for the protection of passengers, and shall cause notice in writing to be given to the owner of such building or wall, if he be known and resident within the said limits, and shall also cause such notice to be put on the door or other conspicuous part of the said premises, or otherwise to be given to the occupier thereof, if any, requiring such owner or occupier forthwith to take down, secure, or repair such building, wall, or other thing, as the case shall require; and if such owner or occupier do not begin to repair, take down, or secure such building, wall, or other thing within the space of three days after any such notice has been so given or put up as aforesaid, and complete such repairs or taking down or securing, as speedily as the nature of the case will admit, the said surveyor may take complaint thereof before two justices, and it shall be lawful for such justices to order the owner, or, in his default, the occupier (if any), of such building, wall, or other thing, to take down, rebuild, repair, or otherwise secure, to the satisfaction of such surveyor, the same, or such part thereof as appears to them to be in a dangerous state, within a time to be fixed by such justices; and in case the same be not taken down, repaired, rebuilt, or otherwise secured within the time so limited, or if no owner or occupier can be found on whom to serve such order, the commissioners shall with all convenient speed cause all or so much of such building, wall, or other thing as shall be in a ruinous condition, and dangerous as aforesaid, to be taken down, repaired, rebuilt, or otherwise secured in such manner as shall be requisite; and all the expenses of putting up every such fence, and of taking down, repairing, rebuilding, or securing such building, wall, or other thing, shall be paid by the owner thereof."

Cases, however, did unfortunately occur in practice which the surveyor could not include under the above limited definition, and it certainly appeared desirable in any amending Public Health Act the word "structures" should replace the word "buildings," as this would then give additional power to the local authority through their surveyor, and with the alteration of the word "neighbouring" to "any," it appeared to the author the difficulties that now exist would, to a very large extent, be eliminated.

The surveyor sometimes received a report to the effect that some portion of a house or building was dangerous, and should receive immediate attention, but, upon investigation, it was often found that no action could legally be taken under the Public Health Acts. It was undoubtedly an anomaly that in one case a house might be in such a condition as to be liable to seriously injure one or more of the occupants, and yet the Council could give no assistance; whilst, in another case, a small portion only of a building might be defective, and liable to cause slight injury to an adjoining occupier and immediate action was taken.

The usual procedure adopted by the author had been to immediately communicate with the owner of the premises, calling his attention to the state as found by him at the time of his inspection, and at the same time notifying the occupier of the conditions which existed, and warning him of the possibility of danger resulting therefrom. This procedure had, to the best of the author's knowledge, in every case resulted in the immediate repair of the defective work, and as same had been hitherto effected without friction, it seemed a fairly satisfactory method of procedure.

Coming to the second class of dangerous structures, *i.e.*, those upon which action could be taken, of course the method of dealing with these was necessarily different, but it was shown quite clearly in the before-mentioned section.

He would, however, strongly suggest that before any action was taken, either with a view to effecting the removal of any dangerous work, or prior to issuing a summons, that most careful drawings and photographs be obtained of the structure and general *locus in quo*, since nothing weakened a surveyor's professional position more than failure to successfully support an application to the Court under this section.

Mr. Price (Lytham) said it had always been a matter of surprise to himself that there should be a number of dangerous structures for which they could not serve notices at all. A roof might be falling in, or a roof giving way, but they could not serve a notice because it was only going to injure the occupants of the house. He had to serve a notice on a man who put up a furniture store, which when the roof was on overhung by 18 in. He pulled the building down, piled it 9 ft. or 10 ft. deep, and it had never stirred an inch since. With speculative house building work he had had cases in which the stonework of bay windows was not tied into the building.

Mr. Picton (Eccles) cited several instances of partially erected buildings which had been left unfinished, and which he had been obliged to have pulled down, as they had become dangerous to the public.

Mr. J. S. Brodie (Blackpool) said that in Blackpool it was not the old buildings which gave trouble but the new buildings, which required more careful inspection than the old ones. They required to have a very wide-awake inspection from day to day, and that was more efficient than an annual one. He often heard of dangerous buildings from a kind friend of the owner rather than from members of his own staff. There was another matter of which they must be very careful, to see that they did not lend themselves to do anything to favour personal spite. They must exercise their power reasonably and justly, and not do anything harsh.

Mr. E. Worrall (Stratford) considered that more could be done with moral suasion than with legal powers. With twenty years' experience he had never had to serve a notice for the pulling down of dangerous buildings. A courteous communication had in every case been sufficient to get what was required.

Mr. W. Harpur (Cardiff) said he inspected all stands which were erected on football grounds and for other purposes before they were allowed to be used by the public. He thought by taking these precautions many accidents could be avoided.

Mr. O. E. Winter (Hampstead) said that in London plans of temporary structures had to be submitted to the district surveyor, who acted under the London Buildings Act. The regulations were exceedingly strict. The structure had also to be certified by the district surveyor, who must be satisfied that it was in order and carried out in accordance

Digitized by Google

with the plans submitted. Dangerous structures were also dealt with under the Buildings Act of 1899.

Mr. Willis briefly replied to the discussion.

CEREMONIAL KEY, BIRMINGHAM UNIVERSITY.

THE key illustrated here was made by the Birmingham Guild of Handicraft under the supervision of Sir Aston Webb, to be presented to the King on the occasion of the opening of the Birmingham University. The handle is of solid gold, the shaft and wards of steel. On the face of the handle are engraved the coat-arms of Birmingham University, with the words "The Birmingham University" on the shaft; on the reverse side are the shamrock, rose, and thistle, with the date on the shaft, "July 7, 1909."

Ceremonial Key for Opening of Birmingham University.

We have so often had illustrations sent to us of ceremonial keys which were of no artistic value whatever, that we are glad to illustrate one which is a really good piece of metal design.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—We are asked to state that the adjourned special general meeting for the consideration of the revised by-laws, for the announcement of the results of the poll, and for the confirmation of the premises resolution, announced to be held Thursday, July 15, is postponed. Notice of the date of holding the meeting will be issued to members within a few days.

THE ARCHITECTURAL ASSOCIATION.

COMPETITIONS AND PRIZES

(SESSION 1908-1909).

List of Awards.

Architectural Association Medal and Prize, value 10*l.* 10s.—Not awarded.

Architectural Union Company's Prize, value 20*l.*—L. M. Gotch.

Architectural Union Company's Hon. Mention and Special Prize, value 5 guineas.—B. F. Matthews.

Architectural Association Travelling Studentship, value 25*l.*, and Silver Medal.—G. G. Wornum.

Architectural Association Travelling Studentship, Second Prize, value 5*l.*—C. G. Boutcher.

Saxon Snell Studentship, value 50*l.*—Not awarded.

Saxon Snell Studentship, Special Prize, value 10*l.*—R. Cromie.

THE LONDON COUNTY COUNCIL.

THE ordinary weekly meeting of the London County Council was held on Tuesday at the County Hall, Spring-gardens, Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—Sanction was given to Islington Borough Council borrowing 4,190*l.* for paving works, and to Wandsworth Borough Council borrowing 1,450*l.* for street improvements. It was agreed to lend Kensington Borough Council 7,098*l.* for dust destructor, Lambeth Borough Council 4,478*l.* for fitting up and furnishing Town Hall, and to Stepney Borough Council 7,000*l.* for electric lighting.

Theatres, etc.—The proposals referred to in the following were agreed to:—

Drawings submitted by Mr. E. White with regard to the rifle range (building No. 106) and the balloon inclosure (building No. 113) at the Imperial International Exhibition, Shepherd's Bush, and drawings and particulars submitted by Mr. F. B. Converse with regard to the mechanical and electrical arrangements in connexion with the motor racing track (building No. 109).

Drawing, submitted by Mr. W. G. R. Sprague, showing a pay-box which it is proposed to provide in the exit corridor from the grand circle at the Kilburn Vaudeville Theatre, High-road, Kilburn.

Drawings and a specification submitted by Messrs. J. T. Mayfield & Co. with regard to the electric lighting work proposed to be installed at Maxim's Restaurant, Gerrard-street and Wardour-street.

Iron and Glass Shelters.—The Building Act Committee recommended the refusal of the application for consent to the erection of an iron and glass shelter in front of Romano's, Strand, it being considered undesirable to permit the existing frontage in this part of the Strand to be further disturbed by the erection of the proposed shelter.

Mr. Goldsmith thought permission should be granted, especially as it was the custom to allow such shelters outside theatres and restaurants. The shelters were a great convenience to the people, and were not objectionable as long as they were supported on cantilevers and not on posts. The last Council had refused reasonable applications for no reason whatever.

Capt. Hemphill said one of the most disastrous results of Mr. Goldsmith's Chairmanship of the Building Act Committee was that he allowed some streets to be disfigured by hideous erections in the shape of shelters, which were unnecessary and undesirable.

Col. Probyn urged that facilities should be given to people who were prepared to go to the expense of erecting shelters.

The Rev. Stewart Headlam said shelters were much to be desired this weather.

Mr. Jepheon declared the structures disfigured public thoroughfares, but the Rev. J. Hastings denied that shelters were necessarily ugly.

Mr. Percy Harris said these shelters might be used as advertisements.

Mr. Whitaker Thompson said shelters did something to relieve the dull monotony of the street. In fact, he wished there were more, to hide some of the recent architectural eccentricities of the Strand.

The recommendation of the Committee was referred back for further consideration.

Woolwich Fire Station.—It was agreed that the estimate of expenditure on capital account of 500*l.* submitted by the Finance Committee on account of the costs of and incidental to the enlargement and alteration of the Woolwich fire station be approved.

Fair Rent Courts.—Mr. P. A. Harris moved a resolution, calling attention to the high rents of working-class dwellings in London, and suggesting the formation of tribunals to fix fair and reasonable rents.

Lord Midleton said the tendency of rent courts was to cause landlords to stop all improvements on their property.

The resolution was rejected.

Kingsland-road Almshouses.—The Local Government, Records, and Museums Committee reported as follows:—

"We have had under consideration the question of the preservation of the Kingsland-road almshouses. The almshouses were erected in 1716, pursuant to the will of Sir Robert Geffrey, and consist of fourteen houses and a chapel, the area of the site being about 1¾ acres, chiefly open space. The buildings have many of the characteristics of good XVIIIth century architecture, of which only a few specimens now remain in London. Last year the Ironmongers' Company, who are the trustees of the charity, applied to the Charity Commissioners for permission to sell the site of the almshouses to the Peabody trustees and to erect new almshouses elsewhere. It was intended to erect blocks of model dwellings on the site. A public inquiry was held, at which much opposition to the proposal was manifested by the Shoreditch Metropolitan Borough Council and societies interested in the preservation of historical buildings and open spaces, the result of the inquiry being that the Commissioners declined to sanction the sale. The Ironmongers' Company have appealed to the High Court against the decision of the Charity Commissioners, and the Court has ordered a further inquiry to be held. The solicitors to the parties interested in the retention of the property in its present condition have suggested that the Council should be represented at the further inquiry. After considering all the circumstances of the case, we came to the conclusion that we could not advise the Council to adopt the suggestion; but we have caused a reply to be sent to the effect that, in our opinion, the archæological interest attaching to the almshouses, taken together with the amenity of the open space formed by the garden, is sufficient to render the almshouses worthy of preservation, and we have expressed our sympathy with the efforts being made to that end. We have communicated our views to the Parks and Open Spaces Committee and the Public Health Committee, who, we understand, also have the matter under consideration."

A discussion took place in reference to the question, and several Councillors spoke of the architectural and archæological interest of the buildings in question.

Sewage Treatment—Purchase of Land at Erith.—It was agreed that the estimate of expenditure on capital account of 22,000*l.* submitted by the Finance Committee in respect of the purchase of land for sewage treatment purposes on Erith Marshes be approved.

Manual Training Centre, Poplar.—It was agreed that the supplemental estimate of expenditure on capital account of 67*l.*, submitted by the Finance Committee in respect of the erection of a manual training centre for forty boys in connexion with the Woolmore-street School, Poplar, be approved.

School.—It was agreed that a school for eighty physically defective children, capable of enlargement by about forty places, be provided on the vacant land now in the Council's possession adjoining the Plassy-road London County Council school, Lewisham.

Hospital Villa, Horton Asylum.—It was agreed that the estimate of expenditure on capital account of 200*l.*, submitted by the Finance Committee in respect of the preparation of plans and bills of quantities for an acute villa hospital for fifty male patients at Horton Asylum, be approved.

Centralisation of Hot-Water System, Cane Hill Asylum.—It was agreed that the estimate of expenditure on capital account of 3,600*l.*, submitted by the Finance Committee in respect of the centralisation of the hot-water system at Cane Hill Asylum, be approved.

New County Hall.—The Establishments Committee reported as follows:—

"The Council on April 6, 1909, sanctioned expenditure on capital account of 56,900*l.* in respect of the construction of the raft foundation and retaining walls in connexion with the new county hall. This amount included 4,500*l.* for supervision and incidentals. We are advised that it is now necessary for authority to be given for the employment of a clerk of works and two inspectors of materials, at a cost not exceeding 10*l.* a week, which will be met out of the 4,500*l.* mentioned, and we recommend:—

"That, within the limits of approved estimates and of current capital votes, expenditure not exceeding 10*l.* a week be sanctioned, as

Digitized by Google

from the date of commencement and until the conclusion of the work under the contract with F. & H. F. Higgs, Ltd., for the employment in the architect's department of a clerk of works and two inspectors of materials in connexion with the construction of the foundations for the new county hall."

The recommendation was also agreed to.

The Council, having transacted other business, adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Brixton†.—For a projecting shop front at No. 165, Ferndale-road, Brixton (Mr. W. G. Pinhorn for Mrs. E. E. Pinhorn).—Consent.

Greenwich.—For porches and barge boards to four houses on the eastern side of Kinveachy-gardens, Charlton (Mr. C. E. Charon).—Consent.

Hackney, North.—For houses with porches on the eastern and western sides of Moundfield-road and the western side of Castlewood-road, Hackney, with the flanks of two of the houses to abut upon Ravensdale-road (Mr. P. Roche).—Consent.

Hammersmith.—The retention of a projecting illuminated sign at the Red Cow public-house, Hammersmith-road, Hammersmith (Messrs. Bull & Bull).—Consent.

Hampstead.—Wooden bay windows at a house on the north-western side of Barby-avenue, Hampstead (Messrs. Hart & Waterhouse, for Mr. S. Mallam).—Consent.

Holborn.—Illuminated iron and glass sign in front of No. 11, High Holborn, Holborn (the London Sand Blast Decorative Glass Works, Ltd., for Cabins, Ltd.).—Consent.

Holborn.—Two illuminated signs at the Holborn Tube railway station, one to abut upon Kingsway and the other upon High Holborn (Mr. H. W. Ford).—Consent.

Islington, North.—An addition at the rear of the Holloway branch of the London and South-Western Bank, Holloway-road, Islington, and abutting upon the north-western side of Parkhurst-road (Mr. A. D. Watson, for the directors of the London and South-Western Bank, Ltd.).—Consent.

Lewisham.—Buildings upon a site abutting upon the northern side of Brownhill-road, Lewisham, and the southern and western sides of Hither Green-lane (Messrs. Norfolk & Prior).—Consent.

Marylebone, West.—The retention of a projecting sign in front of No. 392, Oxford-street, St. Marylebone (Mr. J. Simpson Bird).—Consent.

Marylebone, West.—A hood over the new entrance at No. 20, Marlborough-place, St. John's Wood (Mr. S. A. Gomme for Mr. G. Laurence Gomme).—Consent.

Norwood.†—Retention of an external iron staircase and landing at No. 51, Caldecot-road, Lambeth, abutting upon Bavent-road (Mr. E. N. Arundell).—Consent.

Norwood.—Porches and balconies to houses in Upper Tulse-hill, Clovelly-road, and Sycamore-road, Lambeth (Messrs. Sheppard & Co.).—Consent.

Paddington, North.—That the application of Mr. J. T. Lee for an extension of the periods within which the erection of an addition to St. Luke's Church, Kilburn, to abut upon Fernhead-road, was required to be commenced and completed, be granted.—Consent.

St. Pancras, West.—Additions to the house known as "Glen Haven," on the eastern side of Albany-street, Regent's Park (Mr. S. V. Kendall).—Consent.

Strand.—A deviation from the plan approved for the erection of a projecting clock in front of No. 22, Regent-street, Strand, so far as relates to the placing of letters on such clock (Mr. G. Hornblower for Elkington & Co., Ltd.).—Consent.

Wandsworth.—That the application of Messrs. Gelder & Kitchen for an extension of the period within which the erection of a mission-hall building on the eastern side of Mitcham-road, Tooting, to abut also upon the northern side of Longmead-road, was required to be commenced, be granted.—Consent.

Westminster.—An illuminated sign in front of No. 57, Buckingham-gate, Westminster (Mr. E. K. B. Cooch for the Auckland Motor Company).—Consent.

Hackney, South.—The raising of the boundary wall at the rear of No. 53, Chatsworth-road, Clapton, abutting upon the northern side of Glenarm-road (Mr. A. C. Coomber for Mr. G. Beyer).—Refused.

St. Pancras, South.—An iron and glass porch in front of No. 173, Euston-road, St. Pancras (Mr. G. Auber for Mr. J. W. Gandar Dower).—Refused.

Width of Way and Space at Rear.

Woolwich.—Four houses on the western side of Sandyhill-road, Woolwich, with the northernmost house at less than the prescribed distance from the centre of the passageway leading out of the western side of Sandyhill-road and with an irregular open space at the rear of the southernmost house (Mr. E. H. Wright for Mr. R. Haslam).—Consent.

Lines of Frontage, Projection, and Construction.

Westminster.—An iron and glass shelter at the Palmer-street entrance of the St. James's Park railway station, Westminster (Mr. H. W. Ford for the Metropolitan District Railway Company).—Consent.

Space at Rear.

Lewisham.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of Nos. 13 and 15, Eliot-park, Blackheath, with irregular open spaces at the rear (Messrs. Norfolk & Prior for Mr. J. Watt).—Consent.

Marylebone, West.—A block of flats upon the site of Nos. 5, 6, and 7, Northumberland-street, St. Marylebone, to abut at the rear upon a disused burial ground (Mr. F. M. Elgood for Messrs. T. H. Kingerlee & Sons).—Consent.

Formation of Street.

Wandsworth.—An extension of the time within which the roadway of a new street for carriage traffic to lead out of the western side of Streatham High-road to Guildersfield-road, Streatham, was to have been defined and thrown open to the public as a highway (Messrs. Fasnacht & Beale).—Consent.

Width of Way, Thickness of Walls, and Alteration of Building.

Paddington, South.—A deviation from the plan approved for the construction of a basement addition to the premises of the Aylesbury Dairy Company, Ltd., Moscow-road, Paddington, so far as relates to the omission of the basement portion of the western staircase and the substitution therefor of a spiral staircase (Mr. W. J. Keith for the Aylesbury Dairy Company, Ltd.).—Consent.

Building for the Supply of Electricity.

Poplar.—Retention of a steel chimney at the generating station, Glaucus-street, Poplar (Mr. J. H. Bowden).—Consent.

Cubical Extent.

Westminster.—The erection at the premises of the Army and Navy Auxiliary Co-operative Supply, Ltd., Howick-place and Francis-street, Westminster, of a fourth-story addition, to be used only as a store room (Mr. F. J. Barrett).—Consent.

Uniting of Buildings.

City of London.—The uniting of Nos. 40, 41, 42, 43, and 44, Holborn-viaduct, City, and an increase in the height of the external and party walls without increasing their thickness (Mr. W. E. Clifton).—Consent.

Wandsworth.—The formation of an opening at the ground-floor level between Nos. 121 to 125 and No. 127, Streatham High-road, Wandsworth (Messrs. W. Mason & Sons for Mr. G. Pratt).—Consent.

The recommendations marked † are contrary to the views of the local authorities concerned.

Engineering Societies.

JUNIOR INSTITUTION OF ENGINEERS.

A large number of members, accompanied by ladies, availed themselves of the invitation extended to the Institution by the directors of the Menpes Printing Company to visit their colour printing works at Watford, on a recent Saturday afternoon, the machinery, etc., being kept running for their benefit. The works are situated between Watford Junction and Croxley Green, quite close to the Grand Junction Canal, and on the borders of Cassiobury Park. The building is of a modern structure and composed of the ground floor only, with north lights to obtain the full advantage of daylight, which is one of the chief factors in good colour printing. The departments of the building comprise a spacious machine-room, containing twenty of the latest Miehle presses, and twenty-five Colt platens. The composing and folding departments are situated on the south and north side of the machine-room respectively. The photo-engraving department and studio, where the three and four colour blocks are made, is situated in an annexe to the main building, and comprise a most modern plant, including a powerful searchlight and a recently invented etching machine.

Legal Column.

THE LONDON BUILDING ACT.

THE case of London County Council *v.* Metropolitan Railway, commented upon by us on November 14 and March 6 last, has been carried to the Court of Appeal, with the result that that Court by a majority has reversed the finding of the Tribunal of Appeal and the Divisional Court. The question involved was whether the building line in a certain section of the Euston-road was the main line of buildings which had been erected before the year 1862 under various local Acts of Parliament, or whether certain one-story shops erected upon the forecourts were to be taken into consideration. As to some of these shops consent had been obtained for their erection under the Metropolis Management Amendment Act, 1862, whilst as to others there was a doubt as to whether they had had been erected by authority or not. The superintending architect fixed the building line as the fronts of the original buildings, but the Tribunal of Appeal adopted the frontage line of the shops, and the Divisional Court affirmed that decision.

The case raises points of extreme importance under the London Building Act, 1894. Sect. 216 provides that "all by-laws, regulations, orders, consents, conditions, and notices duly made, given, imposed, or issued under any Act hereby repealed, shall, so far as applicable for the purposes of this Act, be of the same validity and effect as if they had been made, given, imposed, or issued under this Act."

Sect. 215, which relates to repeal, provides that the repeal of existing Acts "shall not affect (*a*) the past operation of any enactment hereby repealed nor anything duly done or suffered under any enactment hereby repealed; or (*b*) any right, privilege, obligation, or liability acquired, accrued, or incurred under or in accordance with any enactment hereby repealed."

The Divisional Court had held that sect. 27, which provides that buildings erected with the consent of the authority should not affect the existing building line, was not retrospective, but the Court of Appeal have construed sect. 216 as enacting that previous consents shall have the same effect as if they had originally been given under the Act of 1894, and that effect must be given to sect. 27, and therefore that the Tribunal of Appeal and the Divisional Court had acted on a mistaken view of the law, and the case must go down again. The President of the Probate Divorce and Admiralty Division dissented from this judgment.

Such a reading of the London Building Act may cause some difficulties in other connexions, as it involves bringing all previous legislation in line with the provisions of that Act.

BUILDING SCHEMES AND RESTRICTIVE COVENANTS.

A decision has been given by the Court of Appeal in a case, Reid *v.* Bickerstaff, which is only at present shortly reported, and to which we may again refer later on.

The defendant's predecessors had purchased portion of a building estate in 1840 and entered into restrictive covenants with the vendors. In and after 1843 the plaintiff's predecessors had purchased from the same vendors other portions of the estate adjoining and subject to similar covenants. Other portions of the estate had been sold at different times to different purchasers to build houses of varying values. There was

Digitized by Google

nothing to show that the conveyance to the plaintiff's predecessors contained any reference to the conveyance to the defendant's predecessors, or that the defendant's predecessors had any knowledge of the covenants entered into with other purchasers before their conveyance in 1840. The Court, reversing the judge of the Chancery Division, held that the plaintiff had failed to show the existence of a building scheme involving reciprocal obligations between the purchasers or that the plaintiff was entitled to the benefit of the covenants contained in the conveyance to the defendant's predecessors.

In our Note to the case, Elliston *v.* Reacher, September 12, 1908, we summarised the conditions that must prevail:—(1) Both parties must acquire from a common vendor. That condition existed in this case. (2) Previous to sale the vendors must have laid out the estate subject to conditions, though varying in detail, forming a consistent scheme. This element seems to have been absent here. (3) The restrictions must be for the benefit of all the lots sold; and (4) the purchasers must have bought with the knowledge that the restrictions were to enure for the benefit of the other lots embraced in the scheme. This condition was absent, and thus these two absent elements seem sufficient to differentiate the present decision from that given in Elliston's case.

COVENANTS AND BUILDING LEASES.

In the case, Powell *v.* Helmsley, noted the *Builder*, March 27 last, the Court of Appeal have affirmed the decision of the Court below. In 1904 part of a building estate was conveyed to the defendant subject to covenants made for himself, his executors, administrators, and assigns as to the class of buildings to be erected thereon. Later in the same year an adjoining part of the estate was conveyed to one Bond, and in 1907 this, or some portion of it, was conveyed to the plaintiff in this action. Each conveyance included the benefit of the covenants contained in the conveyance to the defendant. In the meantime, on March 9, 1906, the defendant had granted a building lease to two persons, who commenced building on the property. This lease contained covenants similar to those in the conveyance to the defendant, but the lessees commenced building without supplying plans to the then owner of the adjoining property, or at least without obtaining his approval; and whilst regulations were pending between these parties the lessees became bankrupt, and, as the trustee in bankruptcy disclaimed the lease, the defendant entered into possession again. Negotiations were then entered into between the plaintiff, who had acquired the adjoining land, and the defendant, but these proved abortive. The breaches of covenant complained of by the plaintiff and found by the judge to have been committed were:—(1) Neglect to furnish plans; (2) the position of one of the outbuildings. As regards the first breach, the action being for a mandatory order for the removal of the buildings, the judge held that the action failed, since this would be satisfied by the payment of nominal damages. No appeal seems to have been made in respect to this point. As regards the second breach, the Court of Appeal affirmed the judge in the Court below in dismissing the action, for the breach which was not a continuing breach was committed before the plaintiff acquired the adjoining property, and although the plaintiff had the benefit of the covenants the conveyance to him did not confer a right to damages for breaches already committed when that conveyance was made to him; further, the defendant, having done nothing himself to promote or encourage the breach, was held not liable either in law or equity.

"MINERALS" AND THE FINANCE BILL.

The Chancellor of the Exchequer being asked in the House whether for the purposes of the Finance Bill, certain substances including Bath stone, York stone, Cornish and Scotch granite, shale, whinstone, flint, gravel, sand, limestone, slate, etc., would be deemed to be "minerals," replied that the word would have the meaning attached to it in various cases by the Courts of Law, and he especially referred to the case, Great Western Railway Company *v.* Carpalla United Clay Company, which was noted in the *Builder*, December 5, 1908. That case was only concerned with the meaning of the word in connexion with the Railway Clauses Consolidation Act, 1845, but it well illustrates the difficulties involved in the determination of such questions, and the litigation which will be occasioned by the proposed new form of taxation. The trial in the Court below lasted nine days, and a great many experts were called to give evidence. The Court of Appeal considered that the question was one for the Court, and disregarded expert evidence, the point being whether the china clay passed with the conveyance to the railway company, or whether it was excepted from the conveyance by reason of the terms of the Railway Clauses Consolidation Act. In relation to conveyances, one of the tests applied is whether the substance forms the substance of the subsoil, as if such was the case it would pass with the conveyance; but the Court of Appeal found some difficulty in deciding whether china clay was a mineral even in this limited connexion, and in reconciling a decision of the House of Lords with their own views. Lord Justice Fletcher Moulton said that if he were rash enough to venture a definition of "mineral," he should say that it was "any substance that can be got from within the surface of the earth which possesses a value in use apart from its mere possession of the bulk and weight which makes it occupy so much of the earth's crust"; and he intimated that limestone and ironstone would fall within his definition, and "contractors' muck" would be out side it.

For the purposes of taxation it may be assumed that the very widest interpretation would be given to the word, but the important point to be observed is that the Legislature are proposing taxation wholly uncertain in its character which will force expensive valuations and costly litigation upon the taxpayers, a new and most undesirable departure.

THE PROFESSION OF AN ARCHITECT.

Mr. Justice Warrington has given a decision in the case of Robertson *v.* Willmott which is of some importance to architects. Under a deed of partnership, dated November 7, 1906, the plaintiff and defendant entered into partnership as architects and surveyors. There was a clause in the deed which enabled either party under certain circumstances to determine the partnership upon notice, but it was provided that if the dissolution took place within five years the defendant should not practise as an architect and surveyor within certain defined limits. The defendant within five years determined the partnership, and he became manager at a fixed salary to an architect practising within the defined limits. The Court held that he was carrying on the profession of an architect in breach of the agreement, and granted an injunction. The case is reported in the *Times* June 26. There appears to be a distinction between carrying on a business and carrying on a profession as far as such covenants are concerned. A man may not be carrying on a business unless he is concerned in the profit or loss, but a professional man is exerting his profession whether he is using his professional skill for another at a fixed salary or whether he is practising on his own account.

GOLF CLUBHOUSE, LIVERPOOL.—A clubhouse has been built in connexion with the new links of the Liverpool Banking and Insurance Golf Club. The building contains a large clubroom, luncheon-room, dressing and bath rooms, etc., and was designed by Messrs. Haigh & Thompson, architects, Liverpool.

COURT OF COMMON COUNCIL.

THE Lord Mayor presided over a meeting of the Corporation held at the Guildhall on Thursday last week.

"*Bishopsgate.*"—The Streets Committee, reporting on a letter received from the London County Council, suggesting that Bishopsgate-street Within and Bishopsgate-street Without should be incorporated as "Bishopsgate" and re-numbered throughout, recommended that the suggestion be approved.

The Court agreed.

St. Bartholomew's Gates.—The same Committee submitted a plan of the gates inclosing the parish of St. Bartholomew the Great, recommending that a resolution be passed that such gates constitute obstructions and annoyances, that notice be served for their removal, and that the owners (the trustees of the parish) be paid by way of compensation the sum of 1,500*l.* for their removal. After some discussion the matter was referred back to the Committee for further consideration.

Public Lighting on the Continent.—The report of the deputation which visited various Continental cities *re* public lighting was submitted. It was decided to have it printed.

Housing and Town Planning Bill.—A letter from the Metropolitan Borough of Fulham, inclosing copy of a letter addressed to the President of the Local Government Board as to the expediency of amending the Housing and Town Planning Bill now before Parliament, with a view to eleminate certain of the provisions in the said Bill, and asking the Corporation to take similar action, was referred to the Improvements and Finance Committee.

Refreshment Pavilion, Highgate Woods.—The Coal and Corn and Finance Committee reported that the refreshment pavilion at Highgate Wood had been completed at a total cost of 323*l.* 10s. 6d., being 23*l.* 10s. 6d. beyond the sum allocated for the purpose. The Committee were authorised to pay the extra sum to the contractors, Messrs. Hawkins.

LONDON AND DISTRICT BOROUGH COUNCILS.

Camberwell.—The Baths Committee have decided in favour of providing additional exits at the Dulwich Baths, at a cost, including the acquisition of land, of 1,215*l.* A plan lodged by Mr. H. Falkner for the erection of a shop in front of 363, Old Kent-road has been passed.

Greenwich.—Plans have been passed for the following:—Mr. Ernest Wright, stabling and other buildings in Delacourt-road; the Molassine Company, additions to the Company's premises in Tunnel-avenue. Tenders are to be invited for forming and paving Sherington-road.

Hackney.—414*l.* is to be spent in substituting 10-ampère white arc lamps for 7-ampère white arc lamps in eight roads. Paving and sewer works are to be carried out in Upper Clapton-road, at a cost of 2,500*l.*, in connexion with buildings which are being erected by Messrs. Edmondsons, Ltd. The firm named are to repay the Council the 2,500*l.* in question. Egerton-road and Stamford-hill are to be made up and paved as new streets at an estimated cost of 2,109*l.* 600*l.* is to be laid out in footways in Queen's-road between Shrubland-grove and Dalston-lane, and sewers are to be constructed in Nightingale-road and Glyn-road, at a cost of 190*l.* and 175*l.* respectively. Plans have been passed as follows:—Messrs. L. H. & R. Roberts, St. Barnabas Church, Shacklewell-row; Mr. O. Archer, schoolroom, etc., at Salvation Army Training Home, Almack-road.

Islington.—Six roads are to be repaired, at a cost for materials as follows:—Cross-street, 131*l.* 9s. 7d.; Arlington-street, 172*l.* 15s. 10d.; Fontill-road, 172*l.* 9s. 3d.; Grove-road, 156*l.* 15s. 3d.; Cottenham-road, 177*l.* 2s. 1d.; and Crouch-hill, 132*l.* 19s. 8d.

Kensington.—Siphon trapped pan gullies are to be substituted for brick pit gullies in five streets, at an estimated cost of 170*l.*

Lambeth.—The following paving work is to be carried out during the coming financial year:—Bedford-road, wood, 3,759*l.* 10s., asphalte, 1,643*l.* 15s.; Burdett-street, asphalte, 371*l.* 13s. 6d.; Conroy-street, asphalte, 957*l.*; Fountain-street, asphalte and granite pitching, 1,217*l.*; Langfranc-street, asphalte, 292*l.*; Tinworth-street (railway bridge to Vauxhall-walk), granite pitching, 981*l.* 12s. Plans have been passed for Messrs. Sheppard & Co., 27, Kyrle-road, Clapham Common, for twelve houses in Clovelly-road, twenty houses in Sycamore-road, and nine houses in Upper Tulse-hill. A plan has also been passed by Mr. H. Bignold, on behalf of Mr. Vatcher, for a two-story building at the rear of 232, Wandsworth-road.

Paddington.—The Works Committee of the Borough Council have decided in favour of

Digitized by Google

various interests being acquired in connexion with the reconstruction of Ranelagh-road footbridge, at a cost of 550*l.*, and that the work of reconstruction be carried out at a cost of 2,350*l.*

Southwark.—Superheaters are to be installed to four boilers, at an estimated cost of 570*l.* Newington Public Hall is to be rewired by the Electric Light Department, at an estimated cost of 41*l.*

Westminster.—171*l.* is to be spent in painting works at public conveniences. The cost of the widening which is to be carried out in North Audley-street is estimated at 700*l.* exclusive of the work of the diversion of mains. Messrs. Drivers, Jonas, & Co. have applied for consent to the formation of a street 40 ft. wide, to lead from Tothill-street to Princes-street. Large blocks of offices are to be constructed in the new thoroughfare. In regard to the widening of Wardour-street the Improvements Committee have arranged to pay Messrs. Ellerington & Scott 1,000*l.* in respect of their leasehold interest in No. 52, and to grant them a building lease of the land which is not required for the widening for a term of eighty years, at a ground rent of 60*l.* a year. The following plans have been passed:—Mr. G. Thrale Jell, buildings with projecting balconies on site of 6, 7, 8, and 9, Bury-street and 17, Ryder-street; Messrs. Clayton & Black, garage and works, Grosvenor-road, abutting on Glasgow-terrace and Caledonia-street.

Woolwich.—The Council has passed plans for the following:—Mr. J. R. Beale, per the Property Agency and Exchange, 37, Great Tower-street, E.C., six houses, Green-lane, New Eltham; Mr. A. Cameron Corbett, M.P., per Mr. J. J. Bassett, 121, Earlshall-road, Eltham, eleven houses in Dumbreck and Crookston roads, Eltham; Mr E. H. Wright, 6, Thomas-street, Woolwich, four houses, Sandy Hill-road, Plumstead.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Cooper's Company School.—The Higher Education Committee reported that the partial rebuilding of this school had been completed. The cost was estimated at 23,000*l.*, but the time being an exceptional one for building, the governors decided to completely rebuild, at a total cost of about 40,000*l.*

School of Photo Engraving.—Reporting on the proposal to rebuild this school in Bolt-court, Fleet-street, the Accommodation Committee stated:—

"The approximate floor area of the existing premises is 7,861 sq. ft., whereas to accommodate adequately the present school and to allow for a reasonable increase of students attending a floor area of bout 15,000 sq. ft. is desirable. The merits of various sites and buildings had been considered, and the existing site, covering about 6,000 sq. ft., is by far the most suitable."

The cost of the proposed new buildings is 20,000*l.* The report was adopted.

New Croydon School.—Notice was given by the Croydon authority of its intention to build a new elementary school for 1,200 children on a site in Stamford-road, Norbury.

Holy Trinity C.E. School, Chelsea.—Plans were passed, submitted by the managers, for improvements and enlargements.

Torrano-avenue, St. Pancras.—Arrangements have been made for the clearance of this site by the demolition and removal of houses. For the purchase of the houses the highest of nineteen tenders, Mr. J. Moyes, 125*l.*, was accepted.

New Secondary School.—For the new school for 456 girls on the Furzedown site, Wandsworth, the tender of Messrs. J. & C. Bowyer, 33,575*l.*, was recommended. Architect's estimate, 32,961*l.*

New Lewisham Elementary School.—For a new school on the Manor-lane site (architect's estimate, 17,600*l.*) the tender of Messrs. F. & E. Davey, 16,235*l.*, was recommended. The school is for 817 children.

New St. Pancras School.—For the new higher school on the Camden-street site the tender of Messrs. McLaughlin & Harvey, 12,531*l.*, was recommended. The school is for 440 children, and the architect's estimate was 13,437*l.*

New Islington School.—For the new school for 500 elementary children on the Barnsbury-park site (architect's estimate, 10,027*l.*) the tender of Messrs. Patman & Fotheringham, 9,541*l.*, was recommended.

Poplar Centres.—For domestic economy and metalwork centres and science room on the Milwall site, the tender of Messrs. F. & E. Davey, 4,054*l.*, was recommended, the architect's estimate being 4,250*l.*

Islington Centres.—For domestic economy and manual training centres at Nicholay-road the tender of Mr. J. Stewart, 1,391*l.*, was recommended. Architect's estimate, 1,400*l.*

New Schemes.—Estimates were passed, total 24,751*l.*, for the erection of a higher-grade school on the St. Mark's-road site, Kensington, and the enlargement of the Canonbury-road and the Maryon-park, Woolwich, schools. It is proposed to proceed with the work without waiting for the execution of contracts, the Chairman of Committee being authorised to accept a tender.

Poplar School of Engineering.—It was decided to build residential accommodation for a caretaker, at an estimated cost of 450*l.*, the work to be done by Messrs. Gladding & Co., the Council's schedule contractors.

Bolingbroke-road School, Battersea.—In connexion with the structural improvements here it was aranged that a playground should be drained, at a cost of 250*l.*, by Messrs. W. Johnson & Co.

Teesdale-street, Bethnal Green.—In connexion with improvements it was decided that the contractors, Messrs. W. Johnson & Co., should, at an estimated cost of 150*l.*, demolish a house and incorporate the site in the school playground.

Paddington Technical Institute.—It was agreed to install electric light, at a cost of 575*l.*

Franciscan-road School, Wandsworth.—The estimate of Messrs. J. Garrett & Son, 140*l.*, was accepted for fencing and gates to inclose strip of land in playground.

Cleaning and Painting Schools.—The following tenders were accepted:—

	Amount of Tender.
Anerley School for the Deaf. E. J. Orpin ..	£126 10 0
Bermondsey.—Neckinger-road. J. Scott Fenn	359 0 0
Page's-walk. S. Musgrove	256 19 0
Bethnal Green, N.E.—Portman-place. H. Willmott	645 0 0
Rochelle-street. G. Butters	88 0 0
Bow and Bromley.—Malmesbury-road. H.C. Horswill	583 0 0
Brixton.—Hackford-road. J. Garrett & Son	380 0 0
Camberwell, N.—Camberwell School of Arts and Crafts. W. M. Glendinning	423 0 0
Lelpsic-road. J. Garrett & Son	361 0 0
Clapham.—Bonneville-road. W. M. Glendinning	375 0 0
Honeywell-road. W. Johnson & Co., Ltd.	420 0 0
Ponton-road (day industrial and infants). Lathey Bros.	378 0 0
Tennyson-street. J. Garrett & Son	242 0 0
Dulwich.—The "Denmark-hill." H. Line ..	375 0 0
The "Dulwich Hamlet." Holliday & Greenwood, Ltd.	353 0 0
Foress-road. Stevens & Son	109 10 0
Greenwich.—Greenwich Higher Elementary. E. Mills	205 0 0
Hampstead.—Fleet-road. H. & E. Lea	370 0 0
Harrow-road Iron Buildings. H. W. Crook & Son	53 12 0
Hoxton.—Curtain-road. J. Haydon & Sons	315 15 0
Islington, N.—Duncombe-road. J. Stewart.	565 5 0
Lewisham.—Plassy-road. E. Proctor & Sons	370 0 0
Stillness-road. E. Proctor & Sons	360 0 0
Sydenham Hill-road. J. Scott Fenn	473 18 0
Norwood.—Woodland-road. W. Young	223 0 0
Peckham.—Woods-road. G. Parker & Sons	477 0 0
St. Pancras, E. — Great College-street. Stevens & Sons	328 0 0
St. Pancras, N.—Burghley-road, and the County Secondary School, Kentish Town. Stevens & Sons	568 0 0
St. Pancras, W.—Stanhope-street. C. P. Roberts & Co.	442 0 0
Stepney.—Dempsey-street. Newell & Lusty	471 0 0
Myrdle-street. K. Woollaston & Co.	454 18 0
Trafalgar-square. F. & E. Davey, Ltd. ..	496 0 0
Stockwell Secondary School. J. Garrett & Son	178 0 0
Walworth.—The Michael Faraday. J. R. Sims	279 0 0
Wandsworth.—The "Southfield." R. S. Ronald	465 0 0
Swaffield-road. W. Johnson & Co., Ltd...	394 0 0
Woolwich.—Elizabeth-street. Thomas & Edge	219 0 0
Purrett-road. E. Proctor & Sons	260 0 0

Remuneration of Quantity Surveyors.—In view of the nature of the work and difficulty of preparing quantities in connection with the improvements at the York-road school, Islington, the claim of Messrs. Strudwick, quantity surveyors, for 1½ per cent. instead of 1¼ per cent. in respect of the main bill (7,526*l.*) was allowed.

Prichard's-road, Bethnal Green.—For stripping and reslating the roof of the school the estimate of Messrs. W. Johnson & Co., 288*l.* 10s., was accepted.

Housewifery Centre.—The estimate of Messrs. Marchant & Herst, 136*l.*, for adapting 65, Tollington-road, Islington, as a housewifery centre, was accepted.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly meeting of the above Board on Saturday the following matters were dealt with:—

Orchard Hospital.—It was agreed that the Works Committee be authorised to take all necessary steps for the execution, at very short notice, of the following works at the Orchard Hospital, if and when, in the opinion of the Hospitals Committee, it may be considered prudent, viz.:—(*a*) The replacement of the kitchen fittings and disinfecting machine (estimated cost 2,450*l.*); (*b*) the restoration of the laundry machinery and fittings (estimated cost 3,350*l.*); (*c*) the provision of internal telephones (estimated cost 145*l.*); and (*d*) the provision of a weighbridge at the west gate (estimated cost 200*l.*).

North-Eastern Hospital.—A report was submitted on the present accommodation for the assistant medical officers at the above hospital, and it was agreed to ask the consent of the Local Government Board for the adoption of the old discharge rooms for the purposes of bedroom and sitting-room accommodation.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

BADBROOK.—School (2,000*l.*). Mr. R. S. Phillips, architect, The Cross, Gloucester.

Cardiff.—Proposed new technical institute (40,000*l.*). Education Secretary, City Hall, Cardiff.

Carshalton.—The Urban District Council has passed the following plan:—Two houses, Stanley-road. Mr. Bainbridge.

Dudley.—The Town Council has passed the following plans:—Additional classrooms at Baptist Church, Cinder Bank, Netherton, for the trustees; three houses off Blackacre-road, also four houses, Blackacre-road, for Messrs. Jones Brothers.

Dumfries.—Hostel at Academy (2,000*l.*). Messrs. Barbour & Bowie, architects, 53, Buccleuch-street, Dumfries.

Dunston-on-Tyne.—School. Messrs. Potts & Son, architects, 57, John-street, Sunderland.

Eastbourne.—The Town Council has passed the following plans:—Addition to Southdown House, Silverdale-road, additions and alterations to "Priorleigh," Denton-road, also additions to Cholmeley House, Summerdown-road, Mr. F. G. Cooke, architect; two detached houses, Kitchenham-road, and one in Hillside-avenue, Mr. A. A. Oakden, architect; shops and alterations to houses, Ocklynge-road, also seven houses, Green-street, Mr. A. Chandley, architect; four houses, Desmond-road, Mr. C. M. Wood, architect; addition to Burlington Hotel, Mr. W. Campbell, architect; addition to Queen's Hotel, Messrs. W. L. Wallis & Co., builders.

Eccles.—The Town Council has passed the following plans:—Thirteen houses, Ivy-street, Patricroft, Mr. Arthur Lockwood; extension to machine shop, Syratt-street, Monton, Messrs. Mitchell, Shackleton, & Co., Ltd.; pair semi-detached houses, Stafford-road, Mr. A. C. Russell; rebuilding slaughter house, Liverpool-road, Patricroft, Mr. Joseph Hurst.

Hawarden.—New school. Mr. S. Evans, architect, King-street, Mold.

Hayes.—The Urban District Council has passed the following plan:—Factory near Silverdale-road for the Orchestrelle Company.

Heywood (Lancashire).—Tower. All Souls' Church. Mr. F. P. Oakley, architect, Manchester.

Hove.—The Town Council has passed the following plans:—Two pairs semi-detached houses, Leicester Villas, Mr. J. Barsley, for Mr. F. J. Edmonds; one pair semi-detached houses, Osmond-road, Messrs. W. & A. Elliott; seven terrace houses, Bolsover-road, Mr. H. Roffey, for Mr. T. W. Bassett; ten houses, Marine-avenue, Messrs. Barnard & Son; two pairs semi-detached houses, Silverdale-road, Mr. F. Parsons.

Lynton.—Wesleyan church and schools. Messrs. La Trobe & Weston, architects, Corn-street, Bristol; Messrs. Tucker Bros., builders.

Northampton.—School, Billing-road (19,500*l.*). Mr. A. Fidler, Surveyor, Town Council. The Town Council has passed the following plans:—Additions to factory, Stimpson-avenue, Messrs. J. Sears & Co.; extension of skating rink, St. James's Park-road, for the Castle Rink Company; additions to factory, Sharman-road, Messrs. Padmore & Barnes; additions to St. Edmund's Parish Buildings, Whitworth-road, for the trustees; ten houses, Norton-road, Mr. W. Higgins.

Pinner. — Baptist chapel, Payne's-lane (4,000*l.*). Rev. J. S. Bruce, pastor.

Plymouth.—Church. Mr. Rogers Kitsell, architect, 16, George-street, Plymouth.

Swansea.—Additions to pier and new skating rink. Manager, Mumbles Pier Company, Mumbles, Swansea.

Uxbridge.—The Urban District Council has passed the following plans:—Laundry, New Windsor-street, Mr. Sturman; pair houses, Norton-road, Mr. T. Westacott.

Wembworthy.—County school. Mr. P. Morris, architect, 1, Richmond-road, Exeter.

Wigan.—The Town Council has passed the following plans:—Six houses, Westminster-

Digitized by Google

street, Mr. Edward Hesketh; slaughter house, etc., Mill-yard, Scholes, Mr. Peter Gaskell; two houses, Barnsley-street, Mr. M. Clayton; five houses, Walkden-avenue, Messrs. W. & J. Johnson; two houses, Kenyon-road, Mr. T. A. Aspinall; six houses, Schofield-lane, Mr. William Darbyshire.

York.—Skating rink. Messrs. Richardson & Trotter, auctioneers, Lendal.

Correspondence.

INSTITUTE OF ARCHITECTS:

THE PROPOSED BY-LAW ENACTING COMPULSORY RETIREMENT.

SIR,—It is sincerely to be hoped that the members of the Institute will not confirm the proposed by-law, upon which a poll is now being taken.

The proposal has been made without due consideration of its details, or of its relation to other by-laws; and serious, if not insurmountable, practical difficulties will arise if it is passed.

It enacts that one-sixth "*shall* retire and shall not be eligible for re-election for two years." This wording implies, according to the usual phraseology of such regulations, that the remaining five-sixths shall *not* retire; which is in conflict with the by-law as to the mode of electing the Council.

By making the period two *years* an unexpected result will follow, inasmuch as the Council does not go out of office until the end of June, and therefore the two years of disability would not end until *after* the election, which takes place in May. As the wording stands, the actual period of exclusion would be three years.

There is nothing in the proposed by-law to show whether a member whose term is running out, and who is proposed as a Vice-President, can accept the nomination, or whether he is precluded from doing so by being compulsorily retired.

The by-law does not establish (as it ought) any method of dealing with the first selection of those who are to be turned out. Are we to understand that at the end of the first year the three members of oldest service are to go?

All these points would have been capable of arrangement after proper consideration; but as the by-law, if passed, must be passed without amendment, they would lead to serious difficulties. To shoot it, in its present undigested state, into the rest of the by-laws as passed, would produce endless confusion.

A change of *personnel* in the Council is eminently desirable, but that it can already be obtained under the present system, if the electorate feel that it is desirable, is proved by the elections of 1904 and 1905, when about two-thirds of the Council were changed, as well as by that of the present year, when, out of the eighteen members of Council there were four new members (instead of the three contemplated by the by-law); and four new associate members.

The imposing of disabilities such as those contemplated is a device only adopted, so far as I am aware, by obscure societies and clubs. It has no acceptance, I believe, in great institutions, and certainly none in public life. On the contrary, the rendering a person ineligible for two years for election on to a public body is only adopted as a severe form of punishment for serious electoral malpractices.

J. A. GOTCH.

Kettering, July 7, 1909.

P.S.—The Institute's solicitors strongly and repeatedly advised the by-laws committee against the proposed change. Their experience was that compulsory exclusion led to eventual disaster.

***We entirely support Mr. Gotch's protest. The proposed regulation is a foolish and mischievous one, totally uncalled for.—ED.

"A DIPLOMA COURSE IN ARCHITECTURE."

SIR,—Although the point I wish to refer to does not come, strictly speaking, under the above heading, may I be allowed a word in reply to Mr. Travers? because, apparently, he has no idea of what the University of London is doing for architectural education, and his question and suggestion are misleading.

At the University of London, University College—to give it its official title—there are two courses for architectural students, the B.A. degree course and the certificate course. Each is of three years' duration, and each provides that students shall attend lectures in four general subjects in their first year. Both courses are especially arranged to enable students to continue their liberal studies concurrently with commencing their professional training. Exception is only made in the case of those who have already taken their degree or passed the matriculation examination of a recognised University.

F. M. SIMPSON.

University College, Gower Street.

MIDDLESBROUGH LIBRARY COMPETITION.

SIR,—It is gratifying to find you taking up the position that it is time assessors appointed to adjudicate on competition designs should realise the fact that they are at least expected to pay some attention to the conditions laid down.

I also certainly agree with you that the Institute Competitions Committee have not taken the protest submitted to them by a large number of the competitors seriously enough. For some reason or other they have carefully given answers to the unimportant points and utterly ignored the vital ones. It almost appears as if it was difficult to find an adequate reply to them.

The Middlesbrough Library Committee asked in their conditions for a secondary entrance to Dunning-street, giving access to the juveniles' and ladies' room, and the heating cellar was to be placed on the ground floor. It would be evident to every competitor that these requirements, if faithfully adhered to, would necessitate a far from ideal plan. It became necessary to place these rooms in the external angle of the site formed by Dunning-street and Grange-road, and their consequent isolation from the lending library became practically inevitable. The demand for a ground-floor heating chamber, again, meant the sacrifice of much valuable space. The merest tyro in design would at once see that these restrictions were unnecessary, and if brought into force would prove a serious handicap. The numerous questions addressed to the Committee on these points only produced most definite replies to the effect that they must be adhered to, and I see from one of your contemporaries that a certain competitor even received a definite assurance from the Town Clerk that the assessor would be instructed to make his award upon the conditions laid down. It would now be interesting to know whether the assessor was so instructed.

The Institute Competitions Committee know that these important points, as well as other minor ones, have been deliberately ignored in the selected design, and an answer should at least have been given to all the questions that the petitioners brought forward.

I know that it is too late to expect the award to be now upset, and, even if it were, the Middlesbrough Library Committee would, unfortunately, have to put up with a far less satisfactory building than the one they will now obtain. This at once brings us face to face with the old, old argument that a competition is only held in order to obtain the best design, and that if the best design is so obtained no one has any cause for complaint. This is a sound argument when the conditions laid down have been generally adhered to, and no objection could even reasonably be made to any departures on small matters of detail. When, however, vital points are ignored, it is surely the assessor's duty to at once place on one side any plans that have failed to observe them. If those who drew up the instructions obtain an inferior result by reason of their own restrictions, the blame can only be attached to them for not calling in the assessor to assist in their preparation.

It is, at any rate, time that the Institute made an official pronouncement as to the duties of an assessor in future competitions where a similar tale of affairs obtains. Competitions are at any time sufficient of a lottery, without the additional risk of not knowing whether an assessor will take the conditions laid down into serious consideration.

F.R.I.B.A.

THE LONDON ASSOCIATION OF MASTER DECORATORS.

SIR,—It may interest your readers to know that the first annual general meeting of this Association was held at the Holborn Restaurant on Monday, June 7, when a large number of members were present.

The meeting was a most successful one, and the President, Mr H. A. Campbell, made some interesting statements as to the useful work done by the Association during the first year of its existence, and dealt at considerable length with the work which it has in hand for the current year.

The following office-bearers were re-elected:

President, Mr. H. A. Campbell (Campbell, Smith, & Co.), 25, Newman-street, W.

Vice-President, Mr. John Anderson, 4, Clarevillegrove, South Kensington.

Treasurer, Mr. J. J. Honeychurch, 30, Queensdale-road, Holland Park, W.

And the following gentlemen were elected to fill the vacancies arising on the Committee in accordance with the rules:

H. H. Holliday, 1, Harrington-road, South Kensington.

F. De Jong, 84, Albert-street, Camden Town, N.W.

C. E. Wilkinson, 49, Marloes-road, Kensington.

R. Salisbury (Messrs. R. Salisbury & Co., Ltd.), 69, Walton-street, S.W.

William Morris, Ruskin House, Rochester-row, Westminster, S.W.

H. W. Sanders, 92, Crawford-street, W.

W. J Renshaw, 287, Upper Richmond-road, Putney, S.W.

Chas. Saul (Messrs. Johnson, Saul, & Co.), 36, Thurloe-place, S.W.

The other members of the committee who remained in office are:

F. Dakin, 151, Upper Richmond-road, Putney, S.W.

A. Andrews (Jones & Andrews), Crescent Works, Beckenham, Kent.

A. Campbell (Campbell & Christmas), St. Oswald's Studios, West Brompton, S.W.

F. Charman (Charman & Walton), 30, Wells-road, Sydenham, S.E.

F. Chesterton (G. & A. Brown, Ltd.), 167, Hammersmith-road, S.W.

G. Colloy (B. Colloy & Sons), 135 to 137, Portland-road, S.W.

R. W. Jeffries (W. Jeffries & Sons), Crawford-street, W.

C. W. Patten, 35, Great Ormond-street, W.

T. S. Rowdon (Rawlings Brothers, Ltd.), 82, Gloucester-road, S.W.

Herbert Sheppard (Sheppard Brothers), Snakes-lane, Woodford Green.

H. Stephens (Stephens & Son), 13, Hill-street, Woolwich.

Henry E. St. John (J. H. St. John & Sons), Seymour-place, W.

Arthur Webb, Langthorne Works, Romford-road, Stratford, E.

It may also be of interest to state that the first annual dinner of the Association was held, under the presidency of Mr. H. A. Campbell, at the Holborn Restaurant on Thursday, June 10, when about fifty members and a few friends were present. Amongst the guests were Mr. J. D. Crace, President of the Incorporated Institute of British Decorators; Mr. J. Puttrell, President, and Mr. W. G. Sutherland, Secretary, of the National Association of Master House Painters and Decorators.

I shall feel much obliged if you will be so good as to mention also that, as Secretary of the Association, I shall be glad at all times to hear from any member of the trade who may think of joining the Association, and to give them any information they may require.

A. DAVIDSON.

21, *Finsbury-pavement, E.C.*

RE PROPOSED STEEL SKELETON FRAMEWORK IN BUILDINGS.

SIR,—I wish to draw your attention to a misprint in the *Builder* of last week. In my evidence before the House of Commons Committee, when illustrating the effect of the proposed Bill on a building costing, say, 100,000*l*., at a ground rent of 5,000*l*. per annum, I estimated the delay through having to deposit all plans and details before the work could be started to be from eight to twelve weeks. This you will readily see would amount to 800*l*. to 1,200*l*. In your report you state 8,000*l*. to 12,000*l*. I shall be glad if you will kindly correct this. JAS. CARMICHAEL.

ILFORD ISOLATION HOSPITAL.—The opening has taken place of the extensions which have been made to the Ilford Isolation Hospital, Grove-road, Chadwell. The additions provide twenty-six additional beds, with staff accomodation. The estimated total cost is 5,493*l*. Mr. Herbert Shaw, M.Inst.C.E., Surveyor to the Urban Council, was responsible for the plans.

Digitized by Google

THE BUILDER

JULY 10, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, JULY 10.

Manchester Society of Architects (Incorporated).—Visit to Ilkley and Bolton Abbey, when "Heathcote," Ilkley (Mr. E. L. Lutyens, architect), St. Margaret's Church, Ilkley (Mr. R. Norman Shaw, architect), and Bolton Abbey will be visited. Mr. J. H. Sellers will be the leader.

MONDAY, JULY 12.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. J. Paul Williams (Pilkington & Co.), entitled "A Few Facts about Asphalt." 8.15 p.m.

TUESDAY, JULY 13.

Manchester Society of Architects (Incorporated).—Visit to buildings at Owen's College, *i.e.*, Students' Union (Messrs. Beaumont & Capper, architects), Engineering Laboratory (Professor Capper, architect), Gymnasium (Professor Capper and Mr. J. L. Grant, architects).

WEDNESDAY, JULY 14.

Northern Architectural Association.—Annual excursion, Selby and neighbourhood.

THURSDAY, JULY 15.

London Master Builders' Association.—Council meeting and Organisation Committee meeting.

JULY 16 to 23.

The Architectural Association.—Exhibition of work done in the School of Architecture, also an exhibition of A.A. Prize Drawings and Designs, executed in the School of Design. The Drawings will be on view from 10 a.m. to 7 p.m. from July 16 to July 23, at 18, Tufton-street, Westminster.

SATURDAY, JULY 17.

Junior Institution of Engineers.—Visit to the Ordnance Engineering Works of Messrs. Vickers, Sons, & Maxim, at Erith, 10 a.m.

Fifty Years Ago.

FROM THE *Builder* OF JULY 9, 1859.

THE SERPENTINE.

THIS beautiful sheet of water, so essential to picturesque effect in Hyde Park, has been of late the subject of much animadversion; it has been described as a noisome and pestiferous pool, shedding malaria over the verdant slopes as far as the barracks, and the splendid mansions of the Queen and Prince's gates; and it has been alleged that the lime thrown in at the margin only retains and condenses the noxious vapours, which are again liberated by the summer sun—one illustrious commentator having gone so far as to deplore the aristocratic taste of promenading on the Drive, and of riding in Rotten-row!

It has been suggested that this extensive sheet of water, a mile in length, and covering some 150 acres of ground, should be treated like the canal of St. James's-park, and concreted throughout its whole extent. Is such a process necessary to secure a wholesome and comparatively pure body of water? It is pestiferous chiefly because the supply of the Bayswater rivulet is not only inadequate, but tainted with fœcal matter, also because the springs which arise within its area are scarcely enough to feed the daily evaporation from the surface. But there is also another cause: hitherto the brook which fed it was the common sewer of a large district—it bore down and deposited a black slime, which lies at the bottom, and which, as the water becomes warm, surrenders a portion of concentrated and submerged gases.

*** We do not know what was actually done, but it is evident that fifty years has improved the Serpentine, at all events.—ED.

BUILDER COMPETITION FOR A FOUNTAIN.

AFTER the satisfactory result of our last competition, for the treatment of a Façade of a Club in Ferro-Concrete, the result of the competition for a design for a Fountain is rather disappointing. We should have thought such a fascinating subject would have been more attractive than a ferro-concrete front, but it has not proved so. There is no design which can be considered really to show any distinction; there are some fairly good ones. Unfortunately, one or two of those which show the best ideas are marred by very weak drawing in the perspective view, while on the other hand some of the best drawn are commonplace in conception and design.

The Assessors were unanimous in their decision that the first prize could not be awarded; there was no design good enough to merit it. After a good deal of consideration of the best of the designs, they decided to recommend that the second prize of 10*l.* should be awarded to No. 40, and that an extra prize of 5*l.* should be awarded to No. 58, which had a good deal of merit.

No. 40 has placed his fountain in a rather unusual manner, in the centre of a quadrangle apparently below the general level of the ground, the vertical sides of this being faced with retaining walls treated with a Doric order, with recesses at intervals. The fountain shows a square block in the centre, treated with rather bold and effective mouldings, surmounted by a circular crowning feature; it is connected with the lower portion of the design by a bold scroll or inverted console on each face, with some decorative figures of small nude children in the orthodox Renaissance manner. In the lower portion the author seems to have been thinking of the Trevi fountain, which is not a good precedent, and his groups of seahorses and cornucopiæ are rather too *rococo*. The outline margin of the lower basin is modelled with an effective curvature of line. There is a great deal of cleverness in this design, and the details are well and carefully drawn; the drawback to it is in the rather uncertain and lumpy design of the lower portion.

No. 58 shows a rather new idea for the treatment of the water, which is poured from a horizontal slit near the top of each face and descends in a sheet down a slightly battering surface of masonry, discharging at the foot into a basin whence it overflows the rim. The arrangement would certainly have a good effect, and the perspective of the drawing is sketched in with an artistic hand; but it is a little too much like a building or tower rather than a fountain. The architectural portion of a fountain should have a decorative grace of line about it, and not be solidly built up in severe lines. There is, moreover, a little too much of the trail of *art nouveau* over this design.

The Assessors, after deciding these two prizes, selected four other designs as worthy of "mention" (according to the French system); the order of Mentions representing the order of merit.

No. 29 (first mention), with its circular colonnade with the water playing about in it, represents one of the best ideas in the collection; unfortunately it is very inadequately worked out in detail, and the small perspective sketch very poorly drawn; but it certainly is a pretty idea. No. 38 (second mention) shows a good architectural treatment and is well drawn, but (like No. 58) is rather too heavy in character and outline for a fountain. No. 15 (third mention) has got the right kind of idea for the architectural treatment of a fountain—a decorative rather than a built design; his conception might be worked out into a very good design, but it fails in respect of refinement of detail; and his perspective is not quite right in drawing. No. 18 (fourth mention), a design which depends a good deal on sculpture, shows artistic feeling: the fountain basin rests on four kneeling figures, and a nude nymph standing in the centre holds an urn from which a thin thread of water descends. The objection to this is that not enough is made of the water, which after all should be one of the principal decorative elements in a fountain design; but it is a pretty idea, and the small perspective sketch in water-colour is an effective bit of work.

The names of competitors are as follows:—

No. 40. Second prize, 10*l.*: Mr. H. B. Laycock (Manchester).

No. 53. Extra prize, 5*l.*: Mr. W. Friskin (Glasgow).

No. 29. First Mention: Mr. Cyril Dodgson (Accrington).

No. 38. Second Mention: Mr. F. S. Watson Hart (London).

No. 15. Third Mention: Mr. F. C. Robson (Streatham Hill).

No. 18. Fourth Mention: Mr. Percy May (Honor Oak).

Cheques for 10*l.* and 5*l.* respectively have been sent to the winners of the Second Prize and the Extra Prize. The other drawings will be returned to their owners after this week.

It is curious how difficult it seems to be to obtain strict attention to Instructions in a competition, however clearly they may be expressed. In spite of the direction as to sending the name in a sealed envelope, and putting no motto or distinguishing mark on either envelope or drawings (the usual method now in all properly-conducted competitions), one competitor inserted his card with name and address with the drawings, which of course had to be returned to him; and another put a motto on drawings and envelope; this latter was allowed to pass, as none of the Assessors were any the wiser for it. Apparently some people who read Instructions for a competition have a difficulty in realising the meaning of words.

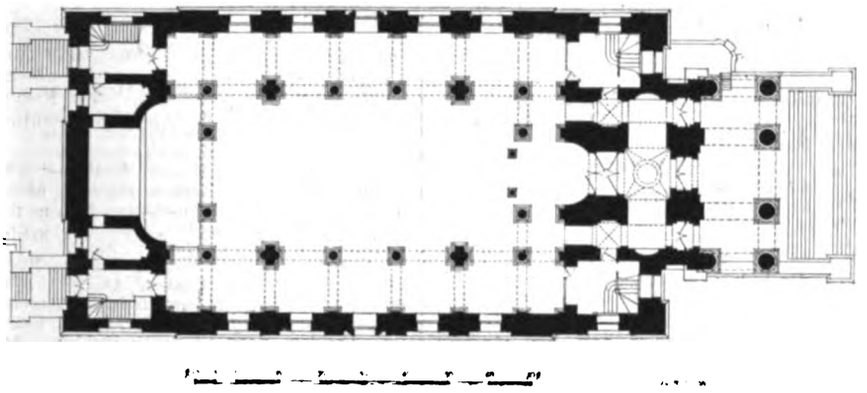
We must express our best thanks to the Council of the Architectural Association for their kindness in again allowing us the use of their gallery for the exhibition of the drawings, and also to Mr. D. G. Driver, the Secretary, who was always ready to assist us in every way.

Illustrations.

CHRIST CHURCH, SPITALFIELDS.

THIS, one of the "Fifty Churches," was begun in 1714, and consecrated on July 5, 1729, having been built at a cost exceeding 60,000*l.*, after designs by Hawksmoor, whereof there is a portfolio containing some twenty working drawings and sketches in the British Museum. The parish was then constituted for what had been a hamlet of St. Dunstan's, Stepney. The dedication commemorates, in name, the priory and hospital of St. Mary Spital, founded in honour of Jesus Christ

Digitized by Google



Christ Church, Spitalfields. Plan.

and the Virgin Mary, 1197, in the Roman burial-ground of Lolesworth, by Walter Brune, sheriff in 1203, and Rosia, his wife, for canons regular of St. Augustine. In the vaults are stone coffins dug up in Lolesworth. The spire of the church rises to a height of 225 ft., exceeding by 23 ft. that of the Monument. The fabric was much injured by a fire which broke out on February 17, 1836, shortly after 9,000*l.* had been expended upon its reparation; large sums have been spent since. On January 3, 1841, the tower and roof were damaged by lightning. In 1866 Ewan Christian carried out extensive alterations of the interior, with reseating for 1,100, decoration, and removal of the galleries. The fine organ, 1730, by Bridge (also ascribed to his master, R. Harris the younger), has been enlarged by Lincoln, Gray & Davison, Hill, and others. The open-air pulpit, by, we gather, Mr. A. Cox, was erected in the churchyard eight years ago in memory of a rector, the late Dr. Billing, Bishop of Bedford. It recalls the famous pulpit-cross which, until the days of the Civil War, stood in the burial-ground (since Spital-square) of the priory hospital. A monument, with effigy in his robes, of Sir Robert Ladbroke, lord mayor in 1747-8, is an early work of Flaxman. The Metropolitan Public Gardens Association laid out the churchyard in 1892.

Whatever its faults, and they are many, Hawksmoor has produced a design totally unlike anything seen before or after. His favourite tower buttresses to the north and south are here incorporated into one wide screen façade, divided into three bays, the centre occupied by the large belfry window, the side bays by niches. The entrance portico is of a very original type. The view will save further description. A glance at the plan will explain the treatment of the bases of the three-quarter columns at the angles of the tower base. Above the clock stage rises a broach spire, which at a little distance might be mistaken for Early English, save that the angle faces are carved and the other faces are panelled; the apex, moreover, is blunt; possibly Hawksmoor started with the idea of an obelisk, and finally developed the conception of a spire. It cannot be denied that there are elements of the sublime in this front elevation; at the same time, the outline is awkward, the transition from the buttress façade to the upper portion being very inelegantly contrived.

The interior is one of the most remarkable of its date in London. It is divided into nave and aisles by an arcade of a composed order above which rises a clearstory, the aisles being roofed by as many barrel-vaults as there are arches in the arcade; the centre intercolumniation is wider than the others, but the crown of the arch is kept to the ruling level by its elliptical shape. The frieze and entablature of the first column from the east end is carried right across the nave, supported by two isolated columns; the plan (which has been taken above the pedestals, about 9 ft. in height, to give a more graphic idea) will explain this arrangement. A kind of chancel screen is thus formed, carrying, not a rood, but the Royal Arms. The side galleries have been removed, in this case, with excellent results, as the design is quite independent of them. A similar screen runs across the west end, with the exception that the frieze and entablature is cut away in the centre to allow room for the organ-case.

The conception of this interior is very noble and solemn, but the omission of the architrave of the main order, and the design of the capitals, detracts from its repose. Worst of all, in addition to its original faults, the pedestals of the columns were chamfered, at the time the church was repewed and restored—a time when every effort was made to obliterate all traces of the XVIIIth century.

REFUGE ASSURANCE COMPANY, MANCHESTER.

THE buildings of which we publish an illustration are an extension of the chief office of the Refuge Assurance Company, in Oxford-street, Manchester. The original portion of this office was erected some years ago from the designs of the late Mr. Alfred Waterhouse, R.A., and the extension now in course of construction includes the clock tower and all the buildings which in the illustration come in advance of this tower, including the lower tower with the domical top. Mr. Paul Waterhouse, the architect of the present works, when called upon to design these extensions, decided to treat the original block as a wing of the larger construction. He, therefore, placed the clock tower (220 ft. high) as the centre of the composition, and has made the remainder of the Oxford-street frontage balance (more or less) his father's earlier design. The frontage is the west side of the building; our illustration shows the southern aspect, in composing which it has been the designer's object to put together such an *ensemble* as would not be swamped in effect by the railway bridge. This end of the building is visible for a considerable distance along Oxford-street, which is one of the main thoroughfares of the city.

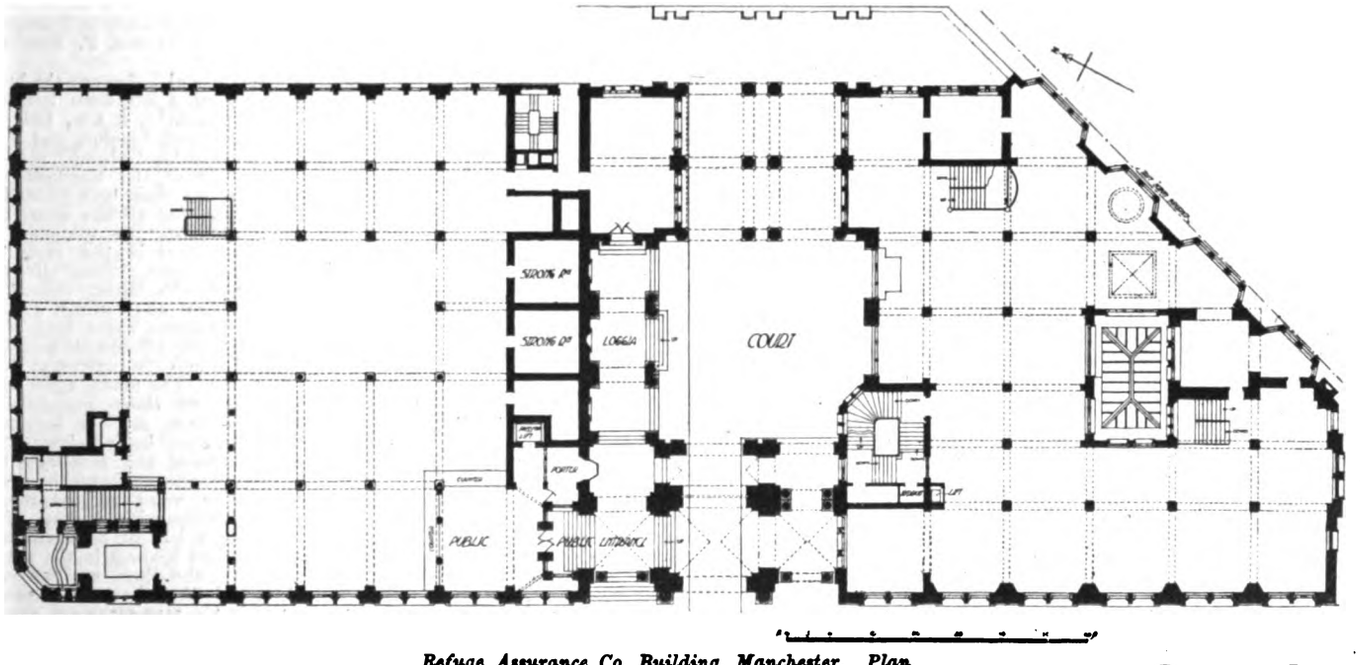
The building is now well advanced, being in some parts up to the roof level. The general contractors are Messrs. William Brown & Sons, of Salford, and the clerk of works Mr. W. Robson.

The great archway under the tower is of Dalbeattie granite from Messrs. Newell; and the terra-cotta for the exterior is being supplied by Messrs. Doulton, Mr. J. C. Edwards, and Mr. A. Whitehead.

SOME BUILDINGS IN MONTREAL.

WE give illustrations, from photographs supplied to us, of some examples of recent architecture in Montreal.

Only one of these however is by a Canadian architect, the "Church of the Messiah" (a Unitarian Church, oddly enough, in consideration of its title), by Messrs. E. & W. S. Maxwell. It is built of Indiana limestone, but all the tracery had to be



Refuge Assurance Co. Building, Manchester. Plan.

Digitized by Google

carried out in hard wood, as frost and ice render stone tracery impossible in Montreal. The west window of the church has recently been filled with stained glass by the Bromsgrove Guild.

The Mount Royal Club, of which the façade is shown, and the Bank of Montreal, of which we give the façade and the interior view, are both designed by the well-known American architects, Messrs. McKim, Mead, & White. Both of them illustrate the tendency of American architects at present to apply classic architecture to business buildings.

WATERLOW COURT, HAMPSTEAD.

WATERLOW COURT at Golder's Green consists of fifty flats for "working ladies." Each flat contains a sitting-room, bedroom, bathroom, water-closet, and scullery with gas-stove and sink. In some of the flats the bedroom is arranged as a recess which can be curtained off from the sitting-room, and in others two bedrooms are provided.

The building, which encloses a central court, is approached by a covered way with open timber roof; which, in connexion with the cloister surrounding the court, gives sheltered access to the whole building.

In the centre of the south side of the building is the large dining-hall, panelled and floored in oak. Over this is the kitchen, the accommodation for the servants, and the flat occupied by the manageress. Adjoining the dining-hall is the common room.

One of the flats has been furnished under the direction of the architect. The furniture for this flat as well as that for the dining-hall, has been made by Mr. J. P. White, of the Pyghtle Works, Bedford, from the architect's designs. The chairs were obtained from Messrs. Heal & Son, Tottenham court-road, and the ornaments for the furnished flat were supplied by Mr. Staal, Brownlow-street, Holborn. The water for the baths is heated by the "Victor" gas-boiler, supplied by Messrs. Potterton, who also supplied the kitchen range. The electric light installation was carried out by Messrs. Tamplin & Makovski.

The building was erected by Messrs. W. H. Maxey & Son, builders, of Sleaford, Lincs., for the Industrial Dwellings Company. The architect was Mr. Baillie Scott.

MEROPOLITAN WATER BOARD.

AT the fortnightly sitting of the Metropolitan Water Board last Friday the following matters were dealt with:—

The Finance Bill.—It was decided that the Law and Parliamentary Committee be authorised to take such steps as may be necessary with the view of obtaining amendments of the Finance Bill to (*a*) clearly define the position of the Board as a rating authority, and (*b*) bring such lands of the Board as are actually being utilised or in future will be utilised for the purposes of their undertaking within the exemption contained in clause 25 of the Bill.

Beachcroft Reservoir, Honor Oak.—An estimate of 5,500*l.* was submitted by the Works Committee for the carrying out of the necessary works for the connexion of the lower portion of the Beachcroft Reservoir at Honor Oak with the system of low-pressure mains in Ryelane, Peckham.—Postponed.

Diversion of Mains and Other Works.—Expenditure to the amount of 875*l.* was authorised for the diversion of the Board's mains at Willesden, of 135*l.* for repairs at Hertford, and of 490*l.* for lowering the main in Upper Richmond-road.

BOOKS RECEIVED.

TOWN PLANNING, PAST, PRESENT, AND POSSIBLE. By H. Inigo Triggs, A.R.I.B.A. (Methuen & Co. 15s.)

THE ARCHITECT'S AND SURVEYOR'S DIRECTORY AND REFERENDUM. Edited by Albert C. Freeman, M.S.A. (Jas. Truscott & Son, Ltd. 15s.)

A RESTORATION OF THE MAUSOLEUM AT HALICARNASSUS. By the late J. J. Stevenson, F.S.A. (B. T. Batsford. 2s. 6d.)

TOWN PLANNING AND MODERN ARCHITECTURE AT THE HAMPSTEAD GARDEN SUBURB. (T. Fisher Unwin. 1s.)

Competition News.

BERKSHIRE COUNTY OFFICES.

We understand that the date for sending in drawings for this competition has been extended to July 31.

Obituary.

MR. J. LAVERTY.

The death is announced, at the age of 53, of Mr. John Laverty, builder, head of the firm of John Laverty & Sons, Ltd., builders and contractors, Belfast. The firm was founded in 1865 at Carrickfergus by the late Mr. Henry Laverty. In 1888 it moved to Belfast, and in 1891 it was turned into a private limited liability company. The firm, among other fine public buildings in Belfast, erected the following:— The Belfast Cathedral, the Carlisle Memorial Schools, the Cooke Centenary Church, the Ballysillan Presbyterian Church, the Campbell College, the Dominican Convent, Falls-road; the Roman Catholic Chapel, Lisburn; and the Northern Bank, Donegall-square West. The firm has also done a large amount of work under the Royal Engineers at Palace Barracks, Holywood; Ebrington Barracks, Londonderry; Lough and Reane Barracks and Beresford Barracks, Curragh Camp, etc.

General Building News.

CHURCH IMPROVEMENTS, DONAGHADEE.

The Methodists of Donaghadee have had various improvements and additions effected at their church. The work has been carried out by Messrs. Thornbury Brothers from the plans of Mr. J. St. John Phillips, architect, of Belfast. The cost of carrying out the scheme has been about 1,800*l.* The heating apparatus was overhauled by Messrs. Musgrave & Co.

METHODIST CHURCH, DUNSTABLE.

A new church is being built by Messrs. Webster & Cannon, of Aylesbury, from the design of Messrs. Withers & Meredith, for the Methodists of this town. The total cost of the work will be about 12,000*l.*

ENGLISH BAPTIST CHAPEL, MANSELTON, SWANSEA.

An English Baptist chapel is being built at Manselton. The new building will be built of local stone, with blue Pennant stone facing and Bath stone dressings. In the chapel there will be seating accommodation for 650, and in the school for 300, with a number of classrooms and a church parlour. The total cost will be about 3,000*l.* The builders are Messrs. Turner & Sons, Cardiff, who are carrying out the work under the superintendence of the architect, Mr. W. Beddoe Rees, Cardiff.

NEW CHURCH, CANTON, CARDIFF.

A new church is being built to replace the old iron church of St. Luke's, Canton, Cardiff. The plans of the church, which will be of stone, provide seating accommodation for 706 worshippers, and the work is estimated to cost 3,000*l.* The architect is Mr. G. E. Halliday, Cardiff, and the builders are Messrs. Symonds & Sons, also of Cardiff.

ST. GILES' CHURCH, LEIGH-ON-MENDIP.

This church has been closed since the beginning of May in consequence of having to undergo extensive repairs, and in some respects renovation. The work is being carried on by Messrs. J. & U. Wilcox, builders, of Leigh-on-Mendip, under the supervision of Messrs. Whitaker & Hole, architects, of Paulton.

ROMAN CATHOLIC CHURCH, GLANCULLEN.

St. Patrick's Church, Glancullen, has now been opened. The church, which is situated in the Dublin Mountains, about six miles from Dundrum, is a stone building faced with granite from the Glancullen quarries. It was designed by Messrs. W. H. Byrne & Sons, architects, and erected by Messrs. Bolger & Doyle, builders, Dublin.

HOSPITAL EXTENSION, CHELMSFORD.

The opening has taken place of new buildings at the Chelmsford and Essex Hospital and Dispensary. The extensions include two new wards on the west side of the old main building, containing twelve and fourteen beds respectively, together with sanitary annexe. On the east side are the new sanitary departments and ward kitchens. At the rear are the new out-patients' departments, casualty ward, and waiting-rooms on the ground floor, and on the floor above two isolation wards and nurses' rooms. A new X-rays-room has been built. The work has been carried out under the direction of Mr. W. H. Pertwee, architect, of Chelmsford, in conjunction with Messrs. Young & Hall, and the builder was Mr. J. Gowers, of Chelmsford.

COUNCIL OFFICES AND FIRE-STATION, RISHTON.

New offices and a fire-station have been erected by the Rishton District Council. The buildings are of brick with stone facings, and the contractors were Messrs. Whittaker & Sons, of Blackburn, the sub-contractors being:— Messrs. T. Higson, Blackburn, joiners; Mr. R. T. Kenyon, Rishton, plumber; Mr. E. Welch, Accrington, slater; Mr. C. Dixon, Blackburn, painter; Mr. E. Godley, Rishton, plasterer; Messrs. Craven Dunvill & Co., Shropshire, tilers; Messrs. Bridge, Accrington, ironwork and stable fittings; Messrs. Young & Co., London, floor tiling in stables and fire-station. The work has been executed to the plans and specifications of the District Council's Surveyor, Mr. J. Cornall.

BANK PREMISES, LINCOLN.

The new buildings abutting on the north-east side of High Bridge, Lincoln, have been taken by the London City and Midland Bank. The premises were erected by Messrs. H. S. & W. Close, but the bank facilities required the lower story being specially constructed later. The contractors for the Banking Company have been Messrs. Wm. Nicholson & Son, Leeds, who have altered the fabric and done the whole of the internal fittings. The electric wiring has been carried out by Messrs. W. Gregory & Son, and the architects have been Messrs. Scorer & Gamble, of Lincoln.

PAVILION, AYR.

A new pavilion, primarily intended to be used as a skating-rink, has been built at Boswell Park, Ayr, at a cost of 4,000*l.* The architect was Mr. J. Campbell Reid, Glasgow.

PUBLIC LIBRARIES, BOLTON.

Tenders are to be invited for the erection of branch libraries at Astley Bridge, Great Lever, and Halliwell. Messrs. Bradshaw & Gass are preparing working drawings and specifications for the first two, and Messrs. Henderson & Brown specifications for the last.

SANATORIUM FOR CHILDREN, HARPENDEN, HERTS.

Recently the Committee of the National Children's Home and Orphanage acquired from the Trustees of the late Sir J. Blundell Maple an estate of more than 200 acres at Cootar's End, Harpenden, and now work has been begun on the erection of a sanatorium for delicate children. The total cost of the scheme is about 10,000 guineas. The architects are Messrs. Holman & Goodham, and the builders, Messrs. Phillips & Blake, of Harpenden.

NEW MILL, ELLESMERE.

Messrs. Frost & Sons, of Chester, are to erect a new mill at the Shropshire Union quayside, Ellesmere. The mill is to be 510 ft. long and 100 ft. wide, and will embrace a permanent workshop 50 ft. by 30 ft., screen-room, and engine-house, which will contain two large Lancashire boilers of about 500-h.p. Plans have been prepared by Mr. John Clark, architect, of Liverpool, and Messrs. Brown & Sons, of Salford, will be the builders.

TRADE NEWS.

Messrs. Thos. J. Hawkins & Co. are carrying out constructional alterations at a considerable cost at the Hammersmith Palace of Varieties, under the supervision of Messrs. F. Matcham & Co., architects.

At the Manchester Royal Infirmary the heating and hot-water supply has been installed by Messrs. Dargue, Griffiths, & Co., Ltd., of Manchester, Liverpool, and London, and is on their "D. G. Economic Centralised" system, with which the whole of the institution is warmed, the engineering plant being installed at one point, so that it is always under the immediate supervision of the engineer in charge. With it water is heated in multitubular heaters by steam, either live or exhaust, the whole of the latter, instead of blowing to atmosphere and being wasted, being re-used, the condense water both of it and the live steam being afterwards returned at a high temperature into the boilers, so there is practically no waste. The plant, apart from the boilers, consists of three multitubular heaters, one for heating, one for hot-water supply, and one as a stand-by for either, with a pump to each to assist and accelerate the circulation of the water throughout the whole of the building. The water is sent round, returning to the multitubular heaters after doing its work with a loss of approximately only 20 to 30 deg. The heating in the wards, etc., is by radiators, and these are generally of the hinged type, so that they can be swung out into the wards for easy cleaning, also to allow fresh-air inlets behind them to be readily cleaned. The whole installation is so arranged that any circuit or radiator can be regulated

Digitized by Google

or shut off without interfering with the working of the balance.

The new Cottage Hospital, Tullow, is being warmed and ventilated by means of Shorland's patent Manchester grates, supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Messrs. Sankey & Son (Essex Wharf, Canning Town) write to say that it was their firm, and not "Messrs. Sankey & Co.," who supplied the Cranham bricks used in the Victoria and Albert Museum. The mistake was not ours; we gave the list of names as furnished to us from the architect's office.

Messrs. J. B. Joyce & Co. (Whitchurch, Salop) have just fixed two large quarter clocks, one at St. Andrew's Church, Droitwich, and the other at St. Nicholas Church, Worcester, both fitted with the best and most modern improvements. The same firm are now completing the fixing of the great clock at Birmingham University, which was opened on the 7th inst. The dials of this clock are 17½ ft. in diameter, and the five bells weigh about 10 tons. The firm are also making a large clock for Afghanistan with four dials, each 8 ft. diameter.

The Ham Hill and Doulting Stone Company have supplied the stone for a new house at Sunningdale, in which large loggia on the south front is carried out with columns and entablature of Ham Hill stone. Mr. H. T. Chalcraft is the architect.

Stained Glass & Decoration.

WELSH CALVINISTIC CHURCH, CLAPHAM JUNCTION.

An arched single-light window, designed by Mr. T. F. Curtis, of Soho, with figures symbolical of "Praise" and two mourning angels, has been unveiled in this church, as a memorial to the late Miss Mair Lloyd-George.

ST. PETER'S, EATON-SQUARE, S.W.

A cenotaph, designed by Professor Lethaby, with an effigy sculptured out of Penteliçon marble by Mr. Stirling Lee, has been placed in a shallow recess in the south transept wall of the church, in memory of the late Dr. Wilkinson, Bishop of St. Andrews, and Primus of the Scottish Episcopal Church.

Appointment.

Mr. James Cramer, of Manchester, has been appointed Quantity Surveyor for the Salford Town Hall extension and alterations.

Sanitary and Engineering News.

SUTTON INTERCEPTING SEWER, ST. HELENS.

The successful contractor for this work is Mr. J. H. Macdonald, of Victoria-street, Westminster, S.W. Mr. Geo. J. C. Broom is the Borough Engineer, Town Hall, St. Helens.

ROYAL SANITARY INSTITUTE.

At an examination in sanitary science as applied to buildings and public works, held at Birmingham on July 2 and 3, 1909, six candidates presented themselves, and the following two candidates were granted certificates:—H. R. Hicklin (Tamworth); R. Purdy (Sparkhill).

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Messrs. McCormick & Sons, builders and contractors (Northampton-street, Essex-road, N.), have decided to convert the business heretofore carried on in the name of McCormick & Sons into a private limited liability company as from June 30, 1909, under the title of McCormick & Sons, Ltd. As senior director Mr. W. A. McCormick will continue to direct the policy of the company, with the assistance of his sons, Joseph Edward McCormick and William Arthur McCormick, who will become directors of the new company.

SPARK IGNITION FOR GAS BURNERS.

Many devices have been invented for lighting incandescent gas burners from a distance by means of an electric spark, but most of them have been found faulty when used daily under ordinary conditions for a long period. A system of spark ignition has, however, recently been introduced by the Herbert Tuchman Manufacturing Company, which may prove more successful. The apparatus employed consists of a battery, transformer, trembler, and spark leads. The transformer is separated from the trembler, so that a low-tension current can be used for the main leads, and ordinary bell wire can be used in place of insulated cable. By means of switches one gas burner or any number of burners can be instantaneously lighted from a distance, in the same way that electric lamps are switched on. The spark produced by the transformer is of the same strength as that used for firing the explosive mixture in gas engines.

NATIONAL GALLERIES.

In their fifty-second annual report the trustees of the National Portrait Gallery announce that of the total, 1734, exhibited portraits, the acquisitions by donation, loan, or bequest number 817. The number of visitors in the twelve months was 164,981, including 10,669 admitted upon payment of 6d. The trustees express their hope that the extension site at the rear will be so dealt with as to enable them to simplify some complications in the structural interior of the gallery which now occasion some unnecessary expense and trouble. To the National Gallery have just been added Hogarth's "A Scene from the Beggar's Opera," bought with the Temple West bequest, and Pierre E. T. Rousseau's "A River Scene," presented by Mr. H. Velten. Rooms XII.-XIV. and XVI.-XVII. in the east wing and the corresponding Turner water-colour rooms on the ground floor are closed for structural alteration, with a view to their protection from fire.

PARISH CHURCH, ILMINSTER.

This fine cruciform church, famed for its central pinnacled tower, has just been re-opened after reparation by Mr. Carôe. Standing in a now sparsely populated parish, it was built in the XVth century by the monks of the Benedictine Abbey of SS. Peter and Paul, Muchelney, and contains the tomb of Dorothy, who, with her husband Nicholas, Wadham, founded Wadham College, Oxford, in 1611-3.

THE HAPPER JAPANESE PRINTS.

The five days' sale by Messrs. Sotheby of the second and final portion of Mr. John Stewart Happer's collection realised 1,865*l.* 13s. The lots comprised Toyohuni's memorial portrait (1858) of Hiroshige, 10*l.* (Yamanaka); the rare triptych of that artist's "Forty-seven Ronins Crossing the Bridge," 27*l.* (Hutchinson), with his series of fifty-five plates known as the "Tokaido set"; his Saru or Monkey Bridge in the Kiso Mountains by moonlight, a kakemonoye, 92*l.* (Mrs. Hawkins); a copy of the original edition of his "Hundred Views of Yedo"—a unique set—27*l.* (Grange); and his very rare print, "Evening Rain," in the Hakkei series, 26*l.* (Shepherd). The aggregate 934 lots have thus been sold for 7,879*l.* 7s. Twenty years ago many of these colour prints could be bought for a few shillings apiece in London and Paris.

THE BRITISH ACADEMY.

At the seventh annual meeting, held on July 1, it was announced that progress is made with the survey of St. Augustine's Abbey, Canterbury, which will be the first of the economic and social works to be edited and issued by the Academy, and that the next Historical Science Congress will be held in London in 1913. Professor Bosanquet, Dr. Hogarth, and Lord Curzon were newly elected to the Council, and Mr. S. H. Butcher, M.P., was elected to succeed Sir E. Maunde Thompson as President.

TEMPERATURE IN FACTORIES.

Reporting on temperature in factories and workshops, Mr. H. M. Robinson, Deputy Chief Inspector to the Home Office, says that many records of temperature were taken during 1908 in all classes of factories and workshops, and the results show that, while cases of excessively hot workrooms were often met with, those in which the temperature was unreasonably low were more common. Factories and workshops were found in which there were no means whatever of heating the rooms, while in others the means provided were either insufficient or defective. Mr. Shuter, writing of the Pottery district, points out that in some of the processes a somewhat higher temperature is required, but that this is often much higher than is necessary, owing to carelessness or defective arrangements. Experience is proving that moist clay ware can be more cheaply and better dried by exposure to a current of warm air than by placing it in a hot stove. Miss Anderson contrasts the improvements effected in the artificial lighting of workrooms with the slow progress made in heating them satisfactorily, and adds that where ordinary gas burners are used for the former purpose they are often relied upon for warmth as well. The great variety of gas and oil stoves on the market afford a simple means of heating, but unless provided with a flue they tend to vitiate the atmosphere, and cause headaches and other ill effects to workers. In a book-binding factory in the south-western division women were found working in a temperature of 43 deg., and on proceedings being taken the magistrate described the case as one of absolute cruelty. In a large factory in Ireland, where several hundreds of women and girls were found employed in a sedentary occupation, with the thermometer standing at 46 deg., a prosecution was also instituted, but the Bench dismissed the case.

IMPROVEMENTS IN THE PLANNING OF PARIS.

M. Eugène Hénard, who is so keenly interested in improving the plan of Paris, is bringing out a series of articles in *L'Architecture* on possible improvements for the town. In his article on public squares (*places*) he draws instructive comparisons between ancient and modern open spaces. The beauty of a town finds its highest and most characteristic expression in its squares. Certain names conjure up certain pictures. Florence is inseparable from the Piazza della Signoria, Venice from the Piazzetta, Paris from the Place de la Concorde, etc. In ancient days the buildings surrounding a square were monumental, and the square itself was a spot specially reserved for a purpose—the market square for commercial intercourse, the cathedral square for religious ceremonies, the castle or municipal square for political or administrative meetings, where the public crier made his announcements. Now the market is held in a building, religious ceremonies are confined to the interior of churches, and newspapers and advertisements have superseded the public crier. Public places can still, however, be classed under three heads: those provided for facilitating traffic, for spectacular displays, and for transhipment. They are woefully small, however, compared with those of the XVIIth and XVIIIth centuries. Louis XIV.'s Place Vendome measures 17,000 sq. metres, and Louis XV.'s Place de la Concorde 75,000, as against the Place de l'Opéra, measuring only 6,000 sq. metres, and the Place de la République, 36,000 sq. metres, and this in spite of the fact that the last two were built to facilitate traffic. The Place de l'Opéra is perhaps the most striking example of meanness in planning an open space. This square should have been one of the largest in Paris, for seven immense thoroughfares converge on it. As if the congestion of vehicular traffic were not already sufficient, three lines of underground railroads add their toll of passengers, who emerge at the centre of the square to swell the numbers of pedestrians. Before building the two islands of refuge the possible points of intersection for carriages numbered over 200. These points have now been reduced to eighty-eight, but the crossing of the square is notwithstanding a perilous undertaking. The solution M. Hénard suggests is doubling the narrow axis, which would give an oval place 136 by 120 metres. Not only would this suppress the intersecting points of traffic, but the æsthetic gain would be immeasurable, for one would then be able to get far enough away to appreciate as a whole the effect of Garnier's Opera House, the finest artistic effort of the Second Empire.

Patents.

APPLICATIONS PUBLISHED.*

12,043 of 1908.—Bertie Willoughby Hapgood: Locks and latches for sliding gates and the like.

12,494 of 1908.—William Henry Finfrock: Aluminium solder.

12,626 of 1908.—Robert William Newcombe: Wall coverings in imitation of real tapestry.

12,670 of 1908.—Alfred William Bennis: Improvements in that class of conveyors called tray conveyors.

17,313 of 1908.—John George Brooker and Leonard John Brooker: Lock bolts for doors, windows, and the like.

20,224 of 1908.—Frederick George Edwards and George Richard Leadsom: Tile wall coverings or facings.

22,152 of 1908.—Richard William Patey: Means for overflow and waste in lavatory and like basins.

26,126 of 1908.—Henry William Schlueter: Interlocking construction for docks, piers, building foundations, and the like.

26,821 of 1908.—Walter William Chitty Vinall and Walter Ferrier: Vices.

28,218 of 1908.—Colin McCallum and William Reid Gilmour: Locks.

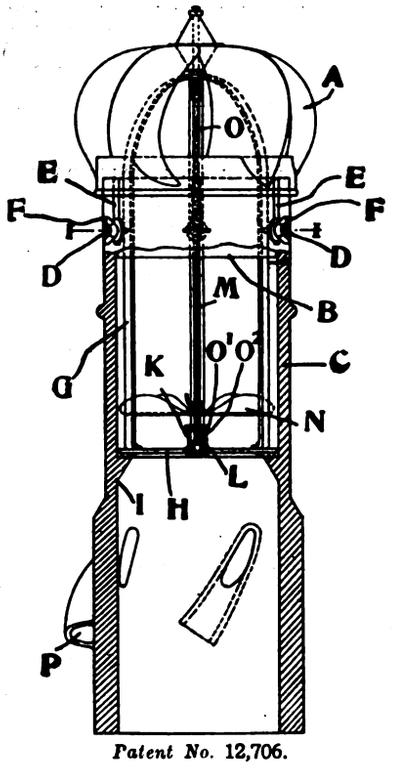
28,262 of 1908.—Edmond Felix Maitrugue: An improved spanner.

3,139 of 1909.—Charles Arthur Allison (Ceramic Machinery Company): Machine for coating tiles and the like

4,777 of 1909.—William Edmund Parkes and James Harry Parkes: Locks and latches.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google



Patent No. 12,706.

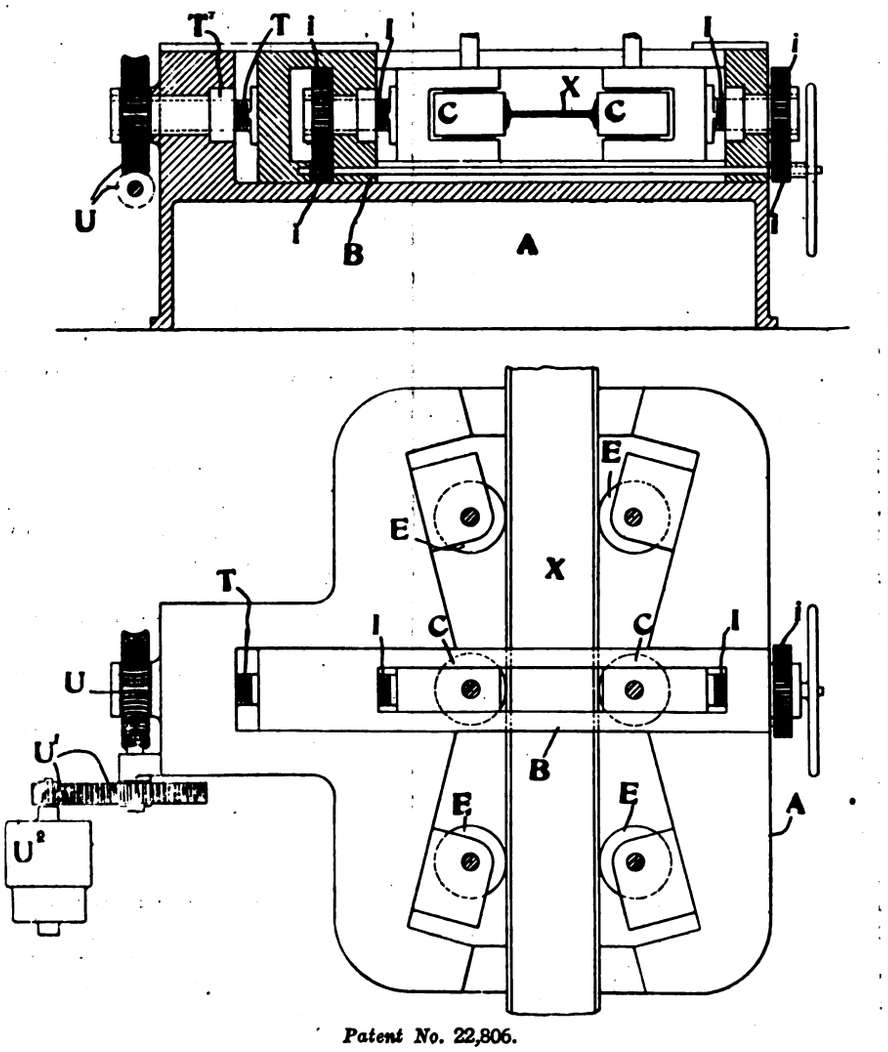
5,304 of 1909.—Armand Gabriel Considère: Assembling or uniting reinforced concrete piles and stays.

5,612 of 1909.—James Pascoe, Frederick James Pascoe, and Thomas Perry Hook: Means for securing sash lines.

SELECTED PATENTS.

12,706 of 1908.—A. Reid, G. Reid, and A. Reid: Chimney and ventilating shaft tops. This relates to chimney cans or cowls of the kind having a rotating cap driven by the wind and provided with a spindle which operates an updraught fan and also conveys lubricant to a bearing which supports the fan spindle at its bottom end and which is secured to a stationary casing or frame surrounding said spindle and removably fitted within the chimney top or uptake. The rotating cap A is carried by a cylindrical extension B, which is adapted to fit within the chimney can C, and is fitted with bolts D or the like which engage in slots E in the can, these bolts D being provided with wing nut F to hold the cap A in the can. By this extension B is carried a depending open frame G, having at its lower end a ring H resting on a ledge I in the chimney can C. This ring H has radial arms J and a central boss K, which carries a race for ball bearings L, in which runs the bottom of a tubular spindle M connected to the cap A, and carrying the fan or propeller N, the said spindle M serving to hold and convey lubricant to the bearings, which lubricant may enter the hollow spindle through an orifice O, and may issue by an orifice or orifices at O^1 into a chamber O^2. Air is admitted to the chimney by inlets P.

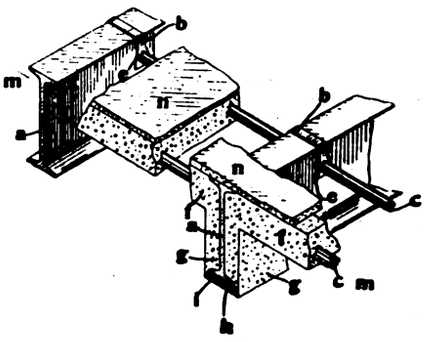
22,806 of 1908.—A. Ferguson: Machine for straightening and cambering beams or girders. This relates to machines for straightening and cambering H-beams or girders or other sections of iron or steel as described in Patent No. 13,609 of 1908. The straightening machine comprises a suitable framing or casing, on which are arranged six rollers, *i.e.*, two pairs of outside rollers, and a pair of central rollers. The rollers are each carried on a revolving spindle, and are rotated by suitable gearing, driven by means of an electric motor or other power. The central rollers, which are carried in an adjustable slide, are adjustable relatively to one another within the slide. Mounted on the frame A is a slide B, which carries a pair of central rollers C C, adapted to camber or straighten the beam X in conjunction with the outside pairs of rollers E E. The said slide B is adjustable transversely by means of a screw-threaded shaft T engaging with a rotatable sleeve T^1 actuated by worm gearing U and spur gearing U^1 driven from the shaft of an electric motor U^2, or in any other convenient way. The adjustment of the rollers C towards each other may be effected by a screw-threaded shaft I, operated through spur gearing *i* by a hand wheel or in any other convenient way.



Patent No. 22,806.

The beam is fed in one direction and set off the straight, but if the beam is to be straightened the slide is adjusted and the beam is then fed through the machine in the opposite direction.

22,959 of 1908.—C. A. Jenson: Reinforced concrete floors and like structure. This relates to a reinforced concrete floor or structure of the kind, comprising girders, beams, or joists having stirrups resting thereon, and bars intermediate thereof and supported in slots in the stirrups. The joists *a* are provided with a number of stirrups *b*, the arms of which are of such a length as to nearly reach the bottom of the floor intermediate of the said joists. Each end of a stirrup is perforated or slotted with holes of such a shape as to form at the bottom flat resting places for the bottoms of the transverse or horizontal flanges of the bars *c*, and recesses for the central bottom vertical member



Patent No. 22,959.

or rib of the bar and the said slots are further fashioned as to leave more or less triangular spaces *e* on each side of the upper vertical member or web of the bar, the upper end of which is adapted to fit easily in the apex of the slot, the purpose of the space being to afford a better key for the concrete. The bars are preferably placed below the line *m m* of neutral axis of the floor, and are made of such a shape in cross section that the lateral horizontal flanges or members are nearer to the bottom of the vertical member than to the top of the latter, so that the side flanges lie directly in the line of tensile stress; also the sectional area of the bar is increased or enlarged where the horizontal or lateral members intersect or merge into the vertical members. The stirrups *b* are gradually made narrower above the slots *e*, the sectional area at this place being about equal to the combined sectional areas of the metal on each side of the slot *e*; this permits a great saving of metal, and lessens the weight of the floor without in any way lessening the strength of the stirrup, for it is found that the strength of the stirrup depends upon the thickness of metal on each side of the slot *e*. The spaces in between the upper parts of the girders *a* are filled in with concrete *f*, which is temporarily supported by centering, or a number of boards fixed below and retained there until the concrete has set in the usual manner. The bottom flanges of the girders project to a considerable distance below the bottom of the floor proper, and the lower parts of the said girders are cased in with centering so as, when filled with concrete marked *g*, to form reinforced concrete joists projecting below the underside of the floor. The lower flanges of the girders may be suitably protected by a tile or slab of concrete *h* of the kind having a groove or air space *i*.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 9.—By C. R. MORRIS, SONS, & PEARD (at Bridgwater).

Sutton Mallet, Somerset.—Sutton Mallet Estate, 640 acres, f. (including timber) £22,136

June 23.—By SALTER, SIMPSON, & SONS (at Bury St. Edmunds).

Wattisfield, Suffolk.—Hillgreen Farm, 63 a. 1 r. 38 p., f. 950

By WILKINSON, SON, & WELCH (at Brighton).

Brighton.—22, Old Steyne, f., y.r. 175*l*. 2,450

June 24.—By CECIL HOBDAY (at Putney).

Putney.—10, Larpent-av., u.t. 95 yrs., g.r. 13*l*. 10*s*., y.r. 75*l*. 950

Wandsworth.—26 to 40 (even), Clonmore-st., u.t. 99 yrs., g.r. 38*l*. 10*s*., gross rental 233*l*. 1,750

By FLICK & SON (at Saxmundham).

Peasenhall, Suffolk.—The Vale Farm, 69 a. 0 r. 36 p., f. 1,400

By STEPHENSON & ALEXANDER (at Cardiff).

Llanbleddian, Glamorgan.—Broadway Cottage and garden, f. 205

St. Hilary, Glamorgan.—Freehold meadow land, 56 a. 0 r. 32 p. 2,825

RECENT SALES.—*Continued on page 54.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

JULY 17.—**Buralem.**—COMPETITIVE PLANS—EXTENSION OF TIME.—The Corporation invite competitive plans for new public buildings, which will be placed before an assessor to be appointed by the Corporation. Subject to the conditions of competition, the architect whose design is considered by the assessor to be the best will be appointed to carry out the work, and the respective architects whose designs the assessor decides to be second and third in order of merit will be awarded premiums of 100*l.* and 50*l.* respectively. All designs must be sent in before July 17 next. Conditions of competition, etc., can be obtained from Mr. Bettany, Borough Surveyor, on payment of 2*l.* 2s.

JULY 30.—**Grimsby.**—The Corporation invite designs for the extension of existing Town Hall. Premiums of 250*l.*, 150*l.*, and 100*l.* Conditions from Mr H. Gilbert Whyatt, Borough Engineer, Town Hall, Grimsby. Full particulars only on receipt of a deposit of 2*l.* (Cheques to be made out to Mr. Frank Stephenson, Borough Treasurer.) See advertisement in our issue of April 24 for further particulars.

JULY 31. — **Glasgow.** — LAYING-OUT LAND.—**The Patrons of the Royal Incorporation of Hutchesons' Hospital in the City of Glasgow invite competitive designs for laying-out for feuing and building their lands of Thornliebank, in the Parish of Eastwood and County of Renfrew, near the City of Glasgow. The terms and conditions of the competition, and, upon deposit of 3*l.* 3s., skeleton plans showing the situation and boundaries of the different portions of the lands, may be had from the Chamberlains of the Hospital, Messrs. Hill & Hoggan, 194, Ingram-street, Glasgow, with whom designs must be lodged not later than July 31, 1909. Premiums of 100*l.*, 75*l.*, 50*l.*, and 25*l.* respectively will be awarded.**

JULY 31. — **Reading.** — OFFICES.—The Berkshire C.C. invite competitive designs for proposed new offices, committee-room, etc., at the Forbury, Reading. Premiums of 100*l.*, 75*l.*, and 50*l.* Particulars from Mr. J. Fred. Hawkins, County Surveyor, Bank-chambers, Cross-street, Reading. Deposit of 1*l.* 1s. For further particulars see advertisement in our issue of April 17.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50 25, and 10 guineas Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

* SEPTEMBER 20. — **Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

JULY 10-24.—**Almondsbury, Pilning Council School.**—ALTERATIONS.—The Gloucestershire Education Committee invite tenders for carrying out alterations and additions to Pilning Council School. Bills of quantities can be obtained from Mr. R. S. Phillips, architect, Gloucester, Midland Bank-chambers, Gloucester, upon depositing 2*l.* 2s.

JULY 10.—**Kirkby-in-Ashfield.**—CHAPEL, ETC.—New Wesleyan Chapel and School, to be erected at Kirkby-in-Ashfield, Notts. Names to the architect, Mr J. E. Goodacre, Alexandra-avenue, Mansfield.

JULY 12. — **Blackburn.** — RECONSTRUCTION OF PRIVIES.—The Health Committee invite tenders for the reconstruction of about fifty privies and cesspools to water-closets. Specification, etc., may be obtained at offices of Mr. Wm. Stubbs, M.Inst.C.E., Borough and Water Engineer, Municipal Offices, Blackburn.

JULY 12.—**Bradford.**—DAIRY.—Works (painters excepted) required in the erection of a dairy in Usher-street, Wakefield-road, for the City of Bradford Co-operative Society, Ltd. Plans, etc., at office of Mr. William Rycroft, architect, Bank-buildings, Manchester-road, Bradford.

JULY 12.—**Bubwith.**—TOWER REPAIRS.—Repairs to the tower of the Parish Church of Bubwith. Plans and specification on application at the Vicarage. Quantities are not supplied.

JULY 12.—**Derby.**—ERECTION OF COTTAGES, NOTTINGHAM-ROAD.—The Corporation invite tenders from local builders for the erection and completion of two cottages on the Nottingham-road. Plans may be seen, and specification, etc., obtained, on application at the office of Mr. John Ward, M.Inst.C.E., Borough Surveyor, Borough Surveyor's office, Babington-lane, Derby, upon the deposit of 1*l.* 1s.

JULY 12.—**East and West Rudham.**—ALTERATIONS, ETC., TO SCHOOLS.—Alterations and additions to East and West Rudham Schools, Norfolk. Plans, etc., can be seen, and quantities and all particulars obtained, upon application to the office of Mr. Louis F. Eagleton, architect and surveyor, King-street, King's Lynn.

JULY 12.—**Foohabers.**—VILLA.—Mason, carpenter, slater, plasterer, plumber, and painter works of a villa to be erected in Keith-road, Fochabers. Plans, etc., may be seen in Fochabers with Mr. James Gray, cabinetmaker.

JULY 12.—**Risca.**—GRAND STAND.—Bedwellty Agricultural Society invite tenders for the erection of a grand stand to accommodate 1,500 persons. Mr. T. Davies, Local Secretary, Risca, Mon.

JULY 12. — **Tipton.** — EJECTOR CHAMBERS. — Tipton U.D.C. invite tenders for the construction of ejector chambers in connexion with the scheme for sewering the district. Drawings, etc., may be inspected during office hours on application to Mr. W. H. Jukes, the Surveyor to the Council, Public Offices, Owen-street, Tipton.

JULY 12. — **Towcester, Northamptonshire.** — SCHOOL WORKS, INFANTS' DEPARTMENT.—The Managers of the Church of England Schools invite tenders for alterations and additions at the Towcester Infants' School, in accordance with drawings, etc., prepared by the architect, Mr. J. T. Blackwell, 53, High-street, Kettering.

JULY 12. — **Wroughton.**—SCHOOL WORKS.—Tenders are invited for works at the two Council Schools. Specifications can be seen at Mr. H. Copleston's, Swindon-road, Wroughton.

JULY 13. — **Heavitree.** — HOSPITAL ADDITIONS.—Heavitree U.D.C. invite tenders for proposed additions to the Isolation Hospital. Plans, etc., may be seen, and bills of quantities obtained, at the offices of the Council, 13, Church-street, Heavitree, on payment of 1*l.* 1s.

JULY 13-29. — **Winterbourne.** — SCHOOL. — The Gloucestershire Education Committee invite tenders for the erection of a new Elementary School at Winterbourne. Bills of quantities can be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester, upon depositing 2*l.* 2s.

JULY 14.—**Ashford Police-station.**—ALTERATIONS.—Alterations to the single constables' quarters at this station, ordered by the Standing Joint Committee. Plan, etc., at the office of the County Architect, 86, Week-street, Maidstone.

JULY 14. — **Hendon.** — REMOVING CHAPEL. — The Guardians invite tenders for removing the chapel (a corrugated-iron building) at their Union Workhouse, near Edgware, to a new site some yards away, in accordance with the specification, which can be seen at office of Mr. F. J. Seabrook, Clerk to the Guardians, Union Offices, Edgware, Middlesex.

JULY 14. — **Monmouth.** — DRILL HALL REPAIRS.—Monmouthshire Territorial Force Association invite tenders for repairs to the Drill Hall. Full details and specifications will be supplied on application to H. Acheson Moore (Major), Secretary, Mon. T.F. Association, 35, Stow-hill, Newport, Mon.

JULY 14. — **Northfield.** — WATER-CLOSETS.—King's Norton and Northfield U.D.C. invite tenders from builders for the conversion of two privies into water-closets at Northfield, including all necessary drainage work. Plans may be seen at, and copies of specification obtained from, the office of the Engineer and Surveyor to the Council, Mr. A. W. Cross, A.M.Inst.C.E., 23 and 25, Valentine-road, King's Heath.

JULY 15.—**Elland.**—VILLA.—Tenders are invited for the various works (painting excepted) required in the erection of a detached villa at Huflen Edge, Elland, for Mr. Geo. Ingham. Plans can be seen, and quantities obtained, at offices of Messrs. Richard Horsfall & Son, architects, Halifax.

JULY 15. — **Middlesbrough.** — ALTERATIONS AND ADDITIONS TO CANNON-STREET POLICE-STATION. — The Watch Committee invite tenders for alterations and additions to Cannon-street Police-station. Plans, etc., may be seen, and bills of quantities obtained, on application at office of Mr. S. E. Burgess, M.Inst.C.E., Borough Engineer, Borough Engineer's Office, Municipal Buildings, Middlesbrough.

JULY 16. — **Chopwell, Durham.** — LOCK-UP.—Tenders are invited for the erection of a new lock-up at Chopwell. Plans, etc., may be seen, and bills of quantities obtained, at the County Surveyor's office, Shire Hall, Durham.

JULY 16. — **Edinburgh.** — REINFORCED CONCRETE WATER STORAGE TOWER, GORGIE.—The Magistrates and Council invite tenders for the construction of a reinforced concrete water storage tower at their new slaughter-houses and cattle markets, Gorgie. Specification and form of tender can be obtained on applying to Mr. J. Walker Smith, Burgh Engineer, at his office, where also the plans can be seen.

JULY 16. — **Leigh.** — VESTRIES. — New vestries for Parish Church, Leigh. Plans and specification at the church and at the office of the architects, Messrs. Austin & Paley, Lancaster. Bills of quantities may be obtained on application to Messrs. Wright & Son, surveyors, Lancaster.

JULY 16. — **Rhondda.** — SCHOOL WORKS.—Rhondda U.D.C. invite tenders for the carrying out of improvements at Graigddu School. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the office of the architect, Mr. Jacob Rees, Hillside Cottage, Pentre, upon the production of a receipt from the Accountant of the Council for the required deposit of 1*l.* 1s.

JULY 17. — **Ammanford.**—SWIMMING BATH.—Erection of a building and the construction of a swimming bath for the Y.M.C.A. at Ammanford. Names to Mr. David Thomas, M.I.Mun.E., architect and surveyor, enclosing a deposit of 2*l.* 2s. Plans, etc., may be seen at offices of architect, Quay-street, Ammanford.

JULY 17.—**Guildford.**—WALLING, ETC.—The Guardians invite tenders for the erection of certain walling and sanitary outbuilding on the Workhouse premises at Guildford. The plan, etc., can be seen on application to Mr. Edward L. Lunn, architect, 36, High-street, Guildford.

JULY 17. — **Grantown-on-Spey.** — SCHOOL ADDITIONS.—Mason, carpenter, plumber, slater, plaster, and painter works of additions and alterations at the Grammar School, Grantown-on-Spey. The plans, etc., may be seen with Bailie Mackintosh, Grantown-on-Spey, and at the office of Mr. John Wittet, architect, Elgin.

JULY 17.—**Penygraig.**—VESTRY.—Vestry, etc., in Field-street, Penygraig, for the Trustees of Tabor Welsh Congregational Chapel, Penygraig. Plans, etc., to be seen at office of Mr. R. S. Griffiths, M.S.A., architect and surveyor, Tonypandy.

JULY 19. — **Carlisle.** — WAREHOUSES. — Erection of warehouses, Crown-street, Carlisle, for Messrs. P. McCunniskey. Quantities, etc., can be obtained at offices of Mr. H. Foxall, architect, 54, Lowther-street, Carlisle, on payment of a deposit of 1*l.* 1s.

JULY 19. — **Hull.** — ALMSHOUSES.—Two blocks of almshouses, to be built at the entrance to the Pickering Park, Hessle-road, for Mr. Christopher Pickering. Drawings, etc., may be seen at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull. Quantities obtained upon a deposit of 2*l.* 2s.

JULY 19.—**London.**—KITCHEN.—The Guardians of the Poor of St. Marylebone Parish invite tenders for the reconstruction of kitchen and supplying new apparatus, steam and gas cookers, steamers, and bakery oven, etc., at the St. Marylebone Infirmary, Rackham-street, Notting Hill, W. Specification upon application to Mr. Frank H. Fraser, of 98, Commercial-road East, on depositing with him 2*l.* 2s.

* JULY 19.—**Merton.**—COTTAGES.—Tenders are invited for the erection of eight cottages in Mill-road, Merton Abbey Estate, High-street, Merton, S.W. See advertisement in this issue for further particulars.

JULY 20. — **Dublin.**—REPAIRS, PAINTING, ETC.—The Technical Education Committee invite tenders for repairs, alterations, painting, etc., in connexion with the Technical Schools premises, Lower Kevin-street, Dublin, in accordance with the specification, etc., prepared by the City Architect. Copies of the specification, etc., can be obtained at the office of the City Treasurer, Municipal Buildings, Cork-hill, Dublin, on payment of 1*l.*

JULY 20. — **Treharris.**—VILLAS, ETC.—Construction of roads and sewers, also for eight villas and twenty-two or more cottages, at Treharris, for Messrs. The Park Building Club. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect, etc., Treharris.

JULY 20. — **Ystrad Rhondda.** — ADDITIONS TO VESTRY.—Alterations and additions to vestry, Bethel Welsh Calvinistic Methodist Chapel, Ystrad Rhondda, for the Trustees. Plans, etc., may be seen, and bill of quantities obtained, at office of Mr. W. D. Morgan, M.S.A., architect, 194, Ystrad-road, Pentre, on payment of a deposit of 2*l.* 2s.

* JULY 21.—**Homerton.**—ADDITIONS TO HOSPITAL.—The Metropolitan Asylums Board invite tenders for additional accommodation for male staff at the Eastern Fever Hospital, Homerton-grove, Homerton. See advertisement in this issue for further particulars.

JULY 22.—**Ballynahinch.**—CHURCH.—Tenders are invited for the erection and completion of a new Congregational Church, at Ballynahinch, Co. Down. Copy of plans, etc., may be had from Mr. John Seeds, architect, 7, Donegall-square West, Belfast.

* JULY 22. — **Dartmouth Park-hill.**—CHIMNEY-STACKS.—The St. Pancras Guardians invite tenders for rebuilding chimney-stacks and pointing at the Infirmary, Dartmouth Park-hill. See advertisement in this issue for further particulars.

JULY 23.—**Putford and Woolfar-Disworthy.**—HOUSE AND SCHOOL.—Devon County Education Committee invite tenders for a mistress' house and other work at the West and East Putford Council School, and for the enlargement, etc., of the Woolfar-Disworthy West Council School. The drawings, etc., may be seen at the respective schools.

JULY 24. — **Miltown-Malbay.**—SCHOOL.—Erection and completion of National Schools, Miltown-Malbay Co. Clare. The plans, etc., can be seen at the Presbytery, Miltown-Malbay, or at the office of the architects, Messrs. O'Malley & O'Rourke, 10,

Digitized by Google

Glentworth-street, Limerick. Forms of tender and bills of quantities will be supplied on deposit of 1*l.*

JULY 24.—**Oxford.**—WORKS AT CATTLE MARKET.—The Corporation of Oxford invite tenders for works in connexion with the reconstruction of the Cattle Market, Gloucester Green, Oxford. Plans, etc., can be seen at the office of the City Estates Surveyor, Town Hall, Oxford, and any further information may be obtained from him.

✱ JULY 26.—**Islington.**—COTTAGE.—The Islington B.C. invite tenders for the erection of a mortuary keeper's cottage in Holloway-road, N. See advertisement in this issue for further particulars.

✱ JULY 26.—**Sandhurst.**—SIX CADET BLOCKS, ETC.—The Secretary of State for War invites tenders for erection of six cadet blocks and administrative block. See advertisement in this issue for further particulars.

JULY 27.—**Aspull.**—SCHOOL.—Lancashire Education Committee invite tenders for the erection of a new Elementary School for infants at Aspull, near Wigan, for 300 scholars. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l.*

✱ JULY 27.—**Chichester.**—ELEMENTARY SCHOOL.—The W. Sussex and Chichester Joint Education Committee invite tenders for erection of a new elementary school in Orchard-street, Chichester. See advertisement in this issue for further particulars.

✱ JULY 29.—**Bedford.**—ADDITIONS TO SHIRE HALL.—The Bedfordshire C.C. invite tenders for erection of additional offices and Council-chamber. See advertisement in this issue for further particulars.

AUGUST 2. — **Skewen.**—STATION.—Great Western Railway Directors invite tenders for the erection of a new station at Skewen, Glamorganshire. Plans, etc., may be seen, and forms of tender and bills of quantities obtained, at the office of the Engineer at Neath Station, between the hours of 10 a.m. and 4 p.m.

✱ AUGUST 2. — **Stratford-on-Avon.**—ALTERATIONS TO STATION.—The G.W.R. invite tenders for additions and alterations to the station at Stratford-on-Avon. See advertisement in this issue for further particulars.

✱ AUGUST 9.—**Cove and Hawley.**—NEW SCHOOL.—The Southampton C.C. invite tenders for erection of new school for 140 children. See advertisement in this issue for further particulars.

NO DATE.—**Bakewell.**—BATHS.—Tenders are invited for the erection and completion of proposed new public baths in the Bath Gardens, Bakewell, for the Bakewell U.D.C. Plans may be seen, and bills of quantities obtained, at the offices of Messrs. Bryden & Walton, architects and surveyors, Buxton, on deposit of 10s.

NO DATE.—**Bradford.**—SKATING RINK.—Erection of a skating rink at Toller-lane, Bradford. Names to Mr. W. E. Thresh, architect, Thorpe-chambers, Bradford.

NO DATE.—**Cardiganshire.**—SCHOOL WORKS.—The Cardigan County Education Committee invite estimates for carrying out improvements and repairs to the undermentioned school buildings, viz., Rhydypennau, Talybont, and Blaenau. Plans, etc., can be seen, and full particulars obtained, from the respective headmasters or from the office of Mr. Geo. Dickens-Lewis, M.S.A., County Architect, Aberystwyth.

NO DATE.—**Carlisle.**—WORKS AT MART.—The Directors of Hetherington's Auction Company, Ltd., Carlisle, invite tenders for wrought-iron pens, concrete floors, and drainage at Mart, Earl-street. Plans, etc., may be seen, and copy of bill of quantities obtained, at the office of Mr. Joseph Graham, architect, 28, Castle-street.

NO DATE.—**Drighlington.**—CLUB.—Erection of the Tempest Constitutional Club, Drighlington. Apply to Mr. Louis Ambler, architect, Temple-chambers, Temple-avenue, London.

NO DATE.—**Gayton.**—SCHOOL ENLARGEMENT.—Plans, etc., can be inspected on application at Gayton Vicarage.

NO DATE.—**Leominster.**—HOUSES, ETC.—Herefordshire C.C. Small Holdings and Allotments Committee invite tenders for the erection of houses and farm buildings at Nordan Farm, near Leominster. The plans may be seen, and bills of quantities obtained, at office of Mr. Henry T. Tate, County Land Agent 132, St. Owen-street, Hereford, on payment of 1*l.* 1s.

NO DATE.—**Mynyddygarreg.**—COTTAGES.—Erection of workmen's cottages on Mynyddygarreg. For particulars apply A. Y., Dinas Silica Brick and Lime Company, Ltd., Kidwelly.

NO DATE.—**Newport, Barnstaple.**—RESIDENCE.—Tenders are required for the erection of a detached residence on a site adjoining Rumsam-road, Newport, Barnstaple. For plans and particulars apply to the architects, Messrs. W. C. Oliver & Son, A.R.I.B.A., M.S.A., Bridge End, Barnstaple.

NO DATE.—**New Quay.**—VILLA.—Tenders are invited for building a villa at New Quay for Capt. Evans. For particulars write to Mr. James Jones, architect, Dolwen, Rhydlewis.

NO DATE. — **Thornton-le-Moors.**—REBUILDING.—Rebuilding of St. Mary's Church tower, Thornton-le-Moors, Chester. Apply for plans and specifications to F. P. Oakley, Haworth's buildings, Cross-street, Manchester, or at Kelsall, Chester.

ENGINEERING, IRON, AND STEEL.

JULY 12. — **Edinburgh.** — ELECTRIC LIGHT. — The School Board invite estimates for an electric light installation at Gorgie School. Specifications may be obtained at the office of Mr. George Thomson, A.M.Inst.C.E., M.Inst.M.E., 11, Randolph-place.

JULY 12.—**Salford.**—WIRING.—The Electricity Committee invite tenders for rewiring at the Royal Technical Institute. Specification, etc., may be obtained from Mr. V. A. H. M'Cowen, Borough Electrical Engineer, Electricity Works, Frederick-road, Pendleton, upon payment of a deposit of 1*l.* 1s.

JULY 13.—**Rotherham.**—GATES, ETC.—The Education Committee invite tenders and designs for wrought-iron or cast-iron gates and palisading required at the new High School at Middle-lane. Full particulars may be obtained on application to Mr. Spurley Hey, Director of Education, Education Offices, Imperial-buildings, Rotherham.

JULY 13.—**Swansea.**—HEATING PORTION OF WORKHOUSE.—Plans may be seen, and specifications, etc., obtained, for payment of 3*l.* 3s., at the office of Mr. H. A. Ellis, architect, Fisher-street, Swansea.

JULY 14. — **Middleton.**—BOILER.—The Corporation of Middleton invite tenders for a Lancashire boiler. Further particulars, etc., may be obtained on application to Mr. C. F. Broadhead, Gas Engineer, Middleton.

JULY 14.—**Shaftesbury.**—HEATING.—Supplying and fixing hot-water heating apparatus at the Westminster Cottage Hospital, Shaftesbury, where particulars are to be obtained.

JULY 16.—**Chichester.**—HARBOUR IMPROVEMENTS.—The Corporation invites tenders for the proposed dredging in Chichester Harbour, near Dell Quay. Details of the proposed work and form of tender can be obtained on application at the City Surveyor's Office, Chichester.

JULY 16.—**Treorchy and Tonypandy.**—BRIDGE WORKS.—Rhondda U.D.C. invite tenders for (1) abutments and wing walls of a bridge over the Rhondda Fawr River at Treorchy; (2) steelwork in girders and flooring for the above bridge; (3) concrete and masonry foundations for proposed bridge over colliery incline at Nant Gwyn, Tonypandy. Plans may be seen, and forms of tender obtained, at the office of the Engineer and Surveyor, Council Offices, Pentre, Rhondda, on payment of the sum of 1*l.* 1s. for each contract.

JULY 17. — **Edinburgh.** — BOILER, ETC. — The Magistrates and Council invite tenders for steam boiler, water tanks, and hot-water installation works at new slaughterhouses, Gorgie, according to plans, etc., which may be seen at the office of Mr. James A. Williamson, A.R.I.B.A., Public Works Office, City Chambers, from whom also schedules of quantities may be obtained on personal application.

JULY 19. — **Dublin.** — WORKSHOP MACHINERY AND LIFT.—The Cleansing Committee of the Dublin Corporation invite tenders for the supply and erection of machinery to their new workshops, now in course of erection at the Corporation Depôt, Stanley-street, Dublin. The Cleansing Committee also invite tenders for supply and erection in the same building of an electrically driven goods lift, to carry up to 1 ton. Specification, etc., can be obtained at office of Mr. Fred J. Allan, Secretary, Cleansing Committee, 3, Cork-hill, Dublin, on payment of 1*l.* 1s.

JULY 19. — **Hammersmith.**—COAL TRANSPORTER.—The Metropolitan Water Board invite tenders for the supply and erection of coal transporter and appurtenant works at their Pumping Station. Forms of tender etc., on application to the Engineer, Metropolitan Water Board, Western District, 41, Commercial-road, Pimlico, S.W., on the production of an official receipt for the sum of 10*l.*, which sum must be deposited with the Accountant at Savoy-court, Strand, W.C.

✱ JULY 19.—**Ilford.**—"ROBIN HOOD" BOILER.—The Ilford Education Committee invite tenders for supply and fixing of a "Robin Hood" boiler at Cleveland-road School. See advertisement in this issue for further particulars.

JULY 20.—**Barton Mills.**—THE MILL BRIDGE.—The West Suffolk C.C. invite tenders for repairs to the above. Plans, etc., can be seen, and form of tender obtained, on application to Mr. A. Ainsworth Hunt, County Surveyor, Shire Hall, Bury St. Edmund's.

JULY 21.—**Fleetwood.**—FISH MOUND AND ROOFING.—Lancashire & Yorkshire Railway Directors invite tenders for the extension of fish mound and construction and erection of roofing over existing and new fish stages at Wyre Dock, Fleetwood. Plans can be seen, and copies of tender, etc., obtained, on application at the engineer's office, Hunts Bank, Manchester.

JULY 21.—**Park.**—BRIDGE.—Lancashire and Yorkshire Railway Directors invite tenders for the widening of the bridge over Ten Acres-lane, Baguley Fold, Park, near Manchester. Plans can be seen, and copies of tender, etc., obtained, on application at the engineer's office, Hunts Bank, Manchester.

JULY 23. — **Bradford.** — ESHOLT SEWAGE DISPOSAL WORKS, CONTRACT NO. 2: BRANCH RAILWAY, STORM-WATER, AND PRECIPITATION TANKS.—Tenders are invited for the excavation of about 25,000 cubic yds. of material, the formation of 624 yds. of railway embankment, and the construction of tanks having a capacity of 3,000,000 gallons. Copies of the specification, etc., may be obtained, and the drawings seen, at the office of Mr. Joseph Garfield, A.M.Inst.C.E., Esholt Hall, Shipley (station, Apperley Bridge, Midland Railway), on the payment of a sum of 3*l.* 3s.

JULY 26.—**Dublin.**—ENGINES.—The Directors of the Great Northern Railway Company, Ireland, invite tenders for three four-wheeled, coupled passenger engines. Drawings and specifications can be obtained on application to Mr. T. Morrison, Secretary, Secretary's office, Amiens-street Terminus, Dublin, on payment of 10s. (not returnable).

✱ JULY 27.—**Leyton.**—ELECTRIC WIRING, ETC.—The Leyton Education Committee invite tenders for the electric wiring and fittings for installation of electric light at Sybourn-street School. See advertisement in this issue for further particulars.

JULY 29.—**Hull.**—PIER.—Hull and Barnsley Railway Company invite tenders for labour and part of materials in the construction of a low-water landing pier in the River Humber at Hull. Drawings may be seen, and specifications, etc., obtained, at the office of the Engineer, Mr. R. Pawley, 9, Charlotte-street, Hull, on payment of 3*l.* 3s.

AUGUST 16.—**Bury.**—BOILERS.—The Corporation of Bury invite tenders for the supply and erection of three water-tube boilers, each capable of evaporating 25,000 lb. of water per hour. A copy of the specification and form of tender may be obtained from Mr. S. J. Watson, M.Inst.E.E., Engineer and Manager, Electricity Works, Bury, on payment of a deposit of 2*l.* 2s.

NO DATE. — **Dundalk.**—HEATING APPARATUS.—Estimates invited for fitting church with heating apparatus. Particulars from Rev. S. Mayes, Creggan Rectory, Dundalk.

NO DATE.—**Tolcross.**—PIER WORK.—Offers wanted to do the digger-work and brickwork of Gantry Piers at Clyde Ironworks, Tollcross. Specifications and further information to be had at Clyde Ironworks, Tollcross.

MISCELLANEOUS.

✱ JULY 14.—**Edgware.**—REMOVING A CHAPEL.—The Hendon Guardians invite tenders for removing the corrugated iron church at the Workhouse. See advertisement in this issue for further particulars.

JULY 14.—**Wigton Police-station.**—COURT-HOUSE FITTINGS.—Joiner's work required in the Court-house fittings at the above. Names to Mr. Geo. Dale Oliver, F.R.I.B.A., County Architect, Carlisle.

JULY 15.—**Lambeth.**—SLOP CARTS.—The Lambeth B.C. invite tenders for the supply of six slop carts. Specification, etc., may be obtained from Mr. Henry Edwards, C.E., Borough Engineer, Town Hall, Brixton-hill, S.W.

JULY 16.—**West Ham.**—TRAMCARS, ETC.—The B.C. invite tenders for:—Six double-deck electric tramcars, six trucks, and six complete electrical equipments. Specification, etc., may be obtained from Mr. H. E. Blain, Tramways Manager, Greengate-street, Plaistow, E., on the deposit of a 5*l.* Bank of England note.

✱ JULY 19. — **Ilford.** — COMPOSITION FLOOR.—The Ilford Education Committee invite tenders for supplying and laying a patent composition floor in Central Hall at Newbury Park School. See advertisement in this issue for further particulars.

✱ JULY 19.—**Ilford.**—DUAL DESKS, ETC.—The Ilford Education Committee invite tenders for supply of dual desks and other furniture at Goodmayes School, Ilford. See advertisement in this issue for further particulars.

✱ JULY 19.—**London.**—POINTING.—The Managers of the Central London Sick Asylum District invite tenders for pointing, etc., at the Asylum, 42a, Cleveland-street, W. See advertisement in this issue for further particulars.

JULY 19. — **Southam.**—ROAD ROLLING.—Southam R.D.C. invite tenders for the hire of a steam roller (weight not to exceed 10 tons) for a period of about three months. Further information can be obtained from Mr. W. Cotterill, Surveyor, Southam, Warwickshire.

✱ JULY 21.—**Stockwell.**—SLATE ROOF AND CHIMNEY REPAIRS.—The Metropolitan Asylums Board *invite* tenders for repairs to slate roof and chimney-stack at the Fever Hospital, Stockwell. See advertisement in this issue for further particulars.

✱ JULY 22.—**Kensington.**—FLOOR LAYING, PLASTERING, AND DECORATING.—The Kensington Guardians invite tenders for laying pitch pine floors, plastering walls, and sundry decorating works in the Infirmary at Kensington. See advertisement in this issue for further particulars.

JULY 24. — **Cardiff.**—FIREGUARDS.—The Guardians invite tenders for the supply to, and alteration of fireguards at, Children's Homes in Cardiff, Ely, Penarth, and Barry, according to specification, a copy of which, together with the form of tender, may be obtained from Mr. Arthur J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.

JULY 24. — **Chadderton.** — FILTERING MEDIUM.—Chadderton U.D.C. invite tenders for about 6,000 cubic yds. of clean hard blast furnace slag. For further particulars apply to Messrs. James Diggle & Son, civil engineers, Hind Hill-street, Heywood.

JULY 28.—**Govan.**—PUBLIC BOWLING GREENS.—The T.C. invite tenders for the formation of two public bowling greens. Plans, etc., may be seen, and specifications, etc., obtained, on application to Mr. F. G. Holmes, C.E., Town Hall, Govan.

JULY 29. — **Gosforth.** — SCAVENGING. — Gosforth U.D.C. invite tenders for the cleansing of the ash-pits, ashboxes, etc. Specification etc., may be had on application at the Council Offices, from the Inspector of Nuisances.

NO DATE.—**Taunton.**—DESKS.—Taunton Borough Education Committee invite tenders from tradesmen in the Borough for the supply of dual desks and other furniture to Trinity School. Specification and form of tender may be obtained from Mr. George H. Kite, Town Clerk, and Clerk to the Taunton Borough Education Committee.

PAINTING, etc.

JULY 12. — **Brighton.** — PAINTING.—The Education Committee invite tenders for internal and external repairs, painting, etc., to certain of the schools, etc. The Committee also invite tenders for the installation of the electric light in the Ditchling-road Council School. Specifications may be seen, and forms of tender obtained, at the offices of the Surveyors to the Committee, Messrs. T. Simpson & Son, 16, Ship-street, Brighton.

JULY 12.—**Bury.**—PAINTING, ETC.—The Committee of the Bury District Co-operative Society, Ltd., invite tenders for the painting and beautifying of their several cottages and shops. Particulars of work required may be obtained at the office, Knowsley-street, Bury.

JULY 12.—**New Tredegar, etc.**—PAINTING.—Monmouthshire Education Committee invite tenders for painting and colouring the following Council Schools:—New Tredegar (Elliot Town) Mixed and Infants' Schools, New Tredegar Town Mixed and Infants' Schools, Ynysddu Council School. Specifications may be seen at office of Mr C. Dauncey, Secretary, County Council Offices, Newport, or at the schools.

JULY 13.—**Hove.**—PAINTING.—Hove Borough Education Committee invite tenders for the internal painting, etc., and other works at Connaught-road, East Hove (Davigdor-road), Ellen-street, and George-street Schools. Specifications may be seen at the office of the Borough Surveyor, Mr. H. H. Scott, Esq., Town Hall, Hove, where also forms of tender may be obtained.

JULY 13.—**Keighley.**—PAINTING.—The Guardians of the Keighley Union invite tenders for certain painters' work at the Workhouse. Particulars can be obtained from Messrs. Moore & Crabtree, York-chambers, Keighley.

JULY 13. — **Nottingham.** — PAINTING.—The Water Committee invite tenders for the painting of two large pumping engines, engine-house, boiler-house,

Digitized by Google

and five cottages, at the Papplewick Pumping Station. Specifications, etc., may be obtained from Mr. F. W. Davies, Water Engineer, St. Peter's Church-side, Nottingham, on payment of a deposit of 1*l*.

JULY 13.—**Redruth.**—PAINTING, ETC.—Redruth and Camborne District Education Committee invite tenders for the work of painting or staining to be done at schools. Specifications as to the work required may be seen any morning at the Education Office, Redruth.

JULY 14.—**Cardiff.**—RENOVATING SHELTERS.—Tenders are invited for painting and renovating seven cabmen's shelters in the City of Cardiff. Specifications, etc., can be obtained on application at the office of the City Engineer, Mr. W. Harpur, M.Inst.C.E., City Hall, Cardiff.

JULY 14.—**Kent.**—PAINTING AND REPAIRS.—For painting and repairs at Knockholt, Malling, Northfleet, Sittingbourne, and Swanley Police-stations; Southborough Police-office; Tenterden Lock-up; and Wingham Sessions House. Bill of quantities and tender form at the office of the County Architect, 66, Week-street, Maidstone. The specification of the work can be inspected at the buildings daily.

JULY 16.—**Rhondda.**—PAINTING.—Rhondda U.D.C. invite tenders for painting and colouring schools. Specifications, etc., may be seen, and forms of tender obtained, at the residence of the architect, Mr. Jacob Rees, Hillside Cottage, Pentre.

JULY 16.—**Sheffield.**—PAINTING, ETC.—The Education Committee invite tenders for painting, distempering, and asphalting, required to be done at Council Schools. Specifications, etc., may be obtained on application to the City Architect, Town Hall, Sheffield.

JULY 17.—**Barrow-in-Furness.**—PAINTING, ETC.—The Corporation invite tenders for painting and cleaning the whole or any of the undermentioned schools:—The Secondary School, the Barrow Island School, the Latona-street Infants' School. By order, Mr. L. Hewlett, Town Clerk.

JULY 19.—**Dorchester.**—PAINTING, ETC.—Carrying out certain painting, limewashing, and repairing at the Dorchester Church of England Schools during the summer holidays. Particulars and forms of tender may be obtained at the Secretary's office, 24, High West-street, Dorchester.

JULY 19.—**Taunton.**—WHITEWASHING, ETC.—Taunton Borough Education Committee invite tenders for whitewashing, cleaning, painting, etc., the interior of nine Elementary Schools in the Borough. Specification of works may be seen, and further particulars obtained, of the Sanitary Inspector, at the Municipal Buildings.

* JULY 21. — **Hoxton.** — PAINTING, ETC. — The St. Leonard Shoreditch Guardians invite tenders for painting, etc., at the Casual Ward, Reeves-road, Hoxton, N. See advertisement in this issue for further particulars.

JULY 21.—**Leeds.**—PAINTING.—Tenders are invited by the Improvements Committee for painting the South Accommodation-road, Leeds, and Crown Point Bridges, over the River Aire. The specification may be seen, and forms of tender obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

JULY 21.—**Leeds.**—PAINTING.—Tenders are invited by the Parks Committee for the painting work required in various parks and cemeteries. The specifications may be seen and forms of tender obtained. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

* JULY 21.—**Limehouse.**—PAINTING, CLEANSING, ETC.—The Stepney B.C. invite tenders for cleansing, painting, and redecorating, externally and internally, at the Town Hall, Limehouse. See advertisement in this issue for further particulars.

* JULY 21.—**London.**—PAINTING AND REPAIRS.—The Metropolitan Asylums Board invite tenders for painting and repairs at the Offices of the Board, Embankment, E.C. See advertisement in this issue for further particulars.

JULY 21.—**Shoreditch.**—PAINTING.—The Guardians of the Poor of the Parish of Saint Leonard, Shoreditch, invite tenders for painting and other work at their Casual Wards, Reeves-place, Hoxton, N. The specification can be seen at the office of Mr. A. W. S. Cross, F.R.I.B.A., 46, New Bond-street, W.

* JULY 22.—**Dartmouth Park Hill.**—PAINTING.—The St. Pancras Guardians invite tenders for painting, etc., at the Infirmary at Dartmouth Park-hill. See advertisement in this issue for further particulars.

JULY 23.—**Scartop.**—PAINTING, ETC., SUNDAY SCHOOL.—Tenders are invited for painting, lighting (acetylene or petrol gas), and heating the school. Mr. Joseph Sunderland, Stanbury, near Keighley.

NO DATE.—**Abram.**—BEAUTIFYING HOUSES.—Tenders are invited for the beautifying of nineteen houses inside. For specification apply to Mr. C. Bennett, 166, Warrington-road, Abram.

NO DATE.—**Ardsley.**—PAINTING, ETC.—The Ardsley (E. and W.) District Education Committee invite tenders for painting, etc., at schools.

NO DATE.—**Lesmahagow.**—PAINTING.—The School Board invite offers for painter work of new Higher Grade School, Lesmahagow. Applications for schedules, for slump sum offer, to be made to Mr. J. N. Gilmore, Clerk of the Board, Lesmahagow.

NO DATE. — **Preston.**—DECORATION.—Preston Education Committee invite tenders for the decoration of the inside of Roebuck-street Council School. Forms of tender, etc., from the Director of Education, 188, Lancaster-road, Preston.

NO DATE. — **Rothwell.** — PAINTING, ETC.—Rothwell District Education Committee invite tenders for work of painting, etc., at school premises.

NO DATE.—**Swansea.**—PAINTING.—Tenders are invited for the painting required to be done at the Swansea Hospital. Full information may be had on application to Mr. W. D. Hughes, Secretary, Swansea Hospital.

ROADS SANITARY, AND WATER WORKS.

JULY 10-22.—**Darfield.**—SEWAGE WORKS.—Darfield U.D.C. invite tenders for the execution of a scheme of sewage disposal for Darfield. Names to Messrs. Balfour & Son, civil engineers, 3, St. Nicholas-buildings, Newcastle-upon-Tyne, and London, accompanied by a cheque for 5*l*.

JULY 12.—**Blackburn.**—PAVING, ETC.—The Highway Committee invite tenders for excavating, forming, and paving of the following streets, viz.:—Albion-street, Smalley-street, and the back roads behind. Plans, etc., may be seen, and all information obtained, upon application at office of Mr. William Stubbs, Borough Engineer, Municipal Offices, Blackburn.

JULY 12.—**Itchen.**—DRAINAGE.—Itchen U.D.C. invite tenders for laying surface-water drainage at Muddy Bottom and Brickyard Hill, Sholing. Plans, etc., may be seen upon application to Mr. T. A. Collingwood, Surveyor, Council Offices, Portsmouth-road, Woolston, from whom also bills of quantities, etc., may be obtained on the deposit of 1*l*.

JULY 12. — **Lanark.** — LOCHLYOCK WATERWORKS EXTENSION.—The T.C. of Lanark invite tenders for providing and delivering about 975 tons of cast-iron pipes, 9 in. in diameter, and the relative special castings in connexion therewith. Copies of the specification and schedule may be obtained at the office of the engineer, Mr. M. Ratcliffe Barnett, C.E., 124, St. Vincent-street, Glasgow, on payment of 1*l*. 1s.

JULY 12. — **Leeds.** — PAVING, ETC. — The Highways Committee invite tenders for the paving and flagging of streets. Drawings may be seen at the City Engineer's office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

JULY 12. — **Leeds.** — PAVING, ETC.—The Highways Committee invite tenders for the paving of Vernon-street, part of Church-street, Hunslet, and parts of Woodsley-road. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

JULY 12-17.—**Linlithgow (Bathgate District).**—FAULDHOUSE DRAINAGE. — The Bathgate District Committee invite tenders for the construction of about 3½ miles of 6-in. to 15-in. sewers, sedimentation tanks, and relative works. Plans may be seen, and copies of the specifications, etc., obtained, at the office of Messrs. Middleton, Hunter, & Duff, MM.Inst.C.E., 42, Frederick-street, Edinburgh, on payment of 1*l*. An assistant engineer will meet intending offerers at Fauldhouse Caledonian Station at 10.43 a.m. on July 12.

JULY 13.—**Northfleet.**—PAVING.—Northfleet U.D.C. and the Gravesend and Northfleet Electric Tramways, Ltd., invite tenders for granite sett paving and repaving the tramway track in Stonebridge-road, Northfleet, Kent, in accordance with the plans, etc., now lying for inspection at the Council Offices, The Hill, Northfleet, and the Electrical Federation Offices, Kingsway, London, W.C. Copies of the schedules, etc., may be obtained on application at either of the said offices on depositing with the Clerk to the Northfleet Council or the Secretary of the Tramway Company the sum of 1*l*. 1s.

JULY 13. — **Northfleet.** — MAKING-UP SPRINGFIELD-ROAD.—The U.D.C. invite tenders for making-up the above road in accordance with plans, etc., to be seen at the Council Offices, The Hill, Northfleet. Copies of the schedules, etc., may be obtained on application at the said offices on depositing the sum of 1*l*. 1s.

JULY 13. — **Rhondda.** — SEWER.—Rhondda U.D.C. invite tenders for laying about 300 yds. of 9-in. stoneware pipe sewer at Cwmpark. Plans, etc., may be seen, and forms of tender obtained, at the Council Offices, Pentre, on payment of a deposit of 1*l*. 1s.

JULY 15.—**Hull.**—STREET.—Construction of a new street on the Holderness-road. Bills of quantities and other particulars can be obtained from Mr. E. Whitlock, architect, Scale-lane, Hull.

JULY 15.—**Keighley.**—PAVING.—Tenders are invited for paving, etc., of Rylstone and Sussex streets. Full particulars from Mr. W. Fowlds, A.M.Inst.C.E., Borough Engineer.

JULY 15.—**Winton, Bournemouth.**—TAR PAVING.—Tenders are invited for tar paving works in Wimborne-road, Winton. Full particulars, etc., can be obtained of the Borough Engineer, Mr. F. W. Lacey, provided that the sum of 1*l*. 1s. has been previously deposited with him.

JULY 15.—**Woodhouse School.**—ASPHALTING OF INFANTS' PLAYGROUND.—Normanton District Education Committee. Specifications may be obtained from Mr. Alexander Angus, 128, Northgate, Wakefield.

JULY 16. — **West Bromwich.** — ROAD WORKS. — Walsall and West Bromwich District Schools Managers require tenders for kerbing, channelling, and paving of road at the Wigmore Schools, West Bromwich. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. H. Ward, Clerk, 1, Church-street, West Bromwich.

JULY 19.—**Soyland.**—MAIN SEWERAGE AND SEWAGE DISPOSAL WORKS.—Soyland U.D.C. invite tenders for the construction of about 1,300 yds. of main pipe sewers, bacteriological tanks and filters, and appurtenant work. Plans to be seen, and form of tender to be obtained, at the offices of Mr. Fred Gordon, engineer, Clifton, Brighouse.

JULY 19.—**Thorpe, Rothwell.**—STREET WORKS.—Rothwell U.D.C. invite tenders for the levelling, paving, flagging, kerbing, sewering, and making good of two streets at Thorpe. Plans, etc., may be seen, and specifications, etc., may be obtained, on application to Mr. J. Southwart, Engineer and Surveyor, Council Offices, Rothwell, on deposit of cheque made payable to the Treasurer for 1*l*. 1s.

JULY 19.—**Worthing.**—TAR PAVING.—Tar paving works at the Isolation Hospital. Form of tender, etc., may be obtained from the Borough Surveyor.

* JULY 20. — **Bromley.**—SEWERING, ROAD-MAKING, ETC.—The Bromley B.C. invite tenders for sewering, levelling, paving, metalling, channelling, and making good Sundridge-avenue. See advertisement in this issue for further particulars.

JULY 20.—**Croydon.**—PRIVATE STREET WORKS.—Repair of Abbey-road. Plans, etc., may be seen, and forms of tender obtained, on application at the Borough Road Surveyor's Office, Town Hall, Croydon.

JULY 20.—**Ealing.**—PRIVATE STREET IMPROVEMENTS.—The T.C. invite tenders for the making-up of Kingsdown-avenue (from Northfield-lane to No. 29), St. Mary's-place, Chignell-place, and Accommodation-road (rear of 168-174, Uxbridge-road). The drawings, etc., may be seen, and form of tender, etc., obtained from Mr. Charles Jones, M.Inst.C.E., Borough Engineer, Town Hall, Ealing, W., upon payment of a deposit of 10s. 6d. for each road.

JULY 21. — **Bridgend.** — DRAINAGE. — The Committee of Visitors of the Glamorgan County Asylum invite tenders for the construction of sewers, with manholes, etc., purification works, and other works, at Parc Gwyllt Asylum. Specifications, etc., may be obtained (on payment of a deposit of 2*l*. 2s.) from the engineers, Messrs. John Taylor, Sons, & Santo Crimp, Caxton House, Westminster, S.W., and the drawings may be seen either at the office of the engineers or at Angelton Asylum, Bridgend, Glam.

* JULY 21.—**Holborn.**—CARRIAGEWAY REPAVING.—The Holborn B.C. invite tenders for repaving carriageway of Tottenham Court-road and constructing sewers in Chancery-lane. See advertisement in this issue for further particulars.

JULY 21. — **Springhead.** — ASPHALTING.—West Riding C.C. (Springhead District Education Subcommittee) invite tenders for asphalting the playgrounds. Specifications may be obtained from Mr. Edgar T. Woodhead, Divisional Clerk, Cloth Hall-street, Huddersfield, on receipt of stamped addressed envelope.

JULY 22.—**Lechlade.**—BURIAL GROUND.—Lechlade Burial Ground invite tenders for laying-out and enclosing a new burial ground, and forming approach thereto, as per plans, etc., provided by Mr. V. A. Lawson, architect, Cirencester, which can be seen at the offices of Mr. Frederick Street, Lechlade, between the hours of 10 a.m. and 4 p.m., on payment of 1*l*. deposit.

* JULY 22. — **Tooting.** — DRAINAGE WORK.—The Wandsworth B.C. invite tenders for drainage work at the Streatham Cemetery. See advertisement in this issue for further particulars.

JULY 24.—**Chadderton.**—SEWERS.—The U.D.C. of Chadderton invite tenders for the construction of about 2,100 lin. yds. of 15 in. and 12 in. diameter cast-iron earthenware pipe sewers, in the valley of the Irk, from Mills Hill in Chadderton to a junction to be made with the sewer of the Middleton Corporation at or near John Lee Fold. Drawings, etc., may be seen, and quantities, etc., obtained, on application at the offices of Messrs. James Diggle & Son, civil engineers, 14, Victoria-street, Westminster, S.W., or at Hind Hill-street, Heywood, on payment of a sum of 2*l*.

* JULY 26.—**Sandhurst.**—DRAINAGE, ROAD-MAKING, ETC.—The Secretary of State for War invites tenders for drainage, metalling and grading parades, roads and paths, turfing slopes, etc. See advertisement in this issue for further particulars.

AUGUST 2. — **Ulverston.**—CARTMEL WATER SUPPLY WORKS.—Ulverston R.D.C. invite tenders for cast-iron pipes, probable quantity 196 tons; valve hydrants and fittings; constructional work of laying pipes, etc. Specification and form of tender can be obtained from the Council's Engineer, Mr. W. F. Y. Molineux, Town Hall, Ulverston.

NO DATE. — **Abram.**—FLAGGING.—Tenders are invited for about 100 sq. yds. of flags and flagging. For specification apply to Mr. C. Bennett, 166, Warrington-road, Abram.

STONES, MATERIAL, AND STORES.

JULY 12.—**Leamington Spa.**—STONE.—The Corporation invite tenders for the supply of about 1,800 tons of road stone. Form may be obtained at the Borough Engineer's Office, Town Hall, Leamington.

JULY 12.—**London.**—MATERIALS, ETC.—The Port of London Authority invite tenders for supplies of materials and stores. Specifications, etc., may be obtained on application at the Authority's Stores Department, 106, Fenchurch-street, E.C.

JULY 13.—**Ladysmith, Natal.**—CAST-IRON PIPES.—The Corporation of Ladysmith, Natal, invite tenders for about 740 tons of 12-in. cast-iron pipes and special castings, etc., and 435 cwt. of soft pig lead and 24 cwt. of tar rope. Specifications, etc., may be obtained from Messrs. Webster, Steel, & Co., London Agents, 5, East India-avenue, Leadenhall-street, London, E.C., on deposit of 2*l*. 2s.

JULY 13. — **South Mims.** — GRANITE, GRAVEL, HOGGIN, AND CARTAGE.—The South Mims R.D.C. invite tenders for the supply of materials, etc. Forms of tender can be obtained at office of Mr. G. Dickinson Byfield, Clerk to the Council, 12, High-street, Barnet.

JULY 14.—**Leeds.**—MATERIALS.—The Street Lighting Committee invite tenders for supply of articles, etc. Further particulars and forms of tender may be obtained on application to the Superintendent of Street Lighting, Springwell-street Depôt.

JULY 14.—**London.**—VARNISH.—The Guardians of the Parish of St. Giles, Camberwell, invite tenders for the supply of 72 gallons best Copal varnish, to be delivered at their Infirmary, Brunswick-square, Camberwell. Forms of tender, etc., may be obtained upon application at Guardians' Offices, 29, Peckham-road, S.E.

JULY 16.—**London.**—STORES, ETC.—The Board of Directors of the Burma Railways Company, Ltd., invite tenders for the supply of miscellaneous tools and stores. Specifications and forms of tender may be obtained at the company's offices, 199, Gresham-House, Old Broad-street, E.C. For each specification a fee of 20s. will be charged, which will not be returned.

JULY 17. — **Crompton.** — SETTS.—Crompton U.D.C. Surveyor's Committee invite tenders for the supply of about 150 tons of granite cubes. Mr. F. F. Gartside, Clerk, Town Hall, Shaw, near Oldham.

JULY 19. — **Halifax.**—BROOMS.—The Health Committee of the Halifax Corporation invite tenders for the supply of 100 dozen scavengers' brooms, and also for refilling machine brushes. Further particulars may be obtained on application to Mr. D. Travis, Sanitary Inspector, Town Hall, Halifax.

★ JULY 20 — **Brentford.**—BROKEN GRANITE.—The Brentford U.D.C. invite tenders for supply of 250 yds.

Digitized by Google

of blue Guernsey granite, hand broken to gauge of 2 in. See advertisement in this issue for further particulars.

JULY 20.—**Eton.**—TIMBER.—The Guardians invite tenders for 35 fathoms of best Swedish deals and batten ends. Mr. R. H. Barrett, Clerk to the Guardians, Slough, Bucks.

JULY 20. — **Holmes Chapel.** — PIPES, ETC. — The Congleton R.D.C. invite tenders for the supply of cast-iron pipes and specials for water supply. Specification, etc., may be obtained on application to the engineer, Mr. W. Woodley Wyatt, Whitchurch, Salop.

JULY 20.—**Kidderminster.**—OIL.—The Drainage and Waterworks Committee of the Borough of Kidderminster invite tenders for the supply of cylinder and engine oil to be delivered to their pumping station in Green-street, Kidderminster, for a period of twelve months. Copies of conditions, etc., can be had on application to Mr. James Morton, Town Clerk, Town Hall, Kidderminster.

JULY 20.—**London.**—PAINTS.—The Board of Directors of the Madras and Southern Mahratta Railway Company, Ltd., invite tenders for about 15 tons paints, etc., as per the specifications, which may be seen at the offices of the company. The charge for the specifications is 1*l.* 1s., which will not be returned. Mr. H. Bonham-Carter, Secretary, offices, 91, York-street, Westminster, S.W.

JULY 20. — **Sunbury-on-Thames.**—TAR MACADAM AND FLINTS. — The U.D.C. invite tenders for the supply and free delivery at Sunbury Railway Station for the coming season of not less than 450 tons of tar macadam. Also for the supply and delivery of not less than 500 cubic yds. of Kentish brown pit flints, delivered at a riverside wharf. Further particulars may be obtained of Mr. Harold F. Coales, the Surveyor to the Council.

JULY 31. — **Eastbourne.** — PIPES.—The Highways and Drainage Committee of the Corporation invite tenders for the supply of about 465 tons in all of cast-iron pipes, 4·5 ft. internal diameter. Drawings, etc., may be seen, and forms of tender and copies of the specification may be obtained, at office of Mr. A. Ernest Prescott, Borough Engineer, Town Hall, Eastbourne, on payment of 2*l.* 2s.

AUGUST 9. — **London.** — TELEGRAPH POLES.—The Postmaster-General invites tenders for the supply of telegraph poles of (*a*) home-grown larch or fir; (*b*) Swedish, Norwegian, Finland, or Russian red fir. Forms of tender, containing all particulars, may be obtained on application to Mr. G. Morgan, Controller of Stores, Stores Department, G.P.O., 17-19, Bedford-street, London, W.C.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
•SANITARY INSPECTOR	East Barnet Valley U.D.C.	100*l.* per annum, increasing	July 14
•BUILDING INSPECTOR	East Barnet Valley U.D.C.	50*l.* per annum, increasing	do.
•CLERK OF WORKS	St. Pancras Borough Council	3*l.* 3s. per week	do.
•INSTRUCTOR IN HANDICRAFT (METALWORK)	London C.C.	100*l.* per annum	do.
•INSTRUCTOR IN MANUAL WORK	Liverpool Education Com.	150*l.* per annum	July 17
•CLERK OF WORKS	Southampton C.C.	3*l.* 3s. per week	July 19

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
•DARTFORD (WEST), PRIORY-PARK ESTATE—At the Bull Hotel, Dartford	Protheroe & Morris (in conjunction with Rupert Mitchell)	July 13
•FREEHOLD BUILDING LAND, TOTTENHAM AND ENFIELD—At the Mart	Protheroe & Morris	do.
•MACHINERY PLANT AND FIXTURES—At Queen's Hotel, Reading	Eggiuton & Son	do.
•MACHINERY AND PLANT—St. German's Saw Mills, Hither-green	Robson & Perrin	do.
•FOREIGN TIMBER—Pageant Ground, Colchester	Ernest Beard & Daniell	July 14
•DEALS, BATTENS, ETC.—Great Hall, Winches or House, Old Broad-street, E.C.	Churchill & Sim	do.
•BUILDING MATERIALS—The Elms, Dulwich-common	H. J. Bromley	July 15
•STOCK OF A BUILDER'S MERCHANT—At Folly Wharf, Rollins-street, S.E.	H. W. Smith	July 19
•BUILDING LAND, EALING—At the Feathers, Ealing	Edwin Evans & Sons	July 20
•BUILDER AND CONTRACTOR'S STOCK & PLANT—Church-road, Hendon	J. Hibbard	July 20, etc.
•SALE OF TIMBER—At the Yard, Bethnal Green Junction, E.	W. F. Laing	July 21
•FREEHOLD GROUND RENTS, WILLESDEN—At the Mart	Farebrother, Ellis, & Co.	July 22
•FREEHOLD CEMENT WORKS, KENT—At the Mart	Cronks	July 23
•EXHIBITION BUILDING—At the Mart	Fuller, Horsey, Sons, & Cassell	July 28
•FREEHOLD LAND, WIMBLEDON—At the Mart	L. Farmer & Sons	July 29

RECENT SALES.—*Continued from page 50.*

By WALTER LUDLOW & BRISCOE (at Birmingham).

Solihull, Warwick.—Inglewood and 1 a. 1 r. 24 p., f. £1,500
Lyndon Green and enclosures, 42 a. 1 r. 6 p., f. 6,610

June 25.—By T. W. GAZE & SON (at Diss).

Blo' Norton, Norfolk.—Fen Farm, 47 a. 0 r. 39 p., f. 800
Four enclosures of arable and fen land, 29 a. 1 r. 24 p., f. 280

By G. B. HILLIARD & SON (at Chelmsford).

Great Baddow, Essex.—Galley Hall Farm, 18 a. 2 r. 23 p., f. 1,000
Five enclosures of arable, 10 a. 2 r. 22 p., f. .. 900

By DICKINSON, RIGGALL, & DAVY (at Lincoln).

Bardney, Lincs.—Freehold farm, 44 a. 3 r. 4 p. 700
Bucknall, Lincs.—Freehold farm, 46 a. 1 r. 6 p. (including the Manor or Lordship of Bucknall) 855

June 26.—By NICHOLAS, DENYER, & Co. (at Rickmansworth).

Rickmansworth, Herts.—Freehold cottage and garden 310
Freehold building and woodland, 22 a. 0 r. 38 p. 3,815

By T. W. GAZE & SON (at Norwich).

Mundham, Norfolk.—The Laurels Farm, 382 a. 0 r. 34 p., f. and c. 6,600

June 28.—By BALLS & BALLS.

Sible Hedingham, Essex.—Graves Hall, Monks and Carters Farms, 459 a., f. 6,600

By ELLIOTT, SON, & BOYTON.

Portman Square.—Hampden Gurney-st., i.g.r. 21*l.*, u.t. 11¾ yrs., g r. 5*l.* 100

By CHARLES SPARROW & SON.

Whetstone.—Great North-rd., Breakspears and 1 a., f. 1,600

By INGE & MOTTON.

Streatham. — 26, Kirkstall-rd., u.t. 68 yrs., g.r. 15*l.*, e.r. 60*l.* 380

By TOMKINS & CHADWICK (at Blaenavon).

Blaenavon, Monmouth.—Llanover-rd., f.g. rents 126*l.* 5s. 10d. 2,615
25 and 26, Charles-st., f. 264
1 and 2, Brook Cottages, f. 250
James-st., Tir Godwith House, f. 228
14, Llanover-rd., f. 139

By MORRIS, MARSHALL, & POOLE (at Ludlow).

Ashford Carbonell, Salop.—Springfield House, three cottages and 3 a., f. 930
Sunnyside and 40 a. 1 r. 25 p., f. 2,925
The Leys Villa and 1 a. 1 r. 0 p., f. 325

By ROBT. NEWMAN (at Harlington).

Harlington, Middx.—1 and 2, Holly House and 3 a. 0 r. 18 p., f. 665

June 29.—By C. RAWLEY CROSS & Co.

Wembley.—3, Totnes-ter. (s.), u.t. 60 yrs., g.r. 6*l.* 10s., e.r. 40*l.* 390

By FAREBROTHER, ELLIS, & Co.

South Lambeth.—263 and 265, Wandsworth-rd., f.g. rents 5*l.* 12s., reversion in 24 yrs. 450

By I. GOLDSTEIN.

Spitalfields.—73, Brick-la. (s.), f., gross rental 104*l.* £1,350
261 to 269 (odd), Brick-la., u.t. 44 yrs., g.r. 75*l.*, gross rental, 245*l.* 700

By RAMSAY, WAINWRIGHT, & Co.

Clapton.—86 and 88, Mayola-rd., u.t. 66 yrs., g.r. 9*l.* 10s., gross rental 93*l.* 400

By HARLAND & SON.

Barnet.—Wood-st., Milton, f., y.r. 65*l.* 1,000
High-st., Star Tavern, f., y.r. 70*l.* (one-third share) 670

By FREDERICK WARMAN.

Finchley. — Granville-rd., Alconbury, u.t. 96 yrs., g.r. 8*l.*, y.r. 42*l.* 360
Stoke Newington.—105, Foulden-rd., u.t. 58 yrs., g.r. 6*l.*, y.r. 36*l.* 300

By THURGOOD & MARTIN.

Camberley, Surrey. — Crawley Hill, freehold land, 5 a. 1 r. 20 p. 1,300

By DEBENHAM, TEWSON, RICHARDSON, & Co.

City.—65, Friday-st. (s.), area 1,000 ft., f., y.r. 370*l.* 7,400
West Grinstead, Sussex.—Westlands and 118 a. 0 r. 9 p., f., p. 10,550

By MORRIS, MARSHALL, & POOLE (at Newtown).

Llanbadarn, Radnor.—Tyllwyd and Dolygarn Farms, 336 a. 1 r. 0 p., f. 5,015
Sunnybank, Bedw-llwydion, and Gwndwn holdings, 67 a. 3 r. 20 p., f. 914

By GARROD, TURNER, & SON (at Ipswich).

Hitcham, Suffolk.—Stanstead Hall Farm, 160 acres, f. (including the Manor or reputed Manor of Stanstead Hall) 2,625
Wood Farm, 110 acres, f. 1,375

By HUNT & PEDDER (at Ipswich).

Hitcham, Suffolk.—Ennals and Buggs Farms, 232 a. 1 r. 10 p., f. 3,430
Freehold Occupation, 30 a. 2 r. 37 p. 675
Residence, windmill, three houses, and 6 a. 1 r. 20 p., f. 780
Chelsworth, Suffolk.—The Bridge Farm, 68 a. 1 r. 10 p., f. and c. 760

By PEIRCE & THORPE (at Woodford, Halse).

Little Preston, Northants.—West Farm, 202 a. 3 r. 9 p., f. 4,722
Maidford, Northants.—Freehold pasture and woodland, 34 acres 750

By ESCRITT & BARRELL (at Gainsborough).

Misterton, Notts.—Freehold farm, 59 a. 1 r. 23 p. 1,600

By FRANKLIN & GALE (at Didcot).

East Hagbourne, Berks.—Hagbourne Mill Farm, 88 a. 2 r. 21 p., f. 2,500
Blewbury, Berks.—Freehold house, workshop, stable, and 1 a. 0 r. 20 p. 205
Spring cottage and 1 r. 33 p., f. 170
Eastbrook cottage and 3 r. 36 p., c. 500
Copyhold arable land, 11 a. 1 r. 18 p. 130
Upton, Berks.—Downs Farm, 178 a. 0 r. 30 p., f. 1,700
Four cottages and 1 a. 0 r. 6 p., f. 265

By J. C. PLATT (at Hammersmith).

Hammersmith.—31, 33, and 44, Mall-rd., u.t. 56 yrs., g.r. nil, y r. 124*l.* 1,375
Chiswick.—50 and 52, Wolseley-gdns., u.t. 82 yrs., g.r. 13*l.*, e.r. 60*l.* 250

By E. G. RIGHTON & SON (at Pershore).

Defford, Worcester.—Defford Bridge Farm, 148 acres, f. £7,440
Eckington, Worcester.—Freehold orchard, 1 acre 195

June 30.—By JOHN BOTT & SONS.

Finchley.—14, The Broadway (s.), u.t. 57 yrs., g.r. 8*l.*, y.r. 65*l.* 1,050
Sydenham.—26 and 32, Kent House-rd., f., w.r. 72*l.* 16s. 450

By DAVID BURNETT, SON, & BADDELEY.

Lambeth.—83, Vauxhall-st. (s.), f., y.r. 65*l.* 900
Sutton.—Carshalton-rd. (Hillside), f.g.r. 10*l.*, reversion in 68 yrs. 250
Hampton Court.—Hampton Court-rd., High Elms, u.t. 6 yrs., g.r. 14*l.*, y.r. 130*l.* 250

By CHARLES V. STEVENS & Co.

Meopham, Kent.—Harvel House and 38¼ a., f. 775

By HENRY HOLMES & Co.

Canonbury.—Spencer-st., i.g.r. 42*l.*, u.t. 9 yrs., g.r. 12*l.* 205
Eltham.—West-pk., i.g. rents 80*l.* 4s., u.t. 76 yrs., g.r. 17*l.* 1,260
Barnes.—Castlenau-row, i.g.r. 29*l.* 8s., u.t. 30 yrs., g.r. nil 400
Lee.—St. Mildred's-rd., i.g.r. 13*l.*, u.t. 83¼ yrs., g.r. 2*l.* 225
Camden Town.—Chalk Farm-rd., i.g.r. 76*l.*, u.t. 21¼ yrs., g.r. 10s. 800
Stockwell.—Stockwell-pk.-walk, i.g. rents 45*l.*, u.t. 30 yrs. g.r. 12*l.* 440
Paddington.—Craven-rd., i.g.r. 27*l.*, u.t. 28¼ yrs., g.r. 2*l.* 350
Sydenham.—East-ter., i.g. rents 30*l.*, u.t. 52 yrs., g.r. nil 545
Poplar.—Stebondale-st., i.g. rents 34*l.* 8s., u.t. 41¼ yrs., g.r. nil 348
Holloway.—Hornsey-st., i.g.r. 26*l.*, u.t. 59 yrs., g.r. 4*l.* 410
Tytherton-rd., i.g. rents. 52*l.*, u.t. 60¼ yrs., g.r. 4*l.* 875
Islington.—Richmond-rd. (Duke of Wellington p.h.), i.g.r. 70*l.*, u.t. 27 yrs., g.r. 10*l.* 510

By MOORE, GARRARD, & SON (at Eye).

Eye, Suffolk.—Brewery-la., freehold cottage and 3 r. 7 p. 400
Back-la., freehold cottage and smithy 390
Magdalen-st., freehold pasture land, 4 a. 0 r. 23 p. 240
Magdalen-st., three freehold cottages 180
Brome, Suffolk.—The Grange, three cottages and 32 a. 0 r. 35 p., f. 2,230
Thrandeston, Suffolk.—Freehold holding, 8 a. 1 r. 10 p. 290
Mellis, Suffolk.—The Post-office, seven houses and stabling, f. 620
Brockford, Suffolk.—Freehold shop, stabling, and 4 a. 3 r. 25 p. 275
Denham, Suffolk.—The Mill Farm, 11 a. 1 r. 32 p., f. 290
Bedingfield, Suffolk.—Freehold cottage and 6 a. 0 r. 9 p. 235

By DICKINSON, RIGGALL, & DAVY (at Louth).

North Somercotes, Lincs.—Poplar-gr. Farm, 110 a. 3 r. 7 p., f. 3,100
Cumberworth, Lincs.—Freehold pasture and arable land, 30 a. 3 r. 8 p. 910
Saltfleetby, Lincs.—Freehold farm, 50 a. 0 r. 20 p. 1,550

Digitized by Google

By ROBT. NEWMAN (at Bedfont).
Stanwell, Middx.—Stanwell Town Farm West, 100 acres, beneficial lease for 7 yrs. at 102*l*.. £700

By WARNER, SHEPPARD, & WADE (at Leicester).
Thorpe Satchville, Leicester.—Freehold farm, 117 a. 3 r. 16 p. 2,357
Queniborough, Leicester.—Freehold farm, 66 a. 2 r. 5 p. 2,665
Four enclosures of pasture land, 24 a. 3 r. 35 p. Markfield, Leicester.—Freehold larch spinney, 4 a. 2 r. 7 p. 699
Sileby, Leicester.—Belle Isle and Hanover Farm, 116 a. 2 r. 20 p. 123
1,961

July 1.—By ANSTEY & SONS.
East Ham.—68, York-rd., f., w.r. 23*l*. 8s. 190
Plaistow.—27, Selwyn-rd., f., e.r. 30*l*. 290
19, 21, and 41, Salmen-rd., f., w.r. 54*l*. 12s. 305
107, Howards-rd., f., e.r. 19*l*. 10s. 100
Willesden.—107, Church-rd. (s.), u.t. 74 yrs., g.r. 8*l*., y.r. 37*l*. 10s. 300

By FORTESCUE & BRANSON.
Hammersmith.—90 and 92, Masboro-rd., f., w.r. 52*l*. 450
Harrow.—73 and 75, Roxborough-rd., f., y.r. 31*l*. 520

By C. C. & T. MOORE.
Clerkenwell.—3 and 4, Great Bath-st. (s.), f., gross rental 163*l*. 1,000
Bethnal Green.—28 to 34 (even), Collingwood-st., f., rental 135*l*. 700
Willesden.—172, High-rd., f., y.r. 36*l*. 890
Stratford.—40, Cruickshank-rd., f., w.r. 23*l*. 8s. 145

By STIMSON & SONS.
Tottenham.—Tynemouth-rd., f.g. rents 54*l*., reversion in 96 yrs. 1,240
Islington.—Liverpool-rd., f.g.r. 7*l*. 13s., reversion in 9 yrs. 350
Sydenham.—22 and 24, High-st. (s.), f., y.r. 58*l*. 530
Thornton Heath.—238 and 240, Parchmore-rd., and plot of land, f. 480
Mitcham.—22 to 25, Tramway-ter., u.t. 71 yrs. g.r. 5*l*., w.r. 80*l*. 430
Shepherd's Bush.—442, Uxbridge-rd. (s.), f., yr. 70*l*. 910
Wimbledon.—1, Leopold-rd., u.t. 88 yrs., g.r. 10*l*. 10s., e.r. 80*l*. 475

By JOSEPH STOWER.
Camden Town.—29, Oakley-sq., u.t. 45 yrs., g.r. 24*l*., e.r. 100*l*. 400
9, Albert-st., u.t. 32 yrs., g.r. 6*l*. 10s., e.r. 50*l*. 350
Islington.—27, Wilton-sq., u.t. 16½ yrs., g.r. 4*l*., gross rental 67*l*. 12s. 100

By ROBERT NEWMAN (at Uxbridge).
Uxbridge.—7 and 8, Chapel-st., f., gross rental 33*l*. 10s. 400

July 2.—By EDWIN EVANS & SONS.
Whitechapel.—Glasshouse-st., Glasshouse-buildings, f., gross rental 300*l*. 1,600
Fulham.—Claybrook-rd., f.g.r. 20*l*., reversion in 82 yrs. 460
Tottenham.—1 to 4, Grotton-rd., u.t. 67 yrs., g.r. 12*l*., gross rental 101*l*. 450
20 to 23, Headcorn-rd., u.t. 70 yrs., g.r. 12*l*., gross rental 83*l*. 230
Gray's Inn-road.—60, Frederick-st., u.t. 13 yrs., g.r. 7*l*., y.r. 50*l*. 150

By ROBSON & PERRIN.
Sidcup.—Station-rd., freehold stabling, w.r. 18*l*. 155

By SAGE & HOPE.
Sydenham.—14 and 22, Kangley Park-rd., u.t. 62 yrs., g.r. 12*l*. 12s., w.r. 57*l*. 4s. 120

By SNELL & CO.
Maida Vale.—Portsdown-rd., Blomfield lodge, u.t. 28½ yrs., g.r. 15*l*., p. 250
Laleham, Middx.—Condor-rd., f.g.r. 15*l*., reversion in 79 yrs. 315
Vicarage-la., f.g. rents 55*l*. 18s., reversions in 89 yrs. 1,205

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	6	6	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	" delivered
Flettons	1	4	6	" at railway depôt.
Best Fareham Red	3	12	0	" " "
Best Red Pressed Ruabon Facing	5	0	0	" " "
Best Blue Pressed Staffordshire	3	15	0	" " "
Do. Bullnose	4	0	0	" " "
Best Stourbridge Fire Bricks	3	14	0	" " "
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "

BRICKS, &c. (*continued*).

	£	s.	d.	
GLAZED BRICKS (*continued*)—				
Splays and Squints	15	7	6	per 1000, deld. at rly. depôt.
Best Dipped Salt Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d.	per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d.		per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft. average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "

	s.	d.	
Ancaster in blocks	1	10	per ft. cube, deld. rly. depôt.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks	2	4	" "
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "
HARD YORK—			
Scappled random blocks	3	0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	13	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000, at rly. depôt.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—						
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	35	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
" " 3 in. by 9 in.	13	10	0	14	0	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
" " 3 in. by 9 in.	12	10	0	13	10	0
Battens	10	0	0	11	0	0
Pitch-pine: deals	18	0	0	21	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak logs—						
Large, per ft. cube	0	3	0	0	3	9
Small " "	0	2	6	0	2	6
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½
¾ in. do. do	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak per load	17	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0
Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. " "	0	14	0	0	18	0
¾ in. by 7 in. white " "	0	10	0	0	11	6
1 in. by 7 in. " "	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	10	0	0
Flitch Plates	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	8	10	0

METALS.

	Per ton, in London. £	s.	d.	£	s.	d.
IRON—						
Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars"	10	10	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
" " Galvanised	17	0	0	—		
(*And upwards, according to size and gauge.)						
Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0	—		
" " 24 g.	10	15	0	—		
" " 26 g.	12	5	0	—		
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	—		
Ordinary sizes to 22 g. and 24 g.	15	10	0	—		
" " 26 g.	14	10	0	—		

Digitized by Google

METALS (*continued*).

IRON (*continued*)—	Per ton, in London. £ s. d.	£ s. d.
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0 ...	—
" " 22 g. and 24 g.	18 10 0 ...	—
" " 26 g.	20 0 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0 ...	—
" " 22 g. and 24 g.	14 15 0 ...	—
" " 26 g.	16 5 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0 ...	—
" " " 26 g.	15 0 0 ...	—
Cut Nails, 3 in. to 6 in.	10 10 0 ...	11 0 0
(Under 3 in., usual trade extras.)		

LEAD, &c.	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up.	16 7 6 ...	—
Pipe in coils	16 17 6 ...	—
Soil pipe	18 17 6 ...	—
Compo pipe	19 17 6 ...	—
ZINC—Sheet—		
Vielle Montagne	26 10 0 ...	—
Silesian	26 5 0 ...	—
COPPER—		
Strong sheet per lb.	0 1 0 ...	—
Thin "	" 0 1 1 ...	—
Copper nails	" 0 0 10 ...	—
Copper wire	" 0 0 10 ...	—
BRASS—		
Strong Sheet	" 0 0 11 ...	—
Thin	" 0 1 0 ...	—
TIN—English Ingots	" 0 1 5 ...	—
SOLDER—Plumbers'	" 0 0 7 ...	—
Tinmen's	" 0 0 9½ ...	—
Blowpipe	" 0 1 0 ...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
3 oz. thirds	4½d. " "
" fourths	4¼d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz.	4¼d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
¼ "	2¾d. " "
¼ "	2¾d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 2
" " in barrels	"	0 2 3
" " in drums	"	0 2 6
Boiled " in barrels	"	0 2 6
" " in drums	"	0 2 9
Turpentine in barrels	"	0 2 9
" in drums	"	0 2 11
Genuine Ground English White Lead	per ton	20 10 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Plating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERAVON.—For alterations to Wern Congregational Chapel and erection of new schoolrooms, etc. Messrs. Evans & Jones, architects, Station-road, Port Talbot:—

S. T. Rees	£1,950 0 0
D. Davies & Son	1,775 0 0
Price Bros.	1,742 10 0
J. Nicholas	1,719 0 0
F. W. Foley	1,634 0 0
W. H. Evans	1,610 0 0
W. Williams	1,590 0 0
Anderson & Vaughan	1,580 12 10
J. Davies, Steam Saw Mills, Aberavon*	1,533 9 5

ABERCARN.—For Sunday-school premises, Garn Congregational Church. Mr. R. L. Roberts, architect, Abercarn, Mon. Quantities by architect:—

D. Davies & Sons	£2,472	0	0
J. Charles	2,225	0	0
A. & J. Richards	1,980	0	0
S. Edwards	1,978	0	0
G. F. Leadbeater	1,930	0	0
R. F. King & Co.	1,908	0	0
J. Jenkins, Ltd.	1,897	0	0
J. E. Jones	1,884	0	0
W. & D. Thomas	1,867	10	6
A. J. Colborne, Swindon*	1,745	0	0

ASHBY.—For colour washing and painting of Council schools, for the Ashby Council School Managers:—

Painter and Gilder: J. Grebby	£51	18	6
Painter and Decorator: E. Jackson	44	10	0
Builder and Painter: H. Kendall, 2, High-street, Ashby, Doncaster*	35	0	0

BARBY (Northants).—For alterations and additions at Barby School, for the Managers. Mr. J. T. Blackwell, architect, 53, High-street, Kettering:—

T. Heath, Ltd.	£630	0	0	R. W. Harris	£490	0 0
J. Winn & Son	626	2	5½	Beardsmore & West	484	0 0
J. Hollowell	549	0	0	A. J. Chown	470	0 0
R. Cleaver	530	0	0	C. W. Perkins	469	0 0
Bosworth & Wakeford	520	0	0	T. Adams & Son	468	10 0
W. W. Webster	518	0	0	T. Hickman	449	15 0
O. P. Drever	517	0	0	T. Higgs	429	0 0
Holland & Marks	498	5	3	J. H. Sargent, Barby*	415	0 0
E. Green	498	0	0			

BLAENAVON.—For 85 lineal yds. of reinforced concrete culvert, etc., on the British Paragon System (specified), for the Urban District Council. Mr. E. W. Edwards, Engineer and Surveyor, Council Offices, Lion-street Blaenavon:—

G. Morgan, Pontypridd*	£236 10 1

[Five tenders received.]

BRENTFORD.—For heating, etc., at the Infirmary Nurses' Home, for the Guardians. Mr. W. H. Ward, architect, Paradise-street, Birmingham:—

H. S. Simpson	£280 0 0
Dinning & Cooke	211 0 0
Reynolds & Co.	206 17 9
J. H. Nicholson & Co.	202 10 0
W. G. Cannon & Sons	197 15 0
Heating and Engineering Co.	196 0 0
Wenham & Waters	194 0 0
General Iron Foundry Co., Ltd.	193 7 0
J. C. Christie	190 0 0
Mackenzie & Moncur, Ltd.	188 14 0
J. T. May	184 0 0
Tilley Bros.	180 7 0
Davis, Bennett, & Co.	180 0 0
W. J. Burroughs & Sons	180 0 0
Brightside Foundry and Engineering Co., Ltd.	179 0 0
W. Lacey	177 0 0
Moorwood, Sons, & Co.	170 0 0
W. Freer	169 0 0
Rosser & Russell	165 0 0
Griffin Ironworks Co., Ltd.	162 10 0
C. G. Reed & Sons, Ltd.	161 5 8
Strode & Co.	159 0 0
W. J. Fryer & Co.	148 15 0
T. Poore & Son, Acton*	147 13 0
Watford Engineering Works	147 10 0

BROADSTAIRS.—For erecting small house, Knight's-avenue, Broadstairs, for Mr. H. A. Garnett. Mr. Leonard Dowton, architect, City Bank-chambers, Bedford-row, W.C., and Broadstairs:—

S. M. Stiff	£895	0	
W. H. Bowchin	890	0	
G. Minams	879	0	
A. Ross & Co.	748	0	
J. Rattray	737	0	
W. W. Martin	715	0	
R. S. Goodburn	£701	0	
G. H. Denne & Sons	696	0	
J. T. May	693	15	
E. G. Holbourn	678	0	
E. Brown, Broadstairs*	635	0	

CHATHAM.—For erecting a roof over a verandah at the Infirmary, for the Guardians of Medway Union. Mr. E. J. Hammond, architect, 21, Balmoral-road, Gillingham:—

A. Osborne	£59	10	6
E. Willmott	46	10	0
T. C. Bines	38	0	0
H. E. Phillips	38	0	0
J. W. Leach & Co.	37	10	0
West Bros.	£31	10	0
J. H. Biddlecombe, Gillingham*	21	10	8

CRYNANT.—For erecting a new church, for the Rev. J. D. James, Mr. J. Cook Rees, architect, Parade-chambers, Neath:—

H. Smith, Kidderminster	£2,697

DARWEN.—For alterations at Culvert School, for School Managers. Messrs. Sames & Green, architects, Knott-street, Darwen. Quantities by the architects:—

R. & W. Knowles	£611	0	
J. Knowles	594	0	
W. Edmundson & Son	593	0	
W. Livesey & Son	588	10	
J. Westwell	£560	14	10
T. Lightbown, Darwen*	552	0	0
Marsh & Fretwell	549	0	0

DONYATT (Somersetshire).—For rebuilding Donyatt Bridge, for the County Works Committee of the Somerset County Council:—

R. G. Spiller, Chard*	£519

EASTBOURNE.—For private improvement works, passages at the rear of Manifold-road, Firle-road, Belmore-road, and Sidney-road, for the Highways Committee. Mr. A. Ernest Prescott, Borough Surveyor, Town Hall, Eastbourne:—

A. Hudson	£102	10	0
M. Hookham	79	5	0
J. Vine, Eastbourne*	£77	11	6
Gibbons Bros.	75	0	0

EDMONTON.—New secondary school for boys, Latymer Foundations. Mr. H. G. Crothall, Architect to the Middlesex Education Committee:—

W. Johnson & Co., Ltd.	£8,083		
Brand, Pettitt, & Co.	7,700		
L. & W. H. Patman	7,690		
Rowley Bros.	7,571		
Mattock Bros.	7,490		
A. Fairhead & Son	7,344		
W. J. Renshaw	£7,333		
A. Porter	7,275		
J. Stewart	7,232		
Treasure & Son, Ltd.	7,079		
Knight & Son	6,945		
W. Lawrence & Son‡	6,782		

‡ Recommended for acceptance.

ENFIELD.—For preparation of site and construction of foundations, etc., for a pumping-station in Hadley-road, for the Metropolitan Water Board:—

A. N. Coles	£4,765		
Mattock & Parsons	3,873		
T. W. Pedrette	3,761		
J. Byrom, Ltd.	3,710		
R. McAlpine & Sons	3,608		
W. Muirhead & Co.	3,461		
G. Shellabear & Son	3,530		
J. Mowlem & Co., Ltd.	3,435		
S. Kavanagh & Co.	3,221		
W. Lawrence & Son	3,032		
E. Bentley & Sons	3,015		
Dick, Kerr, & Co., Ltd.	3,002		
W. Pattinson & Sons, Ltd.	2,851		
Kirk & Randall	2,841		
R. C. Brebner & Co.	2,816		
C. Wall, Ltd.	£2,802		
Newby & Bros.	2,800		
A. Fairhead & Son	2,758		
Holloway Bros. (London), Ltd.	2,713		
W. Moss & Sons, Ltd.	2,640		
Fitch & Cox	2,618		
J. Moran & Son, Ltd.	2,563		
A. E. Nunn & Co., Ltd.	2,522		
W. Rigby	2,478		
H. M. Nowell	2,423		
B. E. Nightingale	2,337		
D. R. Paterson, Ltd.	2,292		
T. J. Hawkins & Co., 109, Victoria-street, S.W.*	2,184		

EYE.—For water supply works, for Peterborough Rural District Council:—

Staveley Iron Co.	£1,590	14	9
Nunn & Co., Ltd.	1,574	1	6
Mitchell & Son	1,519	2	10
J. Clarke	1,509	16	1
F. Smith & Co., Ltd.	1,478	6	4
J. May	1,459	10	3
A. Jewell	1,433	4	10
W. G. Wilmot	1,417	8	4
H. Ashley	1,414	14	6
W. H. Hill	1,383	3	8
W. Pattinson & Son	1,366	11	11
R. C. Brebner & Co.	1,356	0	7
Wickstead & Beardsell	1,348	7	11
Langley & Westmoreland	1,343	4	3
A. Sykes	1,320	0	0
Kettle & Son	1,310	2	9
A. Bull*	1,222	9	3

FENTON.—For works at schools, for the Education Committee of Fenton. Mr. S. B. Ashworth, architect, Old Bank Chambers, Stoke-upon-Trent:—

—	Painting Queen-street, Schools. £ s. d.	Painting St. Mary's Schools. £ s. d.	Cookery School. £ s. d.
Peake Bros.	95 0 0	23 10 0	8 10 0
A. Harper	82 10 0	17 10 0	*6 15 0
T. Thomas	98 0 0	*15 10 0	6 10 0
G. Shaw	*72 0 0	—	—
G. Tunnicliffe	—	25 14 6	—
W. A. Hales	83 15 0	17 15 9	6 19 6
S. Peake & Sons	78 16 4	25 11 0	8 18 0
T. Hughes	79 10 0	19 15 0	14 10 0

FINCHLEY.—For sewage disposal works, for the Urban District Council:—

O. T. Gibbons, Leytonstone*	£4,698

GUILDFORD.—For erecting a receiving home for children on land adjoining the Union Workhouse, for the Guardians. Mr. E. L. Lunn, architect, 36, High-street, Guildford:—

Drowley & Co., Woking‡	£2,765

‡ Accepted subject to consent of Local Government Board.

HALESOWEN.—For sewering works in Tenter-street and Wright-street, for the Rural District Council. Mr. F. Aldred, Surveyor, Council Offices, Halesowen.

E. Hadley & Sons	£178	12	6
W. Thorpe	178	5	0
J. T. Abbiss	165	7	6
J. A. Meredith	164	2	8
J. M. Tate	162	12	0
T. J. Mason	154	5	0
A. Bucknall	£152	4	1
A. Timmins	143	7	0
A. Hill & Co.	137	14	0
R. Harris & Son	137	13	0
J. Taylor & Co., High-street, Blackheath*	125	0	0

HANLEY.—For private street improvements (Contract No. 399, back Eaton-street South; Contract No. 400, back Birches, Head-road South; Contract No. 401, back Campbell-terrace West; Contract No. 402, back Bradford-terrace West; Contract No. 403, back Woodhead-road North; Contract No. 404, passage off Elizabeth-street), for the Corporation. Mr. J. Lobley, Borough Engineer and Surveyor, Town Hall, Hanley. Quantities by the Borough Surveyor:—

J. Taylor & Son	£569		
A. Bullock	541		
A. T. Brown	540		
F. Barke	525		
Saunders & Torrance	£513		
W. Bullock	498		
W. Williams, Etruria, Hanley*	488		

HEATON MOOR.—For a span greenhouse, etc., at the Recreation Ground, for Heaton Norris Urban District Council:—

David Lowe & Sons, Cornbrook, Manchester*	£165

LITTLEHAMPTON.—For a shelter hall on the Green, for the Urban District Council. Mr. H. Howard, Surveyor, Town Offices, Littlehampton:—

E. Hill	£1,576	17	
T. Smith	1,490	0	
Hockley & Co.	1,476	0	
Linfield & Sons, Ltd.	1,448	0	
W. Wallis, Ltd., Littlehampton*	£1,197	0	

[Surveyor's estimate, £1,500.]

LITTLE THURROCK.—For building an organ chamber at St. Mary the Virgin, Little Thurrock, Essex. Mr. Christopher M. Shiner, A.R.I.B.A., architect, 10, John-street, Adelphi, W.C.:—

G. Brown	£145		
Brown Bros.	135		
Hammond & Son	£129		
H. J. Carter*	112		

LLANWRTYD WELLS.—For erection of hotel and alterations and additions to premises, for Mr. J. T. Evans, J.P. Mr. Alfred Swash, F.R.I.B.A., Midland Bank-chambers, Newport, Mon., and Llandrindod Wells:—

Turford & Southward, Ludlow, Salop*	£7,890

[Eight tenders were sent in.]

Digitized by Google

LONDON.—For the construction of a home on the Asylum Estate for the accommodation of thirty-eight nurses, for the Visiting Committee, City of London Asylum:—

N. Lidstone	£8,679	W. Johnson & Co., Ltd.	£7,399
J. Mowlem & Co., Ltd.	8,325	Holloway Bros., Ltd.	7,300
Ashby Bros.	7,769	Jarvis & Sons	7,180
Kilby & Gayford, Ltd.	7,748	J. Lonsdale	7,076
T. Knight & Co.	7,547	Moss & Sons, Ltd.	7,061
J. Greenwood, Ltd.	7,417	Sheffield Bros.‡	6,195

‡ Accepted with certain minor alterations and omissions, reducing the amount to £5,750.

LONDON.—For repaving with asphalt roadways in Leadenhall Market and approaches, for the Corporation:—

French Asphalte Co.	£518 12 0
London Asphalte Co.	483 5 6
Limmer Asphalte Co.	480 0 0
Val de Travers Asphalte Co.*	467 1 2

LONDON.—For new school, Torriano-avenue, St. Pancras, E., for the London County Council:—

Spencer, Santo, & Co.	£14,758 0 0
Leslie & Co., Ltd.	14,056 0 0
Patman & Fotheringham, Ltd.	13,671 0 0
W. Johnson & Co., Ltd.	13,465 0 0
J. Smith & Sons, Ltd.	13,442 0 0
McLaughlin & Harvey, Ltd.	13,192 4 7
McCormick & Sons	13,063 0 0
L. H. & R. Roberts	13,020 0 0
G. Godson & Sons	12,987 0 0
Treasure & Son, Ltd.	12,951 0 0
C. F. Kearley	12,893 0 0
J. Chessum & Sons, 7A, South-place*	12,648 5 3
E. Lawrance & Sons	12,530 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £13,154.]

LONDON.—For electric lighting Great Marlborough-street fire-station, for the London County Council:—

A. Hawkins & Sons	£210 0 0
W. J. Fryer & Co.	194 0 0
Tredegar & Co.	182 0 9
Pinching & Walton	169 7 6
G. E. Taylor & Co., 8, Bush-lane, E.C.*	169 0 0

[The Chief Engineer's estimate of the cost of the work was £207.]

LONDON.—For construction of authorised tramways along the Victoria-embankment east of John Carpenter-street, Blackfriars-road, and Southwark-street—Tenders for roadwork, etc., for the London County Council:—

J. Mowlem & Co., Ltd.	£14,707 0 0
W. Manders	13,598 13 10
A. N. Coles	12,945 5 5
Dick, Kerr, & Co., Ltd., Abchurch-yard, E.C.*	12,055 4 5
R. C. Brebner & Co.	11,420 6 0

[The Chief Engineer's estimate, comparable with the tenders, is £11,954 8s. 4d.]

LONDON.—For improvements, York-road, Islington, W., for the London County Council:—

C. R. Price	£11,366 0 0
J. Marsland & Sons	11,364 19 4
McCormick & Sons	10,987 0 0
G. S. S. Williams & Son	10,960 0 0
Treasure & Son, Ltd.	10,930 0 0
G. E. Wallis & Sons, Ltd.	10,889 0 0
W. Downs	10,828 0 0
J. & M. Patrick	10,669 0 0
Lole & Co.	10,519 0 0
Patman & Fotheringham, Ltd.	10,486 0 0
McLaughlin & Harvey, Ltd.	10,418 12 3
C. F. Kearley	10,261 0 0
L. H. & R. Roberts	10,234 0 0
G. Godson & Sons	10,221 0 0
E. Lawrance & Sons	9,845 0 0
C. P. Roberts & Co., 138, St. Paul's-road, Highbury*	9,839 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £10,200.]

LONDON.—For improvements, Atley-road, Bow and Bromley, for the London County Council:—

G. Parker & Sons	£13,388 0 0
Thomas & Edge	12,896 0 0
Spencer, Santo, & Co., Ltd.	12,746 0 0
Perry & Co. (Bow), Ltd.	12,570 0 0
F. & E. Davey, Ltd.	12,155 0 0
W. Harris	12,137 0 0
Patman & Fotheringham, Ltd.	11,921 0 0
A. E. Symes	11,906 0 0
J. & C. Bowyer, Ltd.	11,728 0 0
F. & T. Thorne	11,627 0 0
E. Lawrance & Sons	11,332 0 0
J. Chessum & Sons, 7A, South-place‡	10,981 19 2

‡ Recommended.

[The estimate of the Architect (Education), comparable with the tenders, is £11,500.]

LONDON.—For heating school, Scawfell-street, Haggerston, for the London County Council:—

Pemberton, Arber, & Carey*	£280 16 0

LONDON.—For steam, etc., piping, valves, water-tanks, etc., Greenwich Generating Station (final portion), for the London County Council:—

E. le Bas & Co.	£8,495 2 5
Babcock & Wilcox, Ltd.	8,400 0 0
J. Spencer, Ltd.	8,291 7 11
Stewarts & Lloyds, Ltd.	8,232 9 8
Foster Bros., Ltd.	8,168 12 0
J. Oakes & Co.	8,002 19 0
S. Russell & Sons	7,954 9 6
Shelby Manufacturing Co.	7,733 13 3
Staveley Coal and Iron Co., Ltd. (ii).	7,566 7 2
Railway and General Engineering Co., Ltd.	7,342 13 1
Staveley Coal and Iron Co., Ltd., Chesterfield (i).*	7,066 7 2

[The estimate of the Chief Officer of Tramways, comparable with the tenders, is £9,000.]

LONDON.—For electric lighting, the Oliver Goldsmith School, Peckham, for the London County Council:—

R. Bridger & Co.	£135 8 0

LONDON.—For additional conveniences, Myatt's-fields, for the London County Council:—

R. A. Lowe & Co.	£188 0	J. Barker & Co., Ltd., 83, Kensington High-street, W*	£100 10
A. & F. Polden	142 10		
F. & G. Foster	123 0		
H. Line	105 15		

LONDON.—For condenser water-piping, valves, etc. for Greenwich Generating Station (final portion), for the London County Council:—

S. Russell & Sons	£3,236 18 0
J. Wilson & Co.	3,183 18 2
J. Oakes & Co.	3,092 18 0
J. Spencer, Ltd.	3,064 5 8
Staveley Coal and Iron Co.	3,024 15 4
Railway and General Engineering Co., Ltd., Nottingham*	2,986 14 6
Foster Bros., Ltd.	2,617 0 0

[The estimate of the Chief Officer of Tramways, comparable with the tenders, is £3,500.]

LONDON.—For carrying-out the reinstatement of the sacristy walls, boundary walls, and lavatory walls, extended foundations to same, etc., at St. Patrick's Church, Wapping, E. Messrs. Gordon Wilson & Co., architects, 667, Fulham-road, S.W.:—

J. Pritchard & Son	£200	Hicks & Co.	£169
M. Calnan & Son	174		

LONDON.—For St. Mary's Hospital, Plaistow, E. Mr. Alfred Saxon Snell, architect, 22, Southampton-buildings, Chancery-lane, W.C.:—

Sheffield Bros.	£17,451 0 0
Turtle & Appleton	16,335 0 0
Harris & Wardrop	15,992 0 0
Thomas & Edge	15,946 0 0
A. E. Symes	15,928 0 0
Mattocks & Pasons	15,847 0 0
Brown Bros.	15,812 12 10
Higgs & Hill	15,794 0 0
J. W. Jerram	15,700 0 0
Kirk & Randall	15,320 0 0
J. T. Luton	15,287 0 0
W. J. Maddison	14,919 0 0
H. Kent	14,912 0 0
T. W. Moss	14,862 5 0
B. E. Nightingale	14,798 0 0
W. J. Fryer	14,471 0 0
F. G. Minter	14,433 0 0
J. Allen & Sons	14,420 0 0
Spencer, Santo, Co.	14,390 0 0
F. & E. Davey, Ltd*	14,337 1 11

LONDON.—Accepted for paving works, for the Corporation:—

Asphalt Carriageways.

	French Asphalte Co., Ltd.	London Asphalte Co., Ltd.
Crutched Friars (part of)	£792 16 3	—
Hart-street	252 4 6	—
Bartholomew-close	—	‡£532 5 3

‡ Including credit of 3d. per square yard in respect of removal of existing stone.

Asphalt Carriageways (Repaving).

	French Asphalte Co., Ltd.
Gresham-street	£2,540 18 0
Old Bailey (centre portion)	397 6 6
Barbican	1,419 12 0
Well-street	284 1 0

Asphalt Footways.

	French Asphalte Co., Ltd.	London Asphalte Co., Ltd.
Wrestler's-court	—	£35 7 6
Clark's-place	—	47 3 0
Aldgate High-street (north side)	—	195 10 8
Bengal-court	£28 6 8	—
Eastcheap (Fish-street-hill to King William-street)	—	56 1 4
Plough-court, Lombard-street	68 4 2	—
Plough-court, Fetter-lane	137 10 2	—
St. Benet's-place	15 18 9	—
Gresham-street (north-side, Aldermanbury to Aldersgate)	168 5 0	—
Watling-street	201 2 6	—
Evangelist-court	—	35 17 6
Crown-court, Fleet-street	19 4 4	—
Fleur de Lis-court, Fetter-lane	56 7 6	—
Old Bailey	131 2 0	—
Trinity Church-passage, Fetter-lane	58 1 6	—

Wood Carriageways.

	Improved Wood Pavement Co., Ltd.
Crutched Friars (part of)	£357 0 10
Great Swan-alley (lower portion)	89 14 0
Well-court, Queen-street	66 0 0
Castle-court, Lawrence-lane	49 6 2
St. Andrew's-hill (lower portion)	104 2 6

Granite Carriageways.

	J. Mowlem & Co., Ltd.
Botolph-lane	£180 0 0
Monument-street	519 0 0
Monument-square	229 0 0
High Timber-street	101 0 0
St. Dunstan's-hill	133 0 0

MAIDSTONE.—For two new classrooms at the Boys' Grammar School, Tonbridge-road, for the Governors. Mr. T. F. Bunting, Borough Surveyor, Maidstone. Quantities by Messrs. Leaning & Sons:—

Martin & Newman	£955 0	G. Pearce & Sons	£830 0
Corben & Co.	893 0	Clarke & Epps	829 0
Ansett & Son	873 0	G. E. Wallis & Sons, Ltd.	827 0
H. J. Smith & Son	871 8	Gray & Barney	808 0
H. Cruttenden	866 0	Elmore & Son*	790 0
Cox Bros.	849 0	Sellick & Son	750 0
W. T. Burrows	848 0		
Barden & Head	840 0		

[All of Maidstone.]

MERTHYR VALE.—For asphalting school playground, for the Education Committee. Mr. J. Llewellin Smith, architect:—

E. Bradshaw & Son, Cardiff	£353 10 4

[Seven tenders.]

MERTON.—For making-up Claremont-avenue, Richmond-avenue, and Station-road, for the Urban District Council. Mr. G. Jerram, Surveyor, Council Offices, Merton:—

J. Mowlem & Co.	£1,940 13 10
T. Free & Sons, Ltd.	1,842 10 0
H. M. Blaker	1,841 19 0
R. Dykes	1,667 0 0
T. Adams	1,621 0 0
E. & E. Iles, 54, North-road, Wimbledon*	1,530 0 0
S. Lane & Co.‡	1,086 7 0

‡ Claremont-avenue not tendered for.

NORTHAMPTON.—For the granolithic paving of a cattle-pen at the Cattle Market, for the Corporation. Mr. Alfred Fidler, M.Inst.C.E., Borough Engineer, Guildhall, Northampton:—

A. A. Clarke, Waterloo, Northampton	£299

PENGAM.—For erecting fifteen houses, for the Pengam Building Club. Mr. H. Gabe Jones, architect and surveyor, Hengoed:—

E. D. W. Evans	£208 16	R. Forsyth	£168 0
Burns	174 10	Vodden & Lee, Pengam*	160 0
D. & T. Jones	170 0	W. Costlett	157 0
E. T. Davies	170 0		

PLYMOUTH.—For alterations and additions to 14, Frankfort-street, for Messrs. Underhill & Co. Messrs. Hine, Odgers, & May, architects, 23, Lockyer-street, Plymouth:—

		Credit for Old Materials.
A. Andrews	£1,540	£50
W. T. Stevenson	1,395	100
F. S. Stanbury	1,372	28
J. Paynter	1,349	6
Pearn Bros.	1,320	25
J. B. Turpin*	1,294	35

PURLEY.—For building St. Mark's Church, Woodcote. Mr. Geo. H. Fellowes Prynne, F.R.I.B.A., architect, 6, Queen Anne's-gate, Westminster, S.W. Quantities by Mr. R. Henry Hale, F.S.I., of 6, Queen Anne's-gate, Westminster, S.W.:—

C. Ansell & Co.	£10,034 0 0
J. Thompson & Co.	9,253 0 0
W. J. Dickens	9,080 0 0
Benfield & Loxley	8,926 0 0
D. Stewart & Sons	8,918 0 0
E. J. Saunders	8,527 0 0
A. Monk	8,514 13 7
Bowman & Sons	8,522 9 3
J. & C. Bowyer	8,490 0 0
Crossley & Sons	8,357 0 0
Goddard & Sons	8,290 0 0
J. Jarvis & Sons	8,248 0 0
G. H. Denne & Co.	8,210 0 0
Wallis & Sons	8,132 0 0
R. A. Lowe & Co.	8,098 0 0
Dove Bros.	8,083 11 0
J. Longley & Co.	8,045 0 0
Holloway Bros.	7,988 0 0
R. Wilkins & Sons, Bristol*	7,974 7 1

REDHILL.—For erecting an elementary school at St. John's, for Reigate Education Committee. Messrs. T. R. & V. Hooper, architects, Market Hall, Redhill:—

W. Dodd & Co.	£9,700	E. Worssell	£6,936
McCormish & Sons	7,618	F. & G. Foster	6,927
T. Higgs	7,600	S. E. Moss & Co.	6,900
A. Peskett & Co.	7,390	Spencer, Santo, & Co.	6,850
G. H. Denne & Son	7,350	Peerless Dennis & Co.	6,827
T. J. Hawkins & Co.	7,186	W. Wallis, Ltd.	6,800
J. J. Pink	7,168	J. A. Davison	6,723
R. A. Lowe & Co.	7,166	G. Martin	6,690
C. Hale & Co.	7,107	Crosby & Co., Farnham*	6,620
Drowley & Co.	7,053	R. & E. Evans	6,534
McC. E. Fitt	6,939		
R. Cook & Sons	6,980		
Cæsar Bros.	6,978		

SALTASH.—For converting the space under the Guildhall into two committee-rooms, for the Corporation. Mr. W. W. Harvey, Borough Surveyor:—

W. H. Rothery, Saltash*	£139 10 0

SEVEN SISTERS.—For erecting new church at Seven Sisters, Neath:—

E. Thomas & Sons, Seven Sisters, Neath	£6,600

SILSDEN.—For enlargement of water mains, for the Urban District Council. Mr. H. Longbottom, Surveyor, Town Hall, Silsden:—

Rhodes Bros.	£1,573 0 0
J. Merritt & Co.	1,293 0 0
Staveley Coal and Iron Co.	1,026 0 0
W. Jowett	1,005 0 0
J. Robinson	945 0 0
Davis, Ball, & Co.	914 9 8
W. Baker	890 0 0
F. Mitchell & Sons	872 0 0
Clapham Bros.	858 10 0
F. B. Rothera	828 0 0
W. Morley & Sons	817 0 0
W. H. Raper	803 0 0
Coope & Flannery	796 0 0
T. Egan & Sons	779 0 0
H. Spencer, Kirkgate, Silsden*	770 0 0

SKEGNESS.—For erection of new house, Drummond-road, for Mr. F. Hall. Mr. W. Brandreth Savidge, A.R.I.B.A., King-street, Nottingham:—

W. Fletcher & Son	£829
J. Crawshaw, Skegness*	790

SURBITON.—For private street improvement works at Guilford-avenue, for the Urban District Council. Mr. H. T. Mather, Engineer and Surveyor, Council Offices, Ewell-road, Surbiton:—

T. Free & Sons, Ltd., Maidenhead*	£1,354 10 10

Digitized by Google

SWANWICK.—For sewage disposal works at Sewage Farm, for Alfreton Urban District Council. Mr. R. F. Ward, surveyor, King-street, Alfreton. Quantities by surveyor:—

H. H. Barry	£361 4 2	G. Brentnall	£268 10 0
Hawley & Son	329 0 0	Evans Bros., Alfreton*	255 0 0
Cox & Co	296 13 0	J. Lane‡	230 8 4
W. W. Bateman	283 3 9		

‡ Withdrawn.

TAUNTON.—For painting, etc., of Tone Bridge, for the Town Council. Mr. D. Edwards, A.M.Inst.C.E., Borough Surveyor, Municipal Buildings, Taunton:—

Serle & Sons	£81 0 0	W. Vickery	£44 15 0
Stansell & Sons	56 10 0	H. M. Ward	46 12 6
Boalch & Shuttock	49 15 0	Hartnell & Son	30 10 0

[All of Taunton.]

TILBURY.—For seating a portion of the Church of St. John's. Mr. Christopher M. Shiner, A.R.I.B.A., architect, 10, John-street, Adelphi, W.C.:—

Hibberd Bros. £58 10 0

TOOTING.—For fencing at the Lambeth Cemetery, Blackshaw-road, for Lambeth Borough Council. Mr. H. Edwards, C.E., Borough Engineer, Town Hall, Brixton-hill, S.W.:—

Phœnix Art Metal Engineering Co., Ltd.	£640 0 0
S. Wright	365 8 0
J. Jones & Sons	340 0 0
A. W. Elwood	298 10 0
Hill & Smith	274 0 0
Bayliss, Jones, & Bayliss, Ltd.	255 0 0
J. Stone (S. W. Goosey, Successor)	247 10 0
J. Elwell‡	243 12 0
W. Miller & Sons	229 17 6
M. McVey	229 15 9
W. Hayward & Sons, Ltd.	220 0 0
T. W. Palmer & Co., Merton Abbey Iron Works, Church-road, Merton, S.W.*	195 0 0

‡ Work done at Birmingham is piecework.

TOTTENHAM.—For erection of cottages on the Tower-gardens section White Hart-lane Estate, for the London County Council:—

C. Wall, Ltd.	£26,550	G. H. Carter	£22,247
F. & T. Thorne	25,589	F. J. Coxhead	20,692
A. Roberts & Co., Ltd.	24 899	Rowley Bros., Tottenham‡	19,343
G. E. Wallis & Sons, Ltd.	24,240	A. Monk	17,400

‡ Recommended for acceptance.

[The Architect's estimate, comparable with the tenders, is £20,321.]

WARMINSTER.—For pumping plant at Crockerton, for the Urban District Council. Mr. C. H. Lawton, Engineer, Urban District Council, Warminster:—

J. W. Titt, Woodcock Ironworks, Warminster* £8,601

[A Tangye 35-b.h.p. engine and a Daniel's high-speed pump.]

[Thirteen tenders received.]

WEMBLEY.—For additions to public offices and fire-station, for the Urban District Council. Mr. Cecil R. W. Chapman, Surveyor, Public Offices, Wembley:—

E. Cakebread & Co.	£1,352 1 5
F. G. Minter	1,148 0 0
F. Tribe & Co.	990 0 0
J. Allen & Sons, Ltd.	975 0 0
J. & W. Pink	975 0 0
Parfitt & Co.	966 0 0
F. & G. Foster	960 0 0
J. Bachelor	950 0 0
W. Evans & Sons	947 0 0
J. Barker & Co., Ltd.	944 0 0
J. Smith	941 4 4
B. E. Nightingale	937 0 0
W. G. Stone	927 2 5
Spencer, Santo, & Co.	905 0 0
W. Gibson & Co.	894 0 0
G. H. Gibson & Son	886 0 0
W. & D. Wilkins	865 0 0
H. Haynes, Alperton*	859 13 8

WEMBLEY.—For making-up of St. John's-road (portion), for the Urban District Council. Mr. Cecil R. W. Chapman, Surveyor, Public Offices, Wembley:—

J. Young	Croft stone, etc.	£1,886 0 0
S. Kavanagh	Atlas stone, etc.	1,605 0 0
Wilson, Border, & Co.	Croft, etc.	1 591 9 8
Willis & Powis	Croft stone, etc.	1,374 18 1
T. Adams	Croft stone, etc.	1,344 14 0
T. Adams	Cliffe stone, etc.	1,344 14 0
T. Adams	Atlas stone, etc.	1,327 13 6
Davies, Ball, & Co.	Croft, etc.	1,343 15 9
T. Free & Sons	Excelsior, etc.	1,325 6 9
W. & C. French	Croft stone, etc.	1,310 0 0
W. & C. French	Excelsior	1,288 0 0
W. & C. French	Atlas	1,283 0 0
F. G. Brummel	Croft stone, etc.	1,293 12 8
F. G. Brummel	Ellis	1,276 12 2
F. G. Brummel	Excelsior	1 268 1 11
F. G. Brummel	Atlas	1,262 8 5
E. Parry & Co.	Croft stone, etc.	1,258 0 0
E. Parry & Co.	Atlas	1,251 0 0
E. Parry & Co.	Aberdeen	1,244 12 9
O. T. Gibbons	Croft stone, etc.	1,263 9 0
Champniss & Co.	Excelsior	1,228 15 0
Clark & Co., Edgware*	Croft stone, etc.	1,212 14 1

WREXHAM.—For surface-water drainage in Poyser-street, for the Corporation. Mr. J. England, C.E., Borough Engineer, Willow-road, Wrexham:—

H. C. Davies, Lord-street, Wrexham*.. £34 13 0

WREXHAM.—For the construction of conveniences in Market-street and Crescent-road, for the Corporation. Mr. J. England, Borough Engineer, Willow-road, Wrexham:—

Market-street Convenience.

H. C. Davies, Lord-street, Wrexham*.. £49 10 10

Crescent-road Convenience.

H. C. Davies, Lord-street, Wrexham*.. £41 18 3

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS.
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

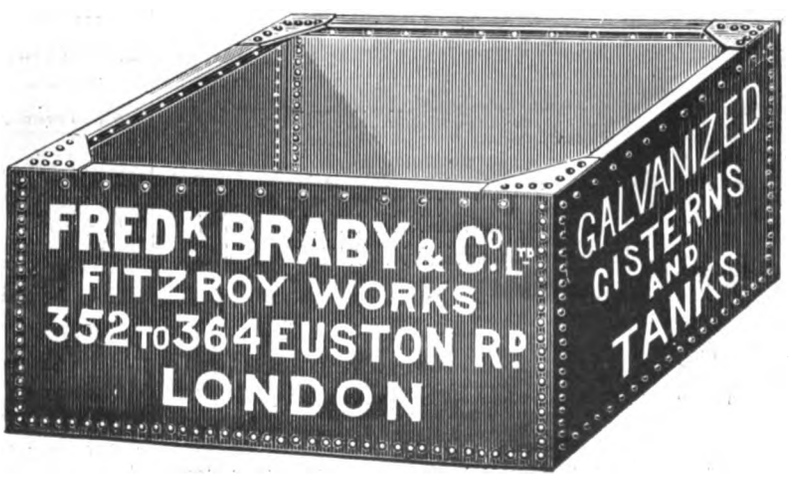
Telephone: DALSTON 1388.
OGILVIE & Co.
(Many years connected with W. H. Lascelles & Co., Ltd., of Bunhill-row).
Amhurst Works, DALSTON LANE, N.E.
Experts in High-class Joinery, Alterations, and Decorations.
ESTIMATES SUBMITTED.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co.,
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company,
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone Nos. 511 and 831 Deptford.
Registered Trade Mark.
Polonceau Asphalte.
PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE,
WHITE SILICA PAVING
SEYSSEL ASPHALTE (*Direct from the Mines*).

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor,
Oakeley-Portmadoc.
BEST WORK ONLY.
"RUSTIC BROWN"
Roofing Tiles a Speciality.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

ALSO AT DEPTFORD, LIVERPOOL, BRISTOL,



GLASGOW, FALKIRK, BELFAST, & DUBLIN.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3467. JULY 17, 1909.

Contents.

	PAGE
RECENT EXCAVATIONS IN MALTA	59
NOTES	60
LIBRARY COMPETITION FOR LISCARD, CHESHIRE	62
EXHIBITION OF STUDENTS' WORK AT THE LONDON COUNTY COUNCIL CENTRAL SCHOOL OF ARTS AND CRAFTS	62
DISCONNECTING TRAPS	63
SKETCHES AT THE EGYPTIAN EXHIBITION, UNIVERSITY COLLEGE	64
TOWN PLANNING	64
NOTES FROM FRANCE	66
SOME QUESTIONS AND ANSWERS ABOUT LIME	66
STEEL SKELETON FRAMEWORK AND FERRO-CONCRETE STRUCTURES IN LONDON	66
ABBOT BERRE'S ALMSHOUSE, GLASTONBURY	67
THE INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS	68
THE ARCHITECTS' TECHNICAL BUREAU	69
SCHOOL OF ARCHITECTURE, UNIVERSITY OF LIVERPOOL	69
THE LONDON COUNTY COUNCIL	69
APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1908	70
MESSRS. DOULTON'S INSPECTION YARD GULLIES	70
LONDON COUNTY COUNCIL EDUCATION COMMITTEE	70
PUBLIC ABATTOIRS	71
LONDON DRAINAGE BY-LAWS	71
MEETINGS	72
FIFTY YEARS AGO	72
ILLUSTRATIONS:—	
"DAWN HOUSE," WINCHESTER	72
"LUCKLEY," WOKINGHAM	72
HOUSE AT DUNSLEY	73
DESIGN FOR A FOUNTAIN FOR A PUBLIC PARK	73
COMPETITION NEWS	74
TRADE CATALOGUES	74
BOOKS RECEIVED	74
CORRESPONDENCE:—	
"A DIPLOMA COURSE IN ARCHITECTURE"	74
MIDDLESBROUGH LIBRARY COMPETITION	74
ARCHITECTURAL COPYRIGHT AND PROFESSIONAL ETIQUETTE	74
THE SERPENTINE	74
PROJECTED NEW BUILDINGS IN THE PROVINCES	74
WESTMINSTER CITY COUNCIL	75
LONDON AND DISTRICT BOROUGH COUNCILS	75
OBITUARY	76
GENERAL BUILDING NEWS	76
APPOINTMENT	78
SANITARY AND ENGINEERING NEWS	78
MISCELLANEOUS	78
CAPITAL AND LABOUR	79
PATENTS	79
SOME RECENT SALES	79
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	80
PRICES CURRENT	84
TENDERS	85

SUPPLEMENT:—

REVIEWS OF BOOKS.

A. K. Porter's "Mediæval Architecture"; H. M. Cundall's "A History of British Watercolour Painting"; L. F. Day's "Nature and Ornament. I. Nature: The Raw Material of Design"; "Memorials of Old Middlesex"; "The Concrete Institute: Transactions and Notes," Vol. I., Part 2; "Hennebique Ferro-Concrete: Theory and Practice," Part 1; H. O'Connor's "Petrol Air-Gas"; "The Encyclopædia of Practical Engineering," Vol. IX.; H. Walker's "Stamford with its Surroundings."

MAGAZINES AND REVIEWS.

Illustrations.

"DAWN HOUSE," WINCHESTER; AND "LUCKLEY," WOKINGHAM. MR. ERNEST NEWTON, F.R.I.B.A., ARCHITECT.

"DUNSLEY," NEAR WHITBY. MESSRS. YOUNG & HALL, ARCHITECTS.

BUILDER FOUNTAIN COMPETITION, SECOND PRIZE DESIGN (PERSPECTIVE VIEW, ELEVATION, PLAN AND DETAILS). BY MR. HARRY B. LAYCOCK.

Illustrations in Text.

	PAGE
SKETCHES AT THE EGYPTIAN EXHIBITION, UNIVERSITY COLLEGE	64
ABBOT BERRE'S ALMSHOUSE, GLASTONBURY	67
"DAWN HOUSE," WINCHESTER. PLAN	72
HOUSE AT WOKINGHAM. GROUND PLAN. ERNEST NEWTON, ARCHITECT	73
HOUSE AT DUNSLEY, NEAR WHITBY, YORKSHIRE. ALTERATIONS AND ADDITIONS. PLANS	73
DITTO. ELEVATION OF HOUSE BEFORE ALTERATION	74

*Recent Excavations in Malta.**

EXCAVATIONS have been conducted during the latter half of May and the month of June by the Government of Malta, under the supervision of Dr. Thomas Ashby, Director of the British School at Rome, and Mr. T. E. Peet, student of the school, and with the constant co-operation of Professor T. Zammit, Curator of the Museum of Valletta.

Attention was at first devoted to the completion of the excavation of the easternmost of the two groups of buildings, partly cleared in 1892, and described by Dr. Albert Mayr in his valuable work on the prehistoric monuments of Malta,† the westernmost having already been re-examined by Dr. Zammit and Professor Tagliaferro. The plan is very unsystematic, and the recent excavations merely brought some additions to it, as its full extent had not in certain directions been previously ascertained. Mayr is probably right in believing it to have been of a domestic character, as most of the rooms are small and irregular, and it displays no unity of plan. The construction is largely megalithic, though comparatively small blocks are employed—few of the blocks used show any traces of working. A number of worked flints were found, but no trace of metal, and the pottery was decidedly of the neolithic period. The building is thus contemporary with the other megalithic buildings of the island, and with the hypogeum of Halsaflieni, which lies some twenty minutes' walk to the south. Before the modern fosse which surrounds this part of the Corradino Hill was made, it occupied the summit of the hill, commanding a fine view all round.

Another building, occupying a similar position, lies about half-way between that which has been described and Halsaflieni. It had not been previously excavated, but was covered with a mound, from which protruded large blocks, which gave an unmistakable indication of the existence of a megalithic building. In plan it differs somewhat from the other megalithic sanctuaries of the Maltese islands—Gigantia, Mnaidra, and Hagar-Kim—with which, however, it is probably to be classed. It consists of four or five different groups of chambers, not accessible from one another. The two most important of these were entered from the front, which is on the south side. The façade shows a far more decided curve than is the case in the other sanctuaries of Malta, and in this respect has a strong resemblance to the Tombs of the Giants of Sardinia and other analogous monuments cited by Dr. Mackenzie*—the horned tombs of Caithness and the long barrows of Wiltshire and Gloucestershire. The area in front of it is paved with rough slabs of stone, and was possibly elliptical in shape, though the outer boundary has not been recognised for the whole extent. The façade itself is constructed of massive slabs (one measures 6 ft. 7 in. in length, 2 ft. 1 in. thick), behind which is an interval filled with earth and stones, then another line of slabs, and then another interval of packing before the internal walls of the rooms are reached, giving a total thickness of 9 or 10 ft. In front are footing slabs about 2 ft. wide, to increase the stability.

A doorway, not far from the south-eastern extremity of the façade, leads into the first group of rooms, which consists of three apsidal chambers communicating with one another. Of their internal arrangements there is no trace, and a modern limekiln, which has been planted in one of them, accounts for much of the destruction which the building has suffered. The thin, well-worked slabs on each side of the doorway may be noticed. Passing out through this doorway, which is 3 ft. 9 in. in width, we turn to the right and reach the entrance to the most important part of the building. The threshold, 5 ft. across, is well preserved; it rises 1 ft. 3 in. above the doorsteps both inside and outside. The doorway leads into a corridor, lined with slabs and paved with rough slabs of stone; at the end of it is another threshold, and then the passage widens out to 7 ft. 5 in. Here it could be barred with a large beam, which passed through a round hole, 8 in. in diameter in one case and 10 in. in the other, in the orthostatic slab on each side of the passage.

We now enter a trapezoidal space, paved with slabs of stone. On our right is an apse, the walls of which are preserved to a height of some 6 ft. The construction is of large rough blocks, with smaller blocks above; in one case a little to the left of the centre, where small stones are used for the whole wall, a pillar-like block runs up the whole height preserved,

* See, in connexion with this subject, the report of a meeting of the British School at Rome, *Builder*, March 27, p. 367.

† *Abhandlungen der Bayerischen Akademie der Wissenschaften*, Cl. I., vol. xxi., part iii. (1901), pp. 691 *sqq.* *Prehistoric Malta* (Malta, 1908, privately printed), pp. 66 *sqq.*

* *The Tombs of the Giants and the Nuraghi of Sardinia in their West European Relations*, p. 29 (reprinted from *Memnon*, vol. ii., 1909, fasc. 3).

Digitized by Google

as though to ensure stability. The upper part of the walls, especially on the right, shows unmistakable traces of inclination, in order to form a roof. The apse is shut off by a low wall. On the extreme left, shut off by another low wall, in which there is a doorway 2 ft. 5 in. wide, is another apsidal room.

Opposite to the first apse there was originally another, somewhat larger; so that this group of rooms originally consisted of an entrance corridor, a trapezoidal space with an apse at each end, and an apse opposite the entrance. The apse on the right hand was subsequently divided into two parts by a wall at right angles to its chord. On the right hand (north side) of this wall a remarkable trough was inserted; it is boat-shaped, cut out of a single block of hard stone 8 ft. 9 in. in length, 3 ft. 8 in. in width, and 1 ft. 10 in. in thickness. It is divided by cross ribs into seven compartments, the total depth of which from the top of the slab is 1 ft. 1½ in., and 7 in. from the cross ribs. It shows considerable traces of rubbing inside, and may have been used for grinding corn.

The construction of the wall dividing the trough from the next room to the south, and which, as we have seen, is a more recent addition, is noteworthy. As is seen in this room, it is built of fairly well cut rectangular slabs, 3 ft. 6 in. in height, above which is coursed masonry, obviously inclined inwards. This style of construction is seen nowhere else in the building, and approximates to that which is seen in the apses of Mnaidra and Hagar-Kim. As Mackenzie has pointed out, the combination of orthostatic slabs and ashlar masonry is observable especially in the Tombs of the Giants in Sardinia and elsewhere in the Mediterranean; *e.g.*, in Lampedusa where in a recent visit, numerous hut foundations were found, and scanty, but sufficient, traces of obsidian (which is not found in the island and must have been imported either from Linosa or from Pantelleria), and of neolithic pottery.

On the right is the entrance passage from the large room, about 3 ft. 6 in. in width, and formed of pillar-like blocks; the equilibrium was no doubt secured by the weight of the lintels. The blocks in the middle, where the threshold is, project inwards, and with it and the lintel produce the effect of those window-like openings which are so characteristic of the megalithic sanctuaries of Malta.

On the curved wall (part of the original apse) of this room were two dolmen-like niches. The first is well preserved. The cover slab was found broken above it; it measured 4 ft. 7 in. by 3 ft. 4 in., and was supported by the two small uprights pillars at a height of 2 ft. 10 in. above the floor; it will be put together and replaced. To the right was a larger niche, of the same character, the cover slab of which was not found. Mayr (following Evans) points out the derivation of these niches from the dolmen tomb, though, inasmuch as the fronts of them are in all cases but one open, their origin has been lost sight of. The last 8 or 9 in. of earth above the floor of this room were especially rich in worked flints, pottery, and the bones of animals.

No trace of metal was found anywhere, either in this or in the other building. The south-west extremity of the façade was much ruined; here there was a chamber which can only have been entered from the front, and was cut off from the rest of the building. At the back were a number of other rooms, the walls of which are not as a rule preserved to a height of more than 2 or 3 ft.; they were not accessible from the rooms we have described, and must have had a separate entrance on the north or north-east. Their arrangements seem to have been less elaborate, and they may have served for habitation. This, however, is a question which cannot as yet be solved.

The importance of the work in Malta in connexion with the British School at Rome's scheme of prehistoric research in the West Mediterranean area is obvious.

In many ways Malta occupies a unique position, but, as will be seen, interesting parallels with Sardinia can already be drawn; and, while it is probable, and indeed natural, that certain elements will prove to be peculiar to the Maltese group of islands, further research will certainly lead to the discovery of further affinities, which will contribute to our knowledge of this subject, which has a special importance and interest for us, owing to its bearing on the "pre-history" of our own islands. The Government of Malta is to be congratulated on the public spirit it has shown; and the British School at Rome hopes to be able to continue to co-operate in the work which has been so successfully begun. For this, however, properly qualified men are needed, and must be financed.

NOTES.

Undeveloped Land Tax and Gardens. THE Liverpool Law Society have received the report of a special sub-committee appointed to consider the proposals of the Finance Bill relating to land. In that report it is stated:—

> "It is doubtful whether suburban residents have yet realised that the possession of a garden exceeding an acre is to involve the payment of both undeveloped land duty and increment value duty."

In the *Times* of the 12th inst. Messrs. Ogden, Sons, & Olley have done their best to bring this fact clearly before both suburban residents and the Government. They have taken a typical property at Wimbledon and applied the provisions of the Finance Bill with a view to ascertaining the assessment of the undeveloped land duty, with the result that the duty would amount to 14s. 7d., a very moderate estimate of the cost of valuation being ten to fifteen guineas. Thus, if this tax stood alone, and if the Government, as should be the case, bore the expenses of valuation, it is apparent that the tax would cause a heavy loss to the Government. As it is, a tax of a small amount is to be levied at enormous cost to the individual. The surveyors have taken a very disinterested standpoint in regard to the proposed taxation, and in consequence their opinion should have considerable weight with the public, since the proposed legislation would certainly largely increase their sphere of work. The Surveyors' Institution have again drawn attention to the undesirability of the taxation of small properties exceeding one acre on the ground that it will tend to reduce the air spaces in and around towns. This is a point which we have always drawn attention to and one which the Government should not fail to consider, having regard to the policy expressed in other Bills relating to Town Planning and the improvement of social conditions.

Demolition of Buildings. IN the annual Report of the Medical Officer of Health for the Borough of Marylebone, Dr. Meredith Young, attention is drawn to the nuisance caused by the dense clouds of dust often raised in the process of the demolition of buildings. Neither the County Council nor the Borough Council appear to have at present any legal powers to deal with this nuisance, which involves not only the discomfort to passengers arising from the dust, but the possibility of infection. The Medical Officer states that in Paris the necessity for checking this nuisance was recognised some ten or eleven years ago, when a by-law was passed compelling house-breakers to water the portions of the building which they were pulling down, in such a manner as to prevent dust arising from it. It is certainly a matter for the consideration of the London County Council, who might well take steps to secure legislation on the subject.

Natural Ventilation. AN investigation recently made in Boston (U.S.A.) is of interest as showing the comparatively rapid rate at which air and other constituents of the atmosphere are able to pass through walls and small spaces about door and windows. The room selected for the purpose of tests was in an ordinary dwelling-house, the walls of which were boarded outside, plastered and papered inside, and where the single window was puttied up and the door was provided with draught-excluding material. It is not unnatural to suppose that these preparations would have the effect of preventing any appreciable ventilation. As a matter of fact, however, the air of the room continued to change at the rate of nearly 1·06 times an hour, the disappearance of carbonic acid gas being very clearly indicated. We assume that the chimney, if there was one in the room, had also been closed in an effective manner.

Sand-Lime Bricks. RECENT experience in Germany shows that one of the most inimical substances in sand-lime bricks is humic acid, which enters into combination with part of the lime and tends to disintegrate the bricks. As the acid in question is formed from impurities, the obvious remedy is to use nothing but well-washed sand. In Holland it has been found that sand-lime bricks frequently suffer by the detachment of flakes, chiefly from the upper part of the surface. This effect is observable in bricks made with hydraulic lime and rarely, if ever, in cases where fat lime is employed. The explanation put forward is that the mortar mixed with hydraulic lime encourages the formation of an outer layer of calcium silicate,

Digitized by Google

which absorbs moisture from the atmosphere and does not adhere efficiently to the interior mass of the moulded bricks. The procedure generally recommended on the Continent is to avoid the use of hydraulic limes, to employ mortar with a sufficient proportion of water, and to introduce steam into the curing chamber. Of course, in bricks intended for foundation work it is very desirable that hydraulic lime should be employed.

The Canadian Lock Mishap.

THOSE who mistrust the employment of locks in the Panama Canal may find additional justification for their views in the accident which occurred at Sault Ste. Marie. Similar mishaps have occurred elsewhere, and it is quite certain that lock gates are liable to be carried away at any time. On the occasion to which we now particularly refer a steamer approaching at about six miles an hour struck the canal wall below the lock and forced one of the gates upward against a 19-ft. head of water. The tremendous flood which followed washed back the offending steamer and carried two other large vessels downstream, all three being more or less seriously injured. Immediately after the accident the canal staff commenced to close the movable dam provided in view of accident to the lock. This operation was successfully performed, but the result of the mishap caused an entire stoppage of traffic for nearly three weeks. Various precautions will be adopted on the Panama Canal to prevent injury to the lock gates, and movable dams of the most approved type will be constructed for control of the waterway in case any disaster should occur. Probably these safeguards are quite adequate in themselves, and we have little doubt that they will prove satisfactory in practice providing the officials to whom their management is entrusted can be persuaded to put aside the happy-go-lucky methods which are so much favoured on American railways, and more or less generally throughout the United States in connexion with machinery and appliances gifted with latent power for causing injury to persons and property.

British Housing Methods for Italy.

IN a communication to the College of Engineers and Architects of Milan, Signor Ferrini expresses his opinion that the only way to provide adequately for the housing of the working classes in Milan is to construct a large number of economic and hygienic dwellings, a problem which has already received considerable attention from the municipality and philanthropic societies. Eliminating as condemned by experience the vast barracks known as workmen's dwellings, the author discusses other forms of construction. All his sympathies are with the small isolated houses such as are found in British garden cities, but he recognises the fact that as a rule this solution is inapplicable to Italy, where communications between large cities and outlying regions are not developed as in the case of British cities. As an alternative he recommends the form of workmen's cottage with which we are very familiar in this country, urging that the small ground area covered, the thinness of the walls, and the simplicity of all constituent elements are features worthy of imitation in Italy. Not many years ago the average terrace of workmen's cottages was a thing of horror, expressing the worst traditions of speculative building. To-day, however, there is a marked change, and, thanks to the importation of architects into this class of work, many well-designed and really tasteful little houses and maisonnettes are in evidence, which we need not be ashamed to hold up as models to other nations.

The Price of Electricity.

THE large variations in the price of the electric unit charged by London electric supply companies is a matter which seems to us to call for investigation. It seems particularly hard, for example, when one shopkeeper is charged twice as much for electric power as a rival shopkeeper not a hundred yards away, but served by another company. We can see no reason why the former should continue to be penalised by heavy electric charges simply because the undertaking owned by a company or municipality, who possibly obtained their provisional order twenty years ago, has proved a commercial failure. The framers of the Electric Lighting Acts (1899) seem to have anticipated this state of affairs, because they have made the revision of prices for electric energy every seven years compulsory. Yet the Act is seldom put into operation, as private individuals —if a company supply—must apply through their local authorities to get this revision made, and have practically no redress if the municipality supply. In some cases relief has been obtained through a power company. One small company, for instance, in the north of London, who began their supply some years ago, have recently assumed the humbler *rôle* of distributing energy bought "in bulk" from a power company. The cost of generating an electric unit in the last year of its existence as a supply station was over 3d., whilst the cost during the first year in which the electricity was purchased "in bulk" was less than 2d. It seems to us a great pity that most of the engineering energy expended in designing schemes for the supply of electricity to London from huge generating sations many miles away has been wasted owing partly to the timidity of Parliamentary Select Committees. In the meantime, however, it would be interesting to know why the prices of supply are so various and what prevents a uniform price being charged over all the metropolis.

Health of City of Liverpool.

IN the annual Report of the Health of Liverpool the medical officer for that city observes that though insanitary property is gradually diminishing, much of it still remains, necessitating the frequent services of notices to abate nuisances, and he urges owners to demolish such property, thus co-operating with the Housing Committee, and ridding themselves of the annoyance of receiving notices. (It is to be feared there is a class of landlords who take such notices very philosophically.) The reports as to excessive smoke from mills and steamships are diminishing, showing increased care on the part of owners; but another kind of nuisance seems to have arisen out of some of the precautions taken by manufacturers to avoid smoke:

"The efforts made by manufacturers to diminish the emission of excessive smoke from the chimneys of their respective works have led them in several cases to adopt a form of mechanical furnace known as the 'sprinkler,' combined with a system of forced draught. Wherever such a combination has been installed it has caused a very fine, charred, gritty dust to be sent out from the chimney. Unlike smoke, this dust cannot be seen while it is actually issuing from the chimney, and very careful observations have, therefore, to be taken by the inspectors, so as to definitely determine the source from whence it comes. In each case where a complaint has been made the source of the annoyance has been successfully traced, and various means have been adopted to prevent it, such as the provision of dust chambers and water-lutes in the flues, with appliances for frequent cleansing; but the most lasting benefit has accrued where the use of the type of furnace alluded to has been discontinued."

That is a point to be borne in mind in connexion with the subject of smoke nuisance. Some photographic illustrations are appended to the Report, showing the insanitary state of some of the old-fashioned country cowsheds from which diseased milk was issued, contrasted with the clean and orderly cowsheds erected under the direction of the city authorities. There seems to be much to be done in Liverpool yet, but it is evident that sanitary reform is in an active and energetic condition, and under wise management.

Church of SS. Anselm and Cecilia, Lincoln's-inn Fields.

THIS church has just been finally closed, and will shortly be pulled down. It was built in 1687-8 for the Franciscan Fathers of the Second English Province of Friars Minor upon "the spot near the arches in Lincoln's-inn Fields lately in the possession of the Countess of Bath," as we read in "The Franciscans in England," by the Rev. Father Thaddeus, O.S.F., 1897. Nos. 53-4, Lincoln's-inn Fields (since sub-divided), were formerly a single house occupied by the Portuguese and afterwards by the Sardinian Embassies—whence the church derived its name as the "Sardinian Chapel." No. 54, latterly the presbytery, extended above one-half of the archway opening into Duke, afterwards Sardinia, street, marked with two tablets inscribed "Dvke Streete, 1648." A door in the hall of the presbytery was formerly the only entrance into the chapel which, in 1780, after the "No Popery" riots, was reconstructed and enlarged westwards, with a north door, on the site of the embassy stables. Inigo Jones completed the houses on that, the west, side of the Fields, at first known as Arch, or West, row, with the archways, or "arches," beneath Nos. 54-5. The building of the chapel also is commonly ascribed to him; the chronicles of the Franciscan Fathers, and A. Parkinson's "Collectanea Anglo-Minoritica," 1726, indicate a date later than 1652—the year of Jones's death. The "No Popery" rioters sacked the chapel in the night of Friday, June 2, 1780. The pillage and burning of that chapel with others in the town on the night of King James II.'s flight is commemorated by George Bower's rare silver medal presented to William and Mary upon their accession, of which there are two illustrations in the *Builder* of

Digitized by Google

October 22, 1898. The reverse depicts in finely-wrought relief the chapel and house in ruins, with a unique view of Arch-row, the screen-walls between the piers of the forecourts, and the railings of the paths and enclosures of the old square.

Duke of York's School, Chelsea.

WITH the migration after the holidays of the school to Dover a familiar object, as in the case of the Bluecoat boys, will, with its bright tone of colour, disappear from the streets of London. The present buildings were erected in 1801–3 by Copland, after designs by John Sanders, and were constructed of brick with stone dressings, the principal façade, opposite the Guards' playing-ground in Burton's Court, having a deep tetrastyle Doric portico with steps, and a pediment rising up to the second floor. The cost was defrayed out of unclaimed Army prize-moneys. The school was founded at the instance of the Duke of York, as the Royal Military Asylum; it received its later designation some years ago when the present Prince of Wales was created Duke of York. The grounds, of about twelve acres, abut upon King's-road, and are Government property.

Balconies and Verandahs.

A CORRESPONDENT writes:—"One notices, when visiting Germany, that a great feature of modern domestic architecture is the abundance and roominess of verandah and balcony. It is to be regretted that not more country houses in England should be built with them. Anyone who has once lived in a house where a verandah is much used is aware of the deficiency when living afterwards in a house which has neither verandah or balcony attached. A large roomy balcony, roofed over, acts as an additional room; it can be converted into a dining, sitting, and bedroom respectively. A verandah gives one the benefit of sitting in the garden with the comfort of an indoor room. It need not necessarily make the inside rooms darker. The Germans so thoroughly recognise the good obtained by living the open-air life that many will take a small house with good verandahs and balconies in preference to a larger house minus both."

LIBRARY COMPETITION FOR LISCARD, CHESHIRE.

A COMPETITION, limited to architects practising in Cheshire and Lancashire, has been held for a Library in Earlston-road, Liscard. Mr. Andrew Carnegie has given the money for it, and Mr. G. H. Willoughby, F.R.I.B.A., of Manchester, was appointed assessor.

An old house in a depraved Jacobean style, which is at present used as a library, was to be retained in the new scheme and joined to the new building by a corridor. It was to be utilised for the librarian's private rooms, caretaker's apartments, storage, book-binding, etc., thus relieving the new building of the necessity of providing a series of small rooms. The new Library was to contain on the ground floor only news-room, reference room, and a main book-room for lending library on the open-access system, with a screened-off juvenile lending department. Upstairs, there was to be a lecture-room over the news or reference room, and a corresponding-room for future use as a magazine-room; but for the present to be divided up by partitions into three small rooms for committee, reading circles, and cataloguing. A possible future extension for these three was to be indicated. A diagram plan embodying these requirements was sent to the competitors with the conditions.

The new library was not to cost more than 7,000*l.*, with an additional 2,000*l.* for fittings, fees, clerk of works' salary, etc. Out of the forty-six designs submitted, Mr. Willoughby selected that by Messrs. McColl & Tonge for the first place and bracketed as equal seconds five other designs, by Messrs. Deacon & Horsburgh; Packer, Drewitt, & Drewitt; Sproat & Warwick; Appleyard, Quiggin, & Beveridge; and T. D. Earnshaw, respectively. He suggested that the first premium of 50*l.* instead of being merged in the commission of the architect carrying out the work, should be added to the second and third premiums making up a sum of 100*l.*, to be divided equally among the five placed second. The assessor also awarded hon. mention to five other competitors, and in general commented upon the high average of work submitted.

In the diagram plan the building is shown facing directly on to Earlston-road—that is, due north, with the reference-room on one side of the door, the news-room on the other, and the book-room to the back, the juvenile lending-room being placed in the middle of the entrance hall. The winning design has retained this plan almost exactly—more nearly in fact than any other competitor. The architects have moved the staircase to the other side of the entrance so as to bring it nearer the lecture-room, and have added an extra staircase to the far side of the connecting corridor so as to act as an emergency stair from the lecture-room; they have slightly re-arranged the rooms over the news-room, though not in our opinion so as to improve upon the diagram plan. They have also reduced the width of the news and reference rooms by 2 ft., and made them slightly longer in proportion. It seems to us that these slight alterations hardly justified the holding of a competition at the great expense to the profession to which the assessor alludes in his report. There are no new ideas brought forward to reinforce the local engineer and librarian, who, we suppose, worked out the diagram plan (which, as the obvious arrangement—the first thing that an architect would sketch out in working out the sizes of the rooms, was well enough), and the only gain is the elevation which the assessor commends highly for its "window fenestration," as he tautologically expresses it.

With the exception of one, all the second-placed schemes were evidently selected for their close adherence to the diagram plan, though several of them showed considerable minor improvements which necessitated deviations from it. Messrs. Sproat & Warwick placed the axis of news and reference rooms parallel to Earlston-road instead of at right angles to it, and materially improved the entrance hall, which was not so cramped by the juvenile lending-room as that of the winning plan. On the first floor the entrances to the lecture-room and committee rooms were well planned, with a certain balance and spaciousness which would have avoided crowding at the end of a lecture. They had attempted to bring the elevations into harmony with the existing Jacobean building by adding gables to a somewhat heavy modern classic designing, not a successful compromise. Many competitors submitted Jacobean designs which were not very agreeable owing to the necessity for wide windows; the winning design, however, was in the recognised modern library style, for which a name has not yet been invented.

Most of the other competitors showed a semi-circular or polygonal book-store in place of the awkward square shape with the angles canted off to form triangular store cupboards, which the winner took from the diagram plan.

The plan submitted by Messrs. Appleyard, Quiggin, & Beveridge, is on entirely different lines, and has been evidently suggested by a desire to avoid the due north aspect for news and reference rooms. These rooms were placed in a radiating position so that the long side of one faces south-east, and of the other south-west, and the entrance was in the re-entering angle between them, the whole plan being set out on a radiating principle from the attendant's desk in the centre.

Messrs. Shepheard & Bone went even further than this in their departure from the diagram plan. They set the news and reference rooms at the back of the site, facing south, with a fine open view across the park, with Bidston-hill in the background. The one-story book-room was placed in the centre on the front with two-story side wings. The whole formed rather an interesting arrangement, though an irregular corner to the book-room was a distinct flaw.

The drawings were all on view in the Wallasey Technical School on the 9th, 10th, and 11th inst. We have no space to mention any of the other designs, many of them of great merit, and containing ideas of a more interesting nature than the diagram plan.

EXHIBITION OF STUDENTS' WORK AT THE LONDON COUNTY COUNCIL CENTRAL SCHOOL OF ARTS AND CRAFTS.

THE excellent service to the cause of art which the County Council schools of art are rendering, is made evident by the ever-improving standard manifested in these annual exhibitions of works submitted by their students for the various scholarships which the Council award. As a case in point we believe we shall not be wrong in stating that the furniture produced this year has reached a higher level, both on the score of workmanship and design, than has ever before been the case. We may remark that in our notices we can only distinguish the authors by their examination numbers, as no names are affixed; in some cases, where no labels are attached, it is impossible to discover their numbers.

A copy of Albert Durer's "Knight, Death, and the Devil" is one of the most remarkable works exhibited. Both a print and the copper plate are shown; as a *tour de force* of dry-point, evidencing great sureness of hand and eye, it would be difficult to over-praise it. Writing from memory, we are inclined to believe that the parts in shade are too even in tone, and the high lights on the body of the knight's horse too abrupt. At a time when slovenly technique is too often hailed as evidence of cleverness, the patience of this student deserves very great praise. While on this subject, might we hazard the suggestion that the combination of etching and dry-point by which the greatest masterpieces of engraving were produced, should again be revived, as an artistic exercise? We say this with great diffidence, at the risk of being labelled votaries of a retrograde Philistinism.

Designs for book illustration are very much in evidence. Of these the most remarkable are those by the student whose examination number is 49. The pencil studies show considerable power, though the finished and inked-in designs exhibit in comparison a surprising timidity. Notwithstanding, they are as good as anything else of this class to be seen in the room. Some wood engravings (Exam. No. 586) show talent.

Architecture is poorly represented. A design for a public library is, however, good, both in plan and elevation: the latter is sound and conservative, and set out in a workmanlike style of draughtsmanship. The design for a "small country church" on a hill-side possesses remarkable originality. Two designs for a "Country House" are shown, one in the orthodox gable and casement vernacular, the other a combination

Digitized by Google

of Kirby Hall and "Bacon's Ideal Palace," as set forth a few years ago by Mr. Robert Atkinson.

Some measured drawings of mediæval monstrances and candlesticks (Exam. No. 1) are excellent. A tile design (Exam. No. 536) is very good and distinctly Persian. A design for a tapestry (no label attached) representing a lion stalking through a forest, is splendid.

A model for a lamp-post for the courtyard of a shipping office (Exam. No. 53) is a happy conception. At the top of the standard four beaks of ships project carrying as many lamps.

Two portrait busts (Exam. No. 496) are of striking excellence. A design for a presentation casket (Exam. No. 8), which was successful in the National Competition last year, is again shown.

Of the furniture, a cabinet of Jacobean character (Exam. No. 330) is easily the best in construction and design. A sideboard (Exam. No. 452) is a very good piece of work. A bookcase in Italian walnut (Exam. No. 474) is worth notice. As far as neat and exact workmanship goes it would be hard to excel an inlaid chess-board, to which no label is attached. There are also some good examples of sign-writing. We question, however, whether the "school of art" style of lettering is the most legible type, and legibility is the chief aim of sign-writing.

Some excellent specimens of book-binding are also shown. Of these the most ambitious is the binding of the "Life of Charles I." "The Bridal of Triermain" (oblong in shape) is a sound piece of work. "Northanger Abbey" struck us as being clothed in too eclectic a style, if there be any merit in giving a book a consistent livery.

DISCONNECTING TRAPS.

At a meeting of the Sanitary Inspectors' Association, held recently at Bath, Mr. T. J. Moss-Flower, C.E., F.R.San.I., of Bristol and Westminster, read the following notes on the disconnecting trap in drains, which are of considerable interest and value:—

(1) He considered it most desirable that there should be fixed on the line of drain between the house and the sewer an intercepting trap to prevent the passage of the sewer air into that part of the house drain and pipes as are on the house side of the trap;

(2) In his opinion the fixing, in a proper manner, of an intercepting trap of suitable size, shape, and form affords an effectual barrier to the passage of any germ of disease or sewer air from the sewer to the house;

(3) He had examined the drainage of houses where there was no intercepting trap between the house and the sewer, and the sewer air was enabled to pass freely to the inside of the house, through defective drains and sanitary fittings, and which was alleged, by medical attendants, to have been partly contributory, if not the direct cause, of the specific form of disease from which the inmates were suffering:

(4) He had examined the drainage and sanitary arrangements of a large number of houses where in each case there was an intercepting trap on the line of drain, and gave particulars of the defects discovered, such as periodical syphoning of traps of water-closets, which allowed drain air to enter the house, and which, but for the intercepting trap, would have given a free and uninterrupted passage to the house for the sewer air;

(5) In the absence of a trap on the line of drain, any germs of disease, which may find their way into the sewer from an infected stool or otherwise, may pass up the house drain of a neighbouring house and into the house through one of the numerous defects that may exist in the drains and general sanitary arrangements, and be imbibed by the inmates;

(6) He has never known any evils to arise in connexion with the numerous systems of drainage constructed by him during the last twenty years in connexion with which intercepting traps were fixed, and that of the large number of intercepting traps fixed by him, he has only known of one becoming choked, and that was due to the carelessness of workmen in allowing some cement to fall into the well of the trap;

(7) In his opinion the abolition of the intercepting trap would prove very disastrous, and that it would not be thought of in any case unless the public sewers were constructed, covered, cleansed, ventilated, and kept at all times so as not to be a nuisance or injurious to health, and the house drainage and general sanitary arrangements of all houses draining into the public sewer were also constructed and maintained constantly in a perfectly sound state; and since it is not possible to ensure this, the intercepting trap is the best safeguard to the health of the inmates of houses;

(8) Where complaints have been made against the use of the intercepting trap, they arise from one or more of the following defects:—

(*a*) The trap is too large or too small, in the former case difficult to flush, and in the latter liable to choke;
(*b*) The trap is of improper shape and form, offering obstacles to the flushing out of its contents;
(*c*) The invert of the outlet of the trap being on a level with, or above the level of, the inlet, in the latter case causing the sewage to pond back in the drain;
(*d*) Carelessness of workmen in fixing the trap out of level, either tipping it towards the outlet, thereby breaking or reducing the water seal, or tipping it towards the house, and making the outlet higher than the inlet, and causing the sewage to pond back in the drain, as in (*c*); also in not clearing the cement from the inside of the pipes at the joints, etc.;
(*e*) By fixing the traps, in cases where there are no special automatic flushing tanks, so far from the house that all ordinary flushes of water have so spread out along the invert of the drain as to have no flushing power by the time it reaches the trap;
(*f*) By giving too little fall to the house drains to which the traps are connected, causing the traps to choke;
(*g*) In the case of disconnecting chambers, by fixing intercepting traps with inspection eyes, leading to sewer, and which inspection eyes are capped by a plain stoneware disc, which can be easily blown out by pressure of air, or otherwise, and which stoppers, under normal conditions, are seldom tight, and allow sewer air to enter the drain;
(*h*) By a variety of other avoidable defects;

(10) The foregoing defects can be avoided if proper care be observed, and that by carefully selecting the trap, and taking due care in fixing and in selecting the position therefor, no evils need arise, and that as regards the inspection eye on the outlet end of manholes, the disc closing the opening should be so arranged that it cannot be removed by sewerman thrusting the rods up the house drains from the sewer, or by pressure caused by sewage or air, and yet so as it could, if necessary, be quickly opened from the ground level without entering the manhole:

(11) He has made detailed examinations of a large number of premises where one or another of such diseases as typhoid fever, diphtheria, blood-poisoning, etc., has broken out, and in every case he has found serious defects which admitted either drain or sewer air to the house, and to which defects the medical attendant attributed the disease;

(12) In other cases, particularly in boarding schools, where there has been no specific form of disease that could be diagnosed by the medical attendant, but a general low condition of health has been prevalent among the inmates, he has found the sanitary arrangements most defective;

(13) In his opinion it would be necessary, in the event of the intercepting trap being abolished:—

(*a*) To insist on a very high standard of workmanship and material in connexion with the construction of house drains and sanitary arrangements generally;
(*b*) To arrange for a much better system of supervising the carrying out of such work than exists at present;
(*c*) To arrange for periodical tests and examinations at much more frequent intervals than at present, to make sure of the pipes and fittings being maintained tight and sound and proof against drain or sewer air being allowed to pass into the house;
(*d*) To discontinue the practice of providing low-level inlet ventilators to drains, as now provided under most local authorities' by-laws, and to arrange for all ventilating openings to be carried to a point well above the roof and away from all windows. (This plan, it was pointed out, is desirable even when there is an intercepting trap, but it would be much more so were the interceptor abolished.);

(14) His observations, extending over a period of many years, make it clear to him that the low condition of health shown by the inmates of houses where the drain or sewer air has access to the house, is often to be attributable to the imbibation of drain or sewer air.

Ventilation of Sewers and Drains.

(15) He held that the ventilation of sewers and drains is absolutely necessary, and in the case of house drains:—

(*a*) To prevent the air in any part of the drain or pipes from being compressed to such extent (by the discharge into the drains or pipes, of such as a bucket of water) as would endanger loss by momentum of the water seal of traps;
(*b*) To prevent stagnation of the air in the drain so that if there were defects in drains or fittings the air passing into the house because of them would not be so harmful or obnoxious as would be the case where there was no ventilation;

(16) In the case of drains, there should be not less than two ventilating openings, as far apart as possible, and that low-level inlet openings, now often fixed in basement areas and such places, should not be permitted, a low-level inlet only being allowed where it can be fixed a long way from the house, and where the discharges from it cannot be a danger to the occupants of the house or any one else;

(17) Since one of the objects aimed at by those who advocate the abolition of the intercepting trap is the ventilation of the sewer by means of the soil pipe continuation to the roof, the point of outlet for the ventilating pipe would have to be selected with great care, and that in many instances it would be most difficult to find a point which would be sufficiently far from windows and other openings into the house to avoid a nuisance and danger to the health of the inmates;

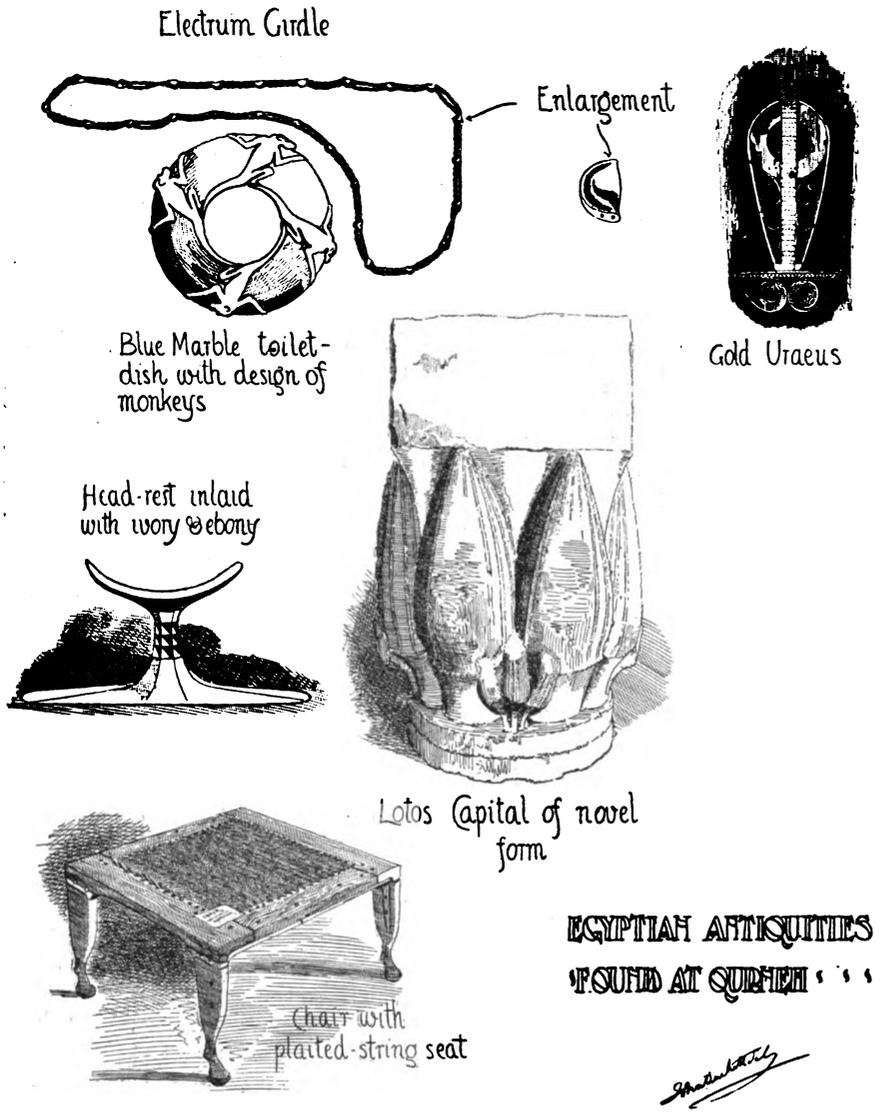
(18) The ventilating pipes from the drains of one house should not be so arranged that, although the outlets may be clear of all openings into the house they serve, they may be a danger to the inmates of an adjoining house, as is very often found to be the case;

(19) As regards sewers, his experience teaches him that ventilating openings at the ground level are the most undesirable and give rise, at least, to serious nuisances; that, generally speaking, tall ventilating shafts and columns fixed in carefully-selected positions are the most desirable, and that in places where columns must be erected in exposed positions and close to frequented places and houses, then one of the forms of lamps for cremating the emanations is desirable;

(20) If the size and form of sewers are properly apportioned to the work they have to do, and they be constructed of non-absorbent and otherwise proper materials, and be laid with self-cleansing velocities, and be regularly flushed, and have ventilating shafts fixed at proper and convenient places so as to prevent undue pressure from rise of temperature, rapid increase in volume of flow, etc., and manufacturers' refuse, which should be properly treated before being discharged into sewers, and steam and hot liquids above a certain temperature be excluded from the sewer, much will have been done to reduce the nuisance caused by the emanation from sewers.

PROPOSED CHURCH, YELVERTON.—It is proposed to erect a permanent church at Yelverton to supersede the present wooden structure. Plans for a new church have been prepared under the supervision of Sir Charles Nicholson, and according to these the dimensions of the proposed building are 100 ft. by 45 ft., and accommodation will be provided for 350 worshippers. There will be a chancel, nave, and two aisles, extensive vestries, and a tower 65 ft. high at the eastern end of the north aisle, the estimated cost of which is about 4,500*l*. Local stone is proposed to be used, with Doulton stone facings in the erection.

Digitized by Google


Electrum Girdle
Enlargement
Blue Marble toilet-dish with design of monkeys
Gold Uraeus
Head-rest inlaid with ivory & ebony
Lotos Capital of novel form
EGYPTIAN ANTIQUITIES FOUND AT QURNEH
Chair with plaited-string seat

Sketches at the Egyptian Exhibition, University College.

SKETCHES AT THE EGYPTIAN EXHIBITION, UNIVERSITY COLLEGE.

THESE sketches, to which the titles are annexed, represent some of the most interesting of the objects in the exhibition of Egyptian work discovered by Professor Petrie during his last year's work, and referred to in our Note in last week's issue (page 36).

The exhibition is on view in a room in University College, Gower-street, till the 31st of this month.

TOWN PLANNING.

THE first of a series of lectures in connexion with the Town Planning and Housing Exhibition arranged by the Hampstead Garden Suburb Trust, Ltd., the Co-Partnership Tenants, Ltd., and the Garden Suburb Development Co., Ltd., was given in the Institute, Central Square, of the Hampstead Garden Suburb, on Wednesday afternoon, by Professor A. Beresford Pite.

Mr. Ernest George (President, Royal Institute of British Architects) presided, and, referring to the presence of some members of the German Garden City Association who are visiting this country, said although they had come over here to see what was being done in the matter of town planning, yet he thought we had a great deal to learn from them. In England they had not advanced very far. They had a city which they were proud of for its historic and other interests, but its picturesque quarters had disappeared, or were disappearing. Their villages, however, he thought, were worth coming to see—that was where they had been let alone. He hoped that in the Exhibition they saw the revival of the conditions which used to exist and that they would again see the front gardens outside the houses filled with sweet-smelling flowers and containing beehives and other accessories of country life. He congratulated the promoters of the scheme on what they had already accomplished.

Professor Beresford Pite said that the creation of a city had a new-world sound about it. The Englishman first perhaps thought of America, where everything civilised had had to be created in the space of a recent epoch, and where there must be a most extensive assortment of experimental town planning schemes available for European statesmen to consider, digest, and appropriate. America had the only modern capital of any account built on a plan; and our great daughter nation, without the glamour of historical association or of style or site, had built with a foresight and design worthy of the great name of Washington. To-day also the opportunity had come to Australia. From amongst the capitals of the provinces, great as they were, she now moved forth to seek a federal metropolis with intention and power to accomplish they hoped the greatest stride the modern world had witnessed of town planning on a grand scale. It was for Australia to embody in a complete and new continent the wisdom of her Government, with, they seriously but nervously trusted, an architecture competent and noble, characteristic and graceful; the fruit of the ages, and as vivid with artistic life as the Commonwealth was with intelligence and power: this was a day indeed for such a subject as town planning. The modern conception, impressed with the spirit of ordered arrangement, planned with spacious dignity and architectural resource, had to create its own interest and maintain the national dignity without the serener charms such as yielded by the Golden Horn, the yellow Tiber, or the nut-brown Thames to their respective metropolitan cities. The equally precious traditional blessings of Justinian's building fever, Michaelangelo's tremendous scale, or Wren's capacious genius, attached to the glory of these ancient capitals, but the provision of such equivalent virtue might yet be buried in their race, waiting to be evolved by circumstances of education, environment, and opportunity. The complete idea of a modern city was not like a historic capital, the product of the mysteries of unrevealed history, but grew by the application of geometry to the courses of traffic, the areas of business or residence, and of recreative perambulation, not forgetting the monumental value of spaciousness rather than of compression. One generation, or at least two, was required to realise for this what the laborious tides of time and accident had effected for those. The results were, of course wholly different and not comparable. The ancient capital had been, perforce, the shuttlecock and plaything of time and chance, and therefore as well the creation as the creature of natural forces; while the modern city was the deliberate and concrete expression of the work and hope of either an association or an architect.

The full extent of the subject of town planning had certainly as yet barely dawned upon the minds either of legislators or architects. Garden and ideal cities, new suburbs, parks, and open spaces were each extensive subjects and fell within a similar group of ideas. Total effect, architectural grouping, regularity of plan and "lay out," completeness and balance governed the ideal and created the plan to be evolved by the ordered building of the nucleus that should grow into a great city without distortion or waste of power. Principles could be elucidated to guide and stimulate the formation of an ideal town planning scheme. The improvements of existing towns, on the other hand, was not so easy of useful theorising. A primary factor would exist in each town which might bear little or no application of the principles laid down for ideal town plan. Towns were more irregular and various in their characteristics and possibilities than men or women, and an abstract doctrine which might avail for street improvement in a University town like Oxford would be hopelessly inapplicable at Birmingham. London, Edinburgh, Dublin, or Cardiff would each obviously demand different management on the bases alone of natural configuration, to say nothing of the almost equally urgent considerations of natural and local historic monuments and character. The great towns which were almost purely commercial or manufacturing would vary further with the class represented by Cheltenham, Harrogate, Tunbridge Wells, and Brighton, which were governed by quite other hopes and purposes. Local improvements would illustrate how completely circumstances altered cases, and the attempt would be futile to lay down principles which would be adaptable for the guidance of unintelligent boards or officials. A cultivated acquaintance with the beauties of famous streets, public places, and groups of buildings would provide a useful standard of ideas and might lead to that quickened perception of advantage of position and directness of access which was the asset of a good military general. Rigidity of idea or the application of the principles, for instance, that underlay the geometric setting out of a model city plan might provide an engine for destroying the local interests and character of a town. Let old-bottle municipalities beware of the new wine of modern doctrine and cultivate an earnest local enthusiasm, it might be for a precinct, a close, or a buttery lane, rather than conclude that because electric tramways were the fashion in London suburbs they would prove the importers of fresh vigour into a delightfully crooked old-world city.

Digitized by Google

The wide differences that affected any consideration of the improvement of existing towns prevented any attempt to deal with town improvement schemes now. It must suffice to say with what interest the architectural profession had viewed the preparation and promotion of Mr. Burns's Town Planning Bill, and how convinced they were that the ultimate success of its proposals for the general preparation of town development schemes depended upon a wise and educated acquaintance with the great subject of town architecture as a whole. This conviction became an anxious prepossession when the possibilities of misconception and failure in the design of schemes which are to acquire a legislative fixedness were contemplated. The need for a proper course of training for the work of designing and preparing town planning schemes therefore became the most anxious question of the day to architects, and one to which it was not too soon to give immediate attention Happy was the nation that pointed to her completed cities perfect in their orderliness, and having the special and rare quality of fulfilled design. Where foresight had conquered accident, and civilisation was conveniently expressed in geometry of plan and by rapidity of transit, the joys of such cities were like those of a tantalus to Englishmen. Their architects described this blessedness and incited enthusiastic statesmen to re-create such Elysian fields in poor, unkempt, untidy, free Britain; for if in Paris or Washington, why not in Piccadilly, merry Islington, Edmonton, or Ware? To greater Britain, however, the subject was a present and great one. Whilst we at home were gardening the suburbs of these old incorrigible cities, the Empire was town building in earnest. This town-planning interest had up to the present received no recognition from its proper foster-fathers, the authorities of building education and practice. Empire building went on without the aid of any ordered system of mental exercise, without the specialised instruction afforded by study and experience in every fresh extension or renewal of town life, laboriously and disastrously repeating huge blunders and petrifying stupidities and ignorances which were a reproach to any people. For much of this a sound and simple architectural education would be something more than a palliative. They might note how incessantly the so-called orders of classic architecture were reproduced as an alphabet of design more or less correctly and studiously in the various classes of modern buildings in all climes. Were half the time and space so devoted by instructors and handbooks afforded to a broader view of what made for the architectural dignity and beauty of buildings, streets, and cities, the modern world would have more clearly revealed in its current monuments the wisdom of its makers. There was indeed room in all their centres of architectural life and education for a constant attention to the subject of the proper design of towns. All of them had to do with town life, and were actually in these constitutionally democratic days the paymasters and collective dictators of their own municipal officers who built, regulated, and planned their streets, or should do so; and, apart from any infusion of architectural thought into a general scheme of educational reform, what was greatly to be desired (and works of art and nature should not be divorced or unequally yoked with the education of a just mental balance) the specialised training in architecture of its own practitioners ignored this subject grievously. The recognition of the problems of their own colonial life, which were more extensive, interesting, and beneficial than most, if not all, of the stock historical and ornamental exercises of the architectural student, urgently claimed attention at headquarters. The stock properties of professional education were exercises in purely local architectural limitations both in æsthetic history and in constructional practice. The practical art of building construction was, moreover, not yet taught as an exact science, the principles of which were capable of universal application—as, indeed, they were on every spot in this habitable globe where the law of gravitation worked—and materials and climates yielded obedience to principles of design which were not more abstract or difficult of perception than those which governed British standard bricks or Baltic scantlings. The chemist and engineer went forth into the wider world of Britain beyond the seas equipped for varying conditions and relationships to nature. Why should not the builder and architect, upon whom devolved the conception and construction of multitudinous buildings, be equally furnished by education with a ready knowledge of how to employ his present opportunity and its characteristic materials and purposes? But such an education, if confined to architectural candidates, might seriously miss the class of energetic prospectors. Though it was certainly reasonable and necessary, it would be an arrangement out of Wonderland if the necessity of having a proper architectural member of the staff was recognised in the public prospectus of any of those companies which, by the development of gold, diamond, or coal mines incessantly created embryo townships which, ere long, become provincial centres, and perhaps capitals. In a general education syllabus should not some practical application of geographical particulars lead to the formation of ideals and to situation, lay-out and growth in the great cities of the world? Lantern-slide excursions would very rapidly involve actual acquaintance with satisfactory examples for criticism and construction. What came first: the inevitableness of widenings; the certain increment of values near the meeting-place of routes; rapid temporary building as of a camp, with illustrations of how the exigencies of the Roman military Castra had until this day fixed up the facts in dozens of living English townships. All this and much more of vital work could be most profitably sown into the youthful English mind, for certain fruitfulness both at home and overseas, in the short course of a rising generation. Happily there was more educational elasticity both of outlook and method in all classes now, and one could foresee a new and happy mingling of the classic and modern sides of the present debated school curricula in a study of Greek and Roman civic law and practice applied to the most progressive ideas and facts of the day. But their point of view as specially educated architects was terribly limited. The present-day architect was not in any true sense a survival of mediævalism or follower of the cathedral builders. He was not even an intelligent archæological product, for they would look in vain among mediæval builders for any trace of the modern delusive vision of the beauty of all that which was nearly 200 years old or of the necessary evil of modern matter. The progressive ancient architect spurned to follow the work of his immediate predecessor (and the present-day architect did that too, and with marvellous and unfathomable self-complacency), but he refused any undue respect to precedent, and incessantly moved onward, gathering momentum each generation from the XIth century until the XVIth. The modern architect spurned at the progressive age in which he was cast, and, lacking the spirit, imitated the letters and spelling of the builders of Chaucer's day. So the empire had to grow without his sympathy and aid, lacking a true architectural flavour in the pottage of common life. In the new interest of town-planning one might foresee and hope for a new enthusiasm for the progressive art and science of building, and buildings that would liberate them from the narrowness of their very limited antiquarianism. Modern artists, jaded in their conflict with engineering progress and Philistinism, experienced with refreshing excitement the historic thrill of a decaying city, and marvelled at the playfulness of time with the garments of a sleeping city. They made what use they could of these invigorations, and the semblances of irregularity were imparted not only to plans, but to buildings and groups, and thus art creating its own atmosphere, breathed in pretty quaintness the romantic air of the past. This humour, this antiquarian hypocrisy, superstition, and credulity might be lawfully exercised in private at the expense of those whom it amused, but the practical earnestness of town planning forbade such sentimental pantomime. In town planning the ancient and the modern divided sharply. They were here in the living present, and could not stay to quarrel longer with the private practice of architects but to preach again the new mission to educate in the essentials of great and noble architecture, the race that was building cities around the world to-day and everyday without adequate guidance from those who should be entitled to lead.

Mr. Raymond Unwin said it appeared to him that architects had first to remember that town planning was what he might call a co-operative art. The surveyor must prepare an accurate representation by contour plans and models, and so forth, of the city they had to deal with; then the engineer would have to advise as to the courses for drains, the gradients of the roads, and the materials of which the roads were to be made; the town planner must then conceive the design as a whole as an artistic creation, and the architect of the individual buildings must come in and complete them. They must have co-operation between the architect who made the plan of the city and the individual architect who would build upon the site, because they had to weld the place together as a whole. While each man might put in some individuality of his own, he must not think that his part was greater than the whole. That co-operation which in the past was largely traditional and instinctive, but which in these times must become voluntary co-operation, would enable them to work together. There was a common misconception of the meaning of variety, and people thought it meant a lot of different things. In town planning, however, it was unity which must dominate the variations if they were to give them pleasure. It was only variations between comparatively narrow limits, dominated by some harmony and unity, which were really pleasing. In the past century in this country architects had lived for themselves alone too much; they had thought how they could make their building in a particular road noticeable, and how they could bring together their fences and particular choice of materials regardless of whether they would harmonise with the other buildings in the street. It seemed to him they had first to grasp the picture of the street, and then think what they could put into the picture to complete the whole. They had also in town planning to consider how they could apply the formal, regular, orderly design of buildings to the informal site they built upon. The opportunities for building new towns like Letchworth were few, and he considered their greatest work lay in the development of new suburbs. The difficulty was often that the houses were near enough to each other to destroy any sense of beauty as country, but too scattered to give any sense of unity or an ornamental effect as a whole. He felt that in the grouping of buildings on such sites they would find their salvation.

Sir Robert Hunter proposed a vote of thanks to Professor Pite and Mr. Unwin, and this was seconded by Mr. Vivian, M.P., and carried.

Mr. S. D. Adshead emphasised the need for more education in the matter of town planning, and Sir Arthur Paget remarked that it was the business of the architect to provide people with present-day needs. Personally, he was tired of mediævalism, for he was not living in the Middle Ages, and did not want to feel that he was.

Digitized by Google

NOTES FROM FRANCE.

THE Municipal Council of Paris have, by a large majority, refused to sanction the proposed scheme for a Philharmonic Hall in the Champs Elysées, from the designs of M. Bouvard. The decision is a notable victory for the "Vieux Paris" Committee, which had protested strongly against the proposal.

In the Jardin de l'Infante of the Louvre, on the side next the Rue de Rivoli, a monument erected by public subscription to the memory of Gérôme has just been unveiled. The architectural portion of the monument is by M. Paulin, the sculpture by M. Aimé Morot, a pupil of Gérôme, and (like his illustrious master) both a painter and a sculptor. The monument consists of a bronze portrait statue of Gérôme, on a stone pedestal; he is represented as at work on modelling his statue of "The Gladiator," which Mdme. Gérôme has presented to the State.

M. Nénot, the eminent architect, has designed the monument, erected in the square of the Sorbonne, to the memory of M. Gréard, the late Recteur of the Académie de Paris. It was unveiled on Sunday last. The monument consists of a bronze portrait bust placed on a stele which is flanked by an arcade in stone.

At Valenciennes a new museum has been opened, built from the plans of M. Paul Dusart. It is a fine building, very well planned for its purpose, and affords a fitting home for a collection which was hitherto inconveniently housed in the top story of the Hôtel de Ville. One room in the new museum is set apart for the works of Carpeaux, the sculptor, who was a native of Valenciennes.

SOME QUESTIONS AND ANSWERS ABOUT LIME.

A FEW weeks ago a correspondent sent us the following questions in regard to lime:—

"Is there much imported, and from what countries? How does the price compare with the English article? I understand that it is used besides in the building trade in the tanning and chemical industries. Is this so?"

Our own reply to this is that, in view of the extensive deposits of chalk throughout great Britain, we should imagine that practically no lime is imported into this country. Lime is employed for many industrial and other purposes, as for manure, in the purification of coal-gas, for the removal of hair from skins in tanning, in sugar refineries, and by manufacturing chemists.

With the view, however, of obtaining further information, we communicated our correspondent's question to several eminent firms dealing in lime, and append their replies. We do not give the names of the writers, as we did not obtain their sanction to publication of their names; but they are well-known firms of high standing:—

"We do not think much, if any, lime is imported to this country, nor that there can be much margin between the price of the foreign article and the English product, the latter being at such a low figure. We believe that small quantities of lime are used in tanning and chemical industries, but the chief consumption is in the building trades."

"To the best of our knowledge no foreign lime is imported into this country for building purposes. The London County Council use some 24,000 tons per annum for sewage purification purposes at Barking and Crossness, and in years past this contract has occasionally gone to Belgium, when the foreigner's price has been sufficiently tempting; but during the past two or three years we have managed to hold this particular contract in this country.

The Belgian lime, we believe, shows a very high percentage of CaO, but it is, of course, more of a chemical than a building lime, and more nearly resembles our chalk lime than a grey lime, as usually used in the building trade."

"In reply to yours, we presume you mean grey stone lime; if so, we do not think there is any considerable quantity imported, as limestone is found practically all over the British Isles.

Grey stone lime is used extensively in the building trade, also in the tanning and chemical industries, and in gasworks."

"Our blue lias lime is only used for building purpose; we are not aware of any foreign lime being imported for building work."

We publish the replies instead of merely transmitting them to our correspondent, as they may be of interest to other readers.

STEEL SKELETON FRAMEWORK AND FERRO-CONCRETE STRUCTURES IN LONDON.

MR. MOONEY'S Select Committee of the House of Commons has now completed its consideration of the proposed rules for the construction of steel skeleton framework and ferro-concrete buildings in London. Considerable discussion took place before the Committee principally on the question of the drafting of the clauses, and on the London County Council bringing up a clause to meet the previous decision of the Committee to allow an appeal where the Council thought fit to modify the regulation and impose new conditions Mr. Lloyd, K.C., raised a strong objection on behalf of the Surveyors' Institution to the form of words. The Committee having intimated that they would accept the Council's words, the opponents withdrew their opposition, which will presumably be proceeded with when the Bill reaches the House of Lords' Committee. The full regulations appeared in the *Builder* of July 3, and amendments were made in the following sections:

Clause 30.

(1) All rolled steel used in such construction shall comply with the British Standard Specification for Structural Steel for Bridges and General Building Construction from time to time in operation.

(6) The compression flange of every girder shall be secured against buckling whenever the length of the girder exceeds forty-five times the width of the flange, and the web of every girder shall be secured against buckling in every case in which the depth of the web exceeds sixty times the thickness thereof.

(8) Wherever two or more girders or joists are arranged alongside and closely adjacent to one another and are intended to act together they shall be fixed together by means of iron separators and bolts or by riveted plates or in any other equally efficient manner which may be approved by the district surveyor. Separators shall not be more than 5 ft. apart and shall also be placed immediately over al supports and immediately under or at all concentrated loads.

(19) (*a*) The dead load of a building shall consist of the actual weight of walls floors roofs partitions and all other permanent construction comprised in such building;

(*b*) The superimposed load in respect of a building shall consist of all loads other than the dead load;

(*c*) For the purpose of calculating the loads on pillars (including brick pillars) piers walls framework girders joists and other constructions carrying loads in buildings the superimposed load on each floor and on the roof shall be estimated as equivalent to the following dead load:—

For a domestic building (not being a building intended to be used wholly or principally as offices or a counting-house workshop or retail shop) 70 lb. per square foot of floor area;

For a building intended to be used wholly or principally as offices or a counting-house or as a school college or place of instruction 100 lb. per square foot of floor area;

For a building intended to be used wholly or principally as a workshop or retail shop and not being of the warehouse class 112 lb. per square foot of floor area;

For a building of the warehouse class not less than 224 lb. per square foot of floor area. In every building of the warehouse class a notice shall be exhibited in a conspicuous place on each story of such building stating the maximum superimposed load per square foot which may be carried on the floor of such story.

The remaining portion of this section was unaltered.

After Sect. 29 the two following new sections are inserted:—

(30) It shall be lawful to make any addition to or alteration of a building in accordance with the provisions of this section provided that the loads and stresses in the part of a building so added or altered are transmitted from the roof to the foundation by a skeleton framework of metal and the provisions of the section with respect to buildings shall in all respects apply to such part of a building as if the same were a building within the meaning of this section.

(31) Any structural metal hereinafter standardised by the Engineering Standards Committee as before mentioned shall only be used in the construction of buildings erected under the provisions of this section subject to such terms and conditions as the Council may think fit and any person dissatisfied with any term or conditions attached by the Council may appeal to the Tribunal of Appeal. Any person failing to comply with any such term or condition attached by the Council or (in the event of appeal) by the Tribunal of Appeal shall be liable to a penalty to be recoverable in a summary manner not exceeding 20*l.* and to a daily penalty not exceeding the like amount.

Sect. 30 of the draft regulations, which now becomes Sect. 32 in the Bill, is altered to read:—

(32) In the case of the erection of a new building of metal skeleton framework or the making of any addition or alteration or the carying out of other work under the provisions of this section the notice required to be served on the district surveyor under sect. 145 of the London Building Act 1894 shall be accompanied by plans and sections of sufficient detail to show the construction of all its parts together with a detailed copy of all the calculations of the loads and stresses to be provided for and particulars of the materials to be used and should such drawings calculations or particulars be in the opinion of the district surveyor not in sufficient detail the person depositing the same shall furnish the district surveyor with such further drawings calculations or particulars as he may require and in the case of an alteration or addition or other work as aforesaid by such drawings calculations and particulars as the district surveyor may reasonably require.

Sect. 31 of the draft regulations becomes Sect. 33, and is amended to read:—

The district surveyor may for the purpose of due supervision of the construction of the building require to be furnished with reasonable proof as to the quality of metal to be used in such construction and may if not furnished with such proof or for any other reason require the builder or other person causing or directing the work to be executed to make any tests which the district surveyor may consider necessary and to drill any pillar (in all cases if reasonably practicable before the same is encased) at any point to ascertain its thickness.

Sect. 32 of the draft regulations is struck out, and Sect. 33, which now becomes Sect. 34 is altered to read:—(34) Any person dissatisfied with any requirement or decision of the district surveyor under this section may appeal to a petty sessional court who may make an order affirming such requirement or decision or otherwise, and every builder or other person failing to comply with any such order shall be liable to a penalty not exceeding 20*l.* a day during every day of the continuance of the non-compliance with such order.

Sect. 34 of the draft regulations becomes Sect. 35, and is altered to read:—

(35) In order to facilitate the erection of buildings of metal skeleton framework it shall be lawful for the Council to modify or waive any of the requirements of this section upon and subject to such terms and conditions as they may think fit and any person dissatisfied with the refusal of the Council to modify or waive any of the requirements of this section or with any term or condition which the Council may attach to any modification or waiver may appeal to the Tribunal of Appeal, but in no case shall it be competent for the Council to waive the application of or to modify any of the provisions of this section governing the stability of any part of the skeleton framework of a building, or for the Tribunal of Appeal to entertain any appeal with respect to any such waiver or modification. Any person failing to comply with any term or condition attached by the Council or (in the event of appeal) by the Tribunal of Appeal to such modification or waiver shall be liable to a penalty to be recoverable in a summary manner not exceeding 20*l.*, and to a daily penalty not exceeding the like amount.

Clause 31, which relates to buildings of reinforced concrete, is unaltered, but the two following sections are added:—

(3) No such regulation shall have any force or effect unless or until it shall have been submitted to and confirmed at a meeting of the Council subsequent to that at which the regulation shall have been made or shall any regulation have any force or effect until the same have been allowed by the Local Government Board.

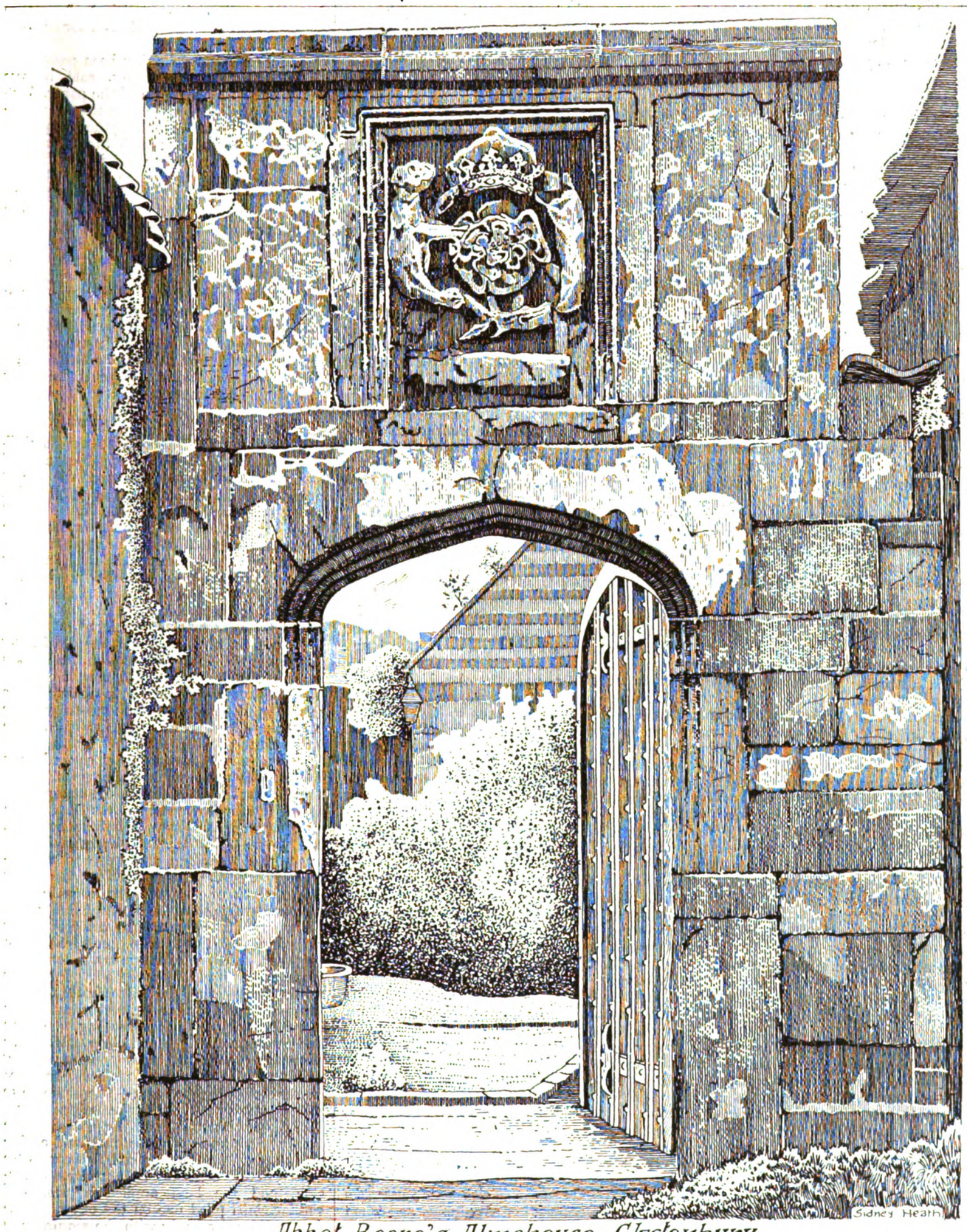
(4) All regulations made and confirmed and allowed as aforesaid shall be published in the *London Gazette*, and printed and hung up at the County Hall and be open to public inspection without payment and copies thereof shall be delivered to any person applying for the sum not exceeding twopence as the Council shall direct. Any such regulations when so published shall come into operation upon a date to be fixed by the Local Government Board in allowing the regulations and the production of a printed copy of such regulations authenticated by the seal of the Council shall be evidence of the existence and of the due making allowance and publication of such regulations in all prosecutions or other proceedings under the same without adducing proof of such seal or of the fact of such making confirmation allowance or publication of such regulations.

Digitized by Google

ABBOT BEERE'S ALMSHOUSE, GLASTONBURY.

SITUATED in a yard at the back of the old Red Lion Inn at Glastonbury is a small almshouse for women with a chapel attached, founded in 1512 by Richard Beere, Abbot of Glastonbury. The gateway is a massive piece of building, exhibiting above the arch a deeply-carved panel displaying a Tudor rose and a kind of cap encircled by a crown. The heraldic animals supporting the charge have become much defaced. At the west end of the chapel are the arms of the old abbey—a cross fleury between two roses, and jugs of beer, the punning heraldic device of the abbot, who was to Glastonbury what Wykeham was to Winchester, and, had the vicissitudes of time dealt more kindly with his work, the buildings he erected would have brought the forgotten abbot as large a measure of praise as is given to the prelate of Winchester. Both men combined a genius for building with austere devotion; but whereas Wykeham's work has mostly survived, that of the abbot nearly all vanished with the downfall of the great abbey.

The dedication of the almshouse chapel is unknown. At the side of the altar is a recess, which, on the supposition that this is the original altar, may have been used for storing plate or vestments. One of the main entrances to the abbey was through the almshouse gardens, and the stones of the abbey gateway could be seen until a short time ago in many parts of the Red Lion Inn. Since the sale of the abbey to the Church of England in 1907 Glastonbury has been in the throes of extensive restoration. The hostelry has been denuded of its old stones, which have been used as the basis for the new gateway recently built as close as possible to the plan and style of the old one, but many people preferred the old inn to the new gateway, for in this case restoration in one direction meant partial destruction in another. In addition to much work at the abbey Beere built the church of St. Benignus, on which his initials and rebus appear, and the little building in High-street, called the Tribunal, which is thought to have been the abbey court-house. It was Abbot Beere who rebuilt the leper hospital at Taunton, the sculptured panel of which was illustrated in the *Builder* of July 10.



Abbot Beere's Almshouse, Glastonbury.

Digitized by Google

Glastonbury has the remains of another old almshouse, that of St. Mary Magdalene, in the street of the same name. It is mainly Early English with debased Perpendicular additions. The nave is unroofed, but the Early English chancel remains. The plan was, as with hospitals at Stamford, Wells, and Chichester—a common hall with cubicles on either side and a chapel at the east end. Above the chancel roof is a good bell gable, of which a small scale drawing is given in Parker's "Glossary," Vol. II., plate 17.

SIDNEY HEATH.

THE INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS.

THE annual meeting of the Institution of Municipal and County Engineers was continued in the Town Hall, St. Pancras, on Friday, June 25, Mr. W. Nisbet Blair, M.Inst.C.E., President, in the chair.

Testing of Materials.

Mr. W. G. Kirkcaldy, M.Inst.C.E., read a paper on the testing of materials. He thought specifications should be drawn very explicitly, and he would urge the importance of the engineer enforcing the tests. His view had always been that the function of testing was to ensure satisfactory work. The tests specified, therefore, should only be such as to ensure this; that was, the requirements of such tests should not be made so rigorous that they became practically unfulfillable, which really served no useful purpose, undoubtedly entailing enhanced cost, and also tending to evasion on the part of the contractor. Therefore each clause of the test requirements should be carefully drawn with a clear knowledge of what good and suitable material would readily yield under each class of test. Once workable test clauses were laid down, they should be duly enforced, otherwise it encouraged the custom with some manufacturers of expecting a concession to be made regarding the quality whenever a question arose of material being rejected owing to its not complying with the specification.

Where engineers give way on these points it becomes more difficult for others to uphold and enforce their specified conditions. There was another view, moreover, of this phase of the question, which was this—whenever a maker succeeded in passing an inferior material it was distinctly hard and unfair towards other makers who were prepared to supply the right material, and who faced the loss from rejections in cases where their material did not come up to the standard. This was, in fact, a very serious and important matter, not alone as affecting individual makers, but as a national one, as if not guarded against it would lead to the lowering of the quality of all our productions.

The general custom of stipulating all cost of testing to be defrayed by the contractor, without detailing the number and kind of tests required, was not satisfactory. The contractor might provide in his tender a sum considerably in excess of what was utlimately expended, or in other cases the contractor might plead that he had not provided anything for testing charges. A good method was for the engineer to schedule a list of tests that would be required, and specify that a certain sum should be provided to cover cost of such. If a less amount be expended than that provided the balance should be accounted for in the final settlement.

A better method, where it could be adopted, was that the cost of tests be treated as an independent and direct charge, and be defrayed by the authority having the work executed. This prevented any leakage of funds, as then only the cost entailed for the actual tests carried out needed to be paid for. A very useful provision in such case to incorporate in the contract was that the costs of the tests of any rejected material should be borne by the contractor; this tended to care being exercised on his part only to put forward material that was up to the required standard. Moreover, it would be unfair and vexatious to the authority to have to pay perhaps repeatedly for tests of material found unsatisfactory.

The usual tests for bricks were to ascertain the resistance of thrusting stress or crushing. This brought out the quality or strength and uniformity or otherwise of the bricks. A number should always be tested for average. The determination of absorption was also a useful test, as if bricks were too porous they were undesirable for exterior work and tended to weather badly.

The testing of cement was a very important matter, and was now fortunately much more systematically attended to, and the tests had been brought generally to more standard lines. Great service had been rendered by the Standards Committee in drawing up the standard specification for cement; it had tended to overcome, or at any rate greatly to simplify, the difficulties of satisfactorily testing cement. Fineness was determined on standard sieves of fifty, seventy-six, and 180 meshes per lineal inch, the residue on each being recorded. Pats for soundness were made; and, in addition, tests were made by the Chatelier expansion method for soundness. Tensile tests were made at seven and twenty-eight days upon the neat cement, and also with standard sand in the proportion of three parts of sand to one of cement by weight. When mixing the proportion of water was carefully controlled. Thrusting or crushing tests were made upon specimens in the form of 3-in. cubes; this was a good test, and it was to be hoped that it might gradually be adopted as a regular test.

The tests adopted for concrete were mostly under compression, the concrete being made up in the form of 6-in. cubes, occasionally 9-in. or 12-in. cubes, three of each mixture being tested for average results at each age decided upon, the ages frequently being one, three, six, and twelve months. It was thought that engineers, as regarded cost of execution of works, should investigate as to what proportion of aggregate should be used, now that cement was so greatly improved in quality. Probably a much more economical mixture would serve in many cases. Taking, for example, foundations of roads for town traffic, if the concrete was made unnecessarily strong it entailed increased cost if for any cause the road had to be opened up.

Mr. Kirkcaldy also described tests for stones for road-making purposes, for paving slabs, drain-pipes, cast-iron, and steel and iron work.

Mr. J. A. Price (Lytham) said he tested drain-pipes for water pressure. He found a difficulty in getting pipes to stand in deep trenches, owing to ramming in and the somewhat careless way of filling up the trenches by builders. A good deal of damage was done to pipes by the way in which trenches were filled up. Only a few weeks ago he had to ask a builder to take up his pipes which were laid 12 ft. deep, because when laid they were out of alignment and would not stand the test.

Mr. E. G. Mawbey (Leicester) remarked that when complaints were made to manufacturers of cement they sent experts who by ramming and mixing could get it up to the standard specification. If there was no expert faking it would be much better for all of them.

Mr. R. Brown (Southall) remarked that sometimes engineers put things into their specifications which it was impossible to carry out. He never undertook the testing of cement, but sent it to a testing firm, and so got an entirely unbiassed opinion.

Mr. W. Paton (Plymouth) mentioned a case in which bricks stood the physical tests well, and if a chemical test had been made serious consequences would have been obviated. The bricks were made of waste lime and clinker from the retorts of a gasworks. Owing to the constituents the bricks contained a proportion of sulphur, and when placed in the wall in contact with the mortar a certain amount of expansion took place and the wall was thrown out of the perpendicular. It resulted in a lawsuit.

Mr. E. Willis (Chiswick) said he noticed that concrete tubes soon lost their porosity and became watertight.

Mr. Howard Smith (Westminster) said the purpose of the paper was to bring home to them the desirability of testing material. It had often surprised him that engineers would write specifications most precise in all their requirements, and then take no steps to see those requirements enforced. With regard to specifications, it was the first essential that they should be reasonable and exact without being exacting. He recently came across some rails, and to his surprise found they were marked by his own reject marks. He found it was no unusual thing for rails which had been rejected by one engineer or his representative to be put on one side and used for someone else.

A vote of thanks having been passed,

Mr. Kirkcaldy, in reply, said he was gratified by the reception of the paper. With regard to cement, some manufacturers were wonderfully expert in making their briquettes. He was glad to hear that the feeling was against ramming the cement in; he thought the shaking movement was preferable. He advised engineers in drawing their specifications to cut down their clauses to a minimum, and then enforce them. It increased the cost of the work if they put in too many figures. He had not touched chemical tests, as they left the chemical side to professed chemists. He quite agreed that bricks made of lime and gasworks retort clinker ought to go under a chemical test, because there was sulphur in the material. He was afraid that rejected material did get shunted on somebody. It was not remelted; it was used up on somebody or other.

Artificial Stone for Roadways.

Mr. R. Brown (Surveyor to the Southall-Norwood Council) read a paper on artificial stone for roadways. He said the use of artificial stone had become so general that every municipal engineer should be *au fait* with the methods of manufacture and the comparative qualities of the various makes, so that he might be able to advise his authority on the acceptance of tenders. It was not suggested that any engineer was incapable of advising on the subject, but, as they all knew, with a good many local authorities the question of £ s. d. was the chief factor which guided them in selection, and it was sometimes difficult for an engineer to persuade his authority—consisting probably of a majority of non-technical men—to purchase a higher-priced stone which he knew to be the cheapest in the end.

After tests spreading over several years he had adopted the following specification. The paving to be obtained from an approved manufacturer in stones, not less than 4 ft. in superficial area (unless otherwise sanctioned), and to be 2 in. thick. The manufacturer must give a written guarantee to the contractor and the surveyor that the stones proposed to be supplied had been in stock at least twelve months before delivery upon the works. The stone to be made of granite chippings and Portland cement well mixed together. Either machine-made or hand-made slabs would be accepted. The stones would be required to have both top and bottom faces equal in character and finish; the stones to be out of winding, the edges and arrises to be true and clean. When the stones were delivered on the job the surveyor would select a number of stones to be tested in the following manner:—The stone to be tested would rest on knife edges (placed 11 in. on either side of the centre of the longest dimension of the stone), and a piece of 4-in. by 3-in. timber laid flat across the centre of the stone at its narrowest dimension, and the load applied by means of similar slabs piled one on the other. If the stones did not comply with the requirements specified, or on testing any or either of the

Digitized by Google

stones break at less than 20 cwt., the whole consignment would be rejected, and must be removed from the works on notice from the surveyor.

Mr. Walker Smith (Edinburgh) was of opinion that in addition to the test for tension there ought to be tests for density, porosity, and abrasion.

Mr. Harrison (Wellingborough) pointed out that there had recently been a considerable decrease in the price of artificial stone slabs, and said it would be interesting to know whether the manufacturer was the loser by this, or whether the purchasers of the slabs were the sufferers.

Mr. Newton (Paddington) said that in London natural stone slabs were preferable, as artificial slabs could not be taken up and relaid, whereas natural stone slabs could be redressed and again laid.

Mr. O. E. Winter (Hampstead) said he found that slabs composed of a granite aggregate were apt to wear slippery, and therefore he used, where gradients were steep, flags composed of a York aggregate.

Mr. J. S. Pickering (Cheltenham) suggested that in places where they made their own slabs, in towns up to 50,000, it was better to make them by hand than to go to the expense of a machine plant.

Mr. E. Willis (Chiswick), Mr. Foulds (Keighley), and others took part in the discussion.

Mr. S. Hutton (Exmouth) read a paper on the yield of water, rainfall, etc., on a moorland watershed, with notes on the new high-level waterworks of Exmouth.

This concluded the technical proceedings of the meeting.

THE ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

"*Approved Materials and Fittings Department.*—Further standarised circulars have now been arranged by the Architects' Selection Committee, the subjects being bricks and slates. The standard information which it is desirous to have on the former circulars is to be arranged under the following headings:—

Name of Brick.
Name of Manufacturer.
Address of Manufacturer.
Address of Brickfield.
Properties of Brick Earth.
Process of Manufacture.
Distinctive Mark or Name.
Uses. Sizes.
Properties:
- Weight, dry.
- Weight, twenty-four hours' immersion in water.
- Direct from kiln.
- Colour.
- Stress cracked at tons per super. ft.

Cost:
- At field.
- F.O.B. at nearest station.
- London termini.
- Other centres.

Where Used:
- London and other cities; date of erection; position in building.
- Country; date of erection; position in building.
- Reports of scentific tests, giving names of experimenters and methods of tests employed.
- Reference to literature giving experience in scientific tests, etc.

Manufacturers' Remarks.

It is suggested that information in this form will be of very great service to the architects. At present but few, if any, particulars of bricks in different localities are kept for reference in an architect's office, and much labour is involved in ascertaining available bricks and approximate prices when specifications are being prepared. By means of these circulars, however, which will be kept in the filing folios supplied to the architect subscribers, a ready reference on the subject will be at hand, giving all the information required.

Brick makers and owners are invited to submit their goods to the Selection Committee, and further particulars may be had on application to the Secretary, 24, Hart-street, Bloomsbury."

SCHOOL OF ARCHITECTURE, UNIVERSITY OF LIVERPOOL.

COMPETITIONS AND PRIZES.

THE following is the list of awards announced by Lord Derby, the Chancellor of the University, at the Degree ceremony in St. George's Hall on July 10:—

Holt Travelling Scholarship, 50*l.*—L. B. Budden.

Sydney Jones Travelling Scholarship, 25*l.*—H. A. Dod.

University Scholarship in Architecture, 50*l.*—L. B. Budden.

Degrees.

B.A., with First-class Honours in Architecture.—L. B. Budden, H. A. Dod.

Pass Degree.—S. H. Colton.

First-class Certificate.—E. T. Forster.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, W.C., Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Battersea Borough Council 1,724*l.* for contributions towards street improvements, and sanction was given to borrowing as follows:—Bethnal Green Borough Council, 5,400*l.*, for paving works; Hampstead Borough Council, 2,300*l.* for sewer works; Wandsworth Borough Council, 6,384*l.* for repayment of temporary loan; and Islington Borough Council 4,190*l.* for paving works.

Displacement of Persons of the Working Class.—The Housing of the Working Classes Committee reported as follows:—

"We desire to draw attention to clearances in the Metropolitan Boroughs of Lambeth, St. Pancras, Stepney, Wandsworth, and Woolwich, and the City of Westminster.

In Lambeth, the Duchy of Cornwall Estate, which extends from the Thames to the south of Stamford-street, between Waterloo-road and Broadwall, is now being reconstructed in sections. This area comprises about 550 working-class houses, containing about 3,060 rooms. Of these, seventy-six houses containing 278 rooms have been, or will shortly be, demolished, and seventy-four houses containing 685 rooms have become vacant preparatory to their being put in a better state of repair. The site of twenty-three of the seventy-six houses to be demolished will be utilised for increasing the yard space of the adjoining houses, and on the site of the remaining fifty-three houses new working-class tenement dwellings are being erected. About 1,500 persons of the working class have been temporarily displaced up to the present, but it is probable that when the rebuilding is completed the working-class accommodation provided will be in excess of the displacement.

As regards St. Pancras, about 600 persons of the working class have been displaced from a site bounded by Compton-street, Hunter-street, Handel-street, and Kenton-street, to the north of Brunswick-square. The area comprises forty-seven houses containing about 394 rooms, in addition to some shops and stables.

In Stepney, forty-nine houses containing 172 rooms have been demolished in Old Montague-street and four adjacent courts. Part of the site has been added to the playground of the Whitechapel Foundation School, and the remainder is advertised to be let on building lease. About 240 persons of the working class have been displaced. In Duval-street and Paternoster-row, Spitalfields, eleven houses containing eighty-nine rooms have been demolished, involving the displacement of about 200 persons of the working class. The site is advertised to be let on building lease.

In Wandsworth, sixteen houses containing sixty-four rooms have been demolished in The Platt, situated to the west of Putney Bridge, about eighty persons of the working class having been displaced.

As regard Woolwich, thirty houses in Lower Wood-street and Godfrey-street have been demolished, involving the destruction of 130 rooms and the displacement of about 200 persons of the working class. The site is advertised to be let on building lease.

In Westminster, twenty-nine houses in Eaton-court and Eaton-lane containing 116 rooms have been demolished and about 130 persons of the working class displaced. The site is being utilised for the erection of a new hotel.

The clearances in the six metropolitan boroughs involve the demolition or closing of 332 houses containing 1,928 rooms and the displacement of 2,950 persons of the working class. About 1,500 of these may be regarded as only displaced temporarily, but in the case of the remaining 1,450 persons no rehousing is likely to be provided."

The General Powers Bill.—The Parliamentary Committee reported as follows:—

"The Select Committee who considered Part V. (Amendment of the London Building Acts) concluded their proceedings on July 7, 1909. The petitioners who appeared against this part of the Bill were the Institution of Civil Engineers, the Surveyors' Institution, and the Royal Institute of British Architects. The Superintending Architect, the Chief Officer of the London Fire Brigade, Professor Henry Adams, M.Inst.C.E., Mr. H. Searles Wood, F.R.I.B.A., and Mr. E. O. Sachs, Chairman of the British Fire Prevention Committee and of the Concrete Institute, gave evidence in support of the Council's case. The principal grounds of opposition were (i.) that the proposed legislation should not apply to the internal construction of buildings, and (ii.) that the matter should not be dealt with by specific enactment, but should form the subject of regulations to be made by the Council and approved by the Local Government Board. On June 29 the Chairman announced the decision of the Committee as follows:—'The Committee find as much of the preamble of the Bill as relates to Part V. proved, but they will require amendment to be made in subsect. (33) of clause 30, substituting for the Tribunal of Appeal an appeal to a metropolitan police magistrate. And in subsect. (34) they will require the insertion of words providing for an appeal to the Tribunal of Appeal from the decision of the Council under that section; and they will further require alteration to be made in clause 33 so as to more clearly define the fees to be paid on alterations.' Subclause (33) provided for an appeal against any requirement or decision of the District Surveyor, and, in accordance with the resolution on June 22, 1909, we had previously altered the subclause so as to make the appeal lie to the Tribunal of Appeal.

A large number of points of detail were raised by the opponents, but, with regard to them, the Committee substantially adopted the Council's proposals. We should also mention that we inserted an amendment in the Bill to provide that regulations to be made under the powers sought with regard to the use of reinforced concrete shall be subject to the approval of the Local Government Board."

Remuneration of Quantity Surveyors, York-road, Islington, W.—The Education Committee reported as follows, the recommendation being agreed to:—

The quantity surveyors who prepared the quantities for the improvements at the York-road school (Islington, W.) have claimed a fee of 1½ per cent. in respect of the main bill, 7,526*l.* 19s. 8d. The normal fee is 1½ per cent. We are of opinion that the claim should be allowed, in view of the nature of the work and the difficulty of preparing quantities. We recommend that Messrs. W. H. & P. B. Strudwick, quantity surveyors, be allowed 1½ per cent. in respect of the main bill (7,526*l.* 19s. 8d.) in the quantities for the improvements at the York-road school (Islington, W.).

Central Car Repairing Depôt.—After discussion, it was agreed (*a*) that the estimate of expenditure on capital account of 47,500*l.*, submitted by the Finance Committee in respect of the erection of the second section of the central car repairing depôt to be used in connexion with the Council's tramways, be approved. (*b*) That the estimate of expenditure on capital account of 11,500*l.*, submitted by the Finance Committee in respect of the provision of plant, tools, machinery, etc., and cables for power purposes required for the second section of the central car repairing depôt to be used in connexion with the Council's tramways, be approved. . . . . (*e*) That, subject to Charles Wall, Ltd., agreeing to give preference in employment on casual or unskilled labour required for the work to men *bonâ fide* resident in the County of London, the contract with Charles Wall, Ltd., for the erection of the first portion of the central car repairing depôt on a schedule of prices, entered into in pursuance of the resolution of November 12, 1907, be extended so as to include the erection of the second portion of the repairing depôt, subject to a deduction of 250*l.* from the total value of the work when measured up and valued on completion.

It was also agreed:—"That at the completion of the work a full report be made to the Council on the manner in which the undertaking to give preference to London labour has been carried out."

There was a long debate on the question. It was contended that the resolution of the Council that favour should be extended to London casual and other unskilled hands was not observed because men from the country came to town and slept a night in a common lodging-house in order to secure the London residential qualification.

Mr. Thompson, however, maintained that since the Council had passed the resolution the

Digitized by Google

proportion of London men employed had been increased.

Mr. F. Smith moved that the Council should urge contractors to give preference to London skilled, as well as unskilled, workers.

In seconding, Mr. Dew said there was much unemployment in the London building trade. Of about 100 members of the Brixton branch of the Carpenters' Union, thirty were in receipt of unemployed benefit.

The motion was lost.

Having transacted other business, the Council adjourned at a late hour.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Battersea.—A building at No. 230, Lavender-hill, Battersea, with a one-story shop in front (Mr. A. Whitelaw for the London and North-Western Railway Company).—Consent.

Clapham.—A projecting lamp at No. 6, Battersea-rise, Clapham (Mr. F. R. Simpson). Consent.

Hackney, North.—Porches in front of four houses on the eastern side of Castlewood-road, Hackney (Mr. S. H. Barclay).—Consent.

Hampstead.—An additional story to each of three bay-windows at Leinster-mansions, Langland-gardens, Hampstead (Mr. S. C. Lathbridge for the Mansions Consolidated, Ltd.).—Consent.

Kensington, North.—A wood and brick porch at No. 2, Barlby-road, St. Quintin's-park, Kensington (Mr. G. R. Holmes for Mr. A. Haley).—Consent.

Kensington, South.—A porch in front of No. 5, Cottesmore-gardens, Kensington (Messrs. Bourchier, Burmester, & Galsworthy for Mr. S. Redfern).—Consent.

Kennington.—A projecting porch and bay and oriel windows in front of No. 214, South Lambeth-road, Kennington (Mr. S. H. Burdwood for Mr. W. A. Head).—Refused.

Lewisham.—An addition at the rear of Nos. 33 and 35, High-street, Lewisham, to abut upon St. Stephen's-road (Messrs. Chiesman Brothers).—Refused.

Width of Way.

St. George, Hanover-square.†—An iron railing in front of the rear wall of No. 2, Wilton-crescent, St. George, Hanover-square, to abut upon the eastern side of Kinnerton-street (Allen & Mannooch, Ltd., for Lady Chetwode).—Consent.

Hampstead.—A lavatory and water-closet addition at the Bickersteth Memorial Hall, Christchurch-road, Hampstead, at less than the prescribed distance from the centre of the roadway of Grove-place (Mr. H. E. Church for the Trustees of the Bickersteth Memorial Hall).—Consent.

Width of Way and Lines of Frontage

Holborn.—A chimney breast at No. 45, Bedford-row, Holborn, to abut upon Hand-court (Mr. D. Joseph for Mr. J. Fryer).—Consent.

Stepney.—An addition at the rear of Nos. 27 and 28, Ford-square, Whitechapel, at less than the prescribed distance from the centre of the roadway of Rutland-street, and the erection of projecting architectural features, cornices, and a balcony in front of such building (Mr. E. H. Abbott for Mr. Finegold).—Consent.

Kennington.—An addition at the rear of No. 232, Wandsworth-road, Kennington, to abut upon Belmore-street (Mr. H. Bignold for Mr. Watcher).—Refused.

Width of Way and Space at Rear.

Limehouse.—A building at the rear of the German Sailors' Home, West India Dock-road, and Rich-street, Limehouse, to abut upon Beccles-street (Mr. G. Waymouth).—Consent.

Width of Way and Deviation from Certified Plans.

Whitechapel.†—A building on the site of No. 7, Fort-street, Stepney (Mr. F. Fox).—Consent.

Width of Way and Construction.

Poplar.—That the application of Messrs. S. Cutler & Sons, for an extension of the period within which the erection of a steel building at the Providence Ironworks, West Ferry-road, Millwall, to abut upon Devonshire-terrace, was required to be completed, be granted.—*Consent.*

Whitechapel.—The retention of a wood and iron shed of a temporary character at Nos. 37, 38, and 39, Duval-street, Whitechapel (Mr. C. E. Salmon for Mr. Maguire).—Consent.

Lines of Frontage and Construction.

Finsbury, East.—Construction of two external iron parcel carriers at the rear of Nos. 46 and 50, City-road, Finsbury, over the passageway leading from City-road to Bunhill-fields (Johns, Son, & Watts, Ltd.).—Consent.

Hackney, Central.—The retention of a wood and glass showcase on the forecourt of No. 54, Mare-street, Hackney (Messrs. Hinton & Co.).—Consent.

Deviation from Certified Plans.

Deptford.—Certain deviations from the plan certified by the District Surveyor under sect. 43 of the Act, so far as relates to the proposed rebuilding of the Navy Arms public-house, on the eastern side of New King-street, Deptford, abutting also upon the southern side of Prince-street (Messrs. Wyleon & Long for Truman, Hanbury, Buxton, & Co., Ltd.).—Consent.

Formation of Street.

Westminster.—That an order be issued to Messrs. Drivers, Jonas, & Co. sanctioning the formation or laying out of a new street for carriage traffic to lead from Tothill-street to Princes-street, Westminster.—Consent.

Alteration of Buildings.

Kensington, South.—Rooms upon the flat roofs of three buildings known as Sussex-mansions, Old Brompton-road, Kensington (Mr. W. H. Collbran).—Consent.

Cubical Extent.

Hammersmith.—Retention at the premises of the Wolfram (Tungsten) Metal Filament Lamps, Ltd., Brook-green, Hammersmith, of a building exceeding in extent 250,000 cubic ft., and to be used only for the purposes of the manufacture of filament lamps (Wolfram (Tungsten) Metal Filament Lamps, Ltd.).—Consent.

Whitechapel.—The retention, on the north-eastern side of Commercial-street, Whitechapel, to abut also upon the north-western side of Whitechapel High-street, of a building with the trade portion exceeding in extent 250,000 cubic ft. (Mr. J. W. Chapman for Venables & Sons, Ltd.).—Consent.

City of London.—Erection at Bell's-buildings, Salisbury-square, City, of a building to exceed in extent 250,000 cubic ft. (Mr. F. W. Foster for Mrs. C. W. Millar).—Refused.

The recommendations marked † are contrary to the views of the local authorities concerned.

MESSRS. DOULTON'S INSPECTION YARD GULLIES.

THE illustrations are plans and sections of two yard gullies, with provision for inspection, made by Messrs. Doulton. That on the left, called the "Hygeian," is designed to offer every facility for cleansing and sweeping the drain. The inspection cover consists of a plate fitting into a fixed frame, with tongue-and-groove, and secured by gun-metal screws.

That on the right, called the "Lambeth," has been designed to secure a small area and deep water-seal, while provided with a wide surface of grating to ensure thorough scouring action, and render the gully self-cleansing. The inspection-cover is provided with a galvanised iron cover fitted into a fixed galvanised frame. The cover is secured with gun-metal screws, and a reliable air-tight joint can be made. A Stanford-jointed stopper can be supplied if preferred.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Enlargement of Islington School.—For the enlargement of the Queen's Head-street school the tender of Messrs. W. C. Laughlin & Harvey, Ltd., 8,573*l.* 17s. 9d., was recommended. Architect's estimate, 9,290*l.*

Moorfields' Training College.—Alterations were authorised at a cost of 340*l.*, the work to be done by the local contractor for repairs at his contract schedule prices.

Painting Schools.—The following tenders were accepted:—

Bethnal Green: Mowlem-street.—F. & E. Dovey	£521 0 0
Fulham: Training College.—Lole & Co.	544 17 0
Townmead-road.—R. S. Ronald	556 0 0
Hackney: Oldfield-road.—Stapleton & Sons.	525 0 0
Bethnal Green: Mansford-street.—J. Haydon & Sons	310 18 0
Haggerston: Gopsall-street.—W. Silk & Son	342 0 0
Paddington: Campbell-street.—H. C. Clifton	405 0 0
Brixton: Acre-lane (M.D.).—Holliday & Greenwood, Ltd.	134 0 0
Norwood: Elm-court.—W. Young	123 0 0
Norwood Technical Institute.—W. Young	187 0 0
Gordon House Industrial School.—Speechley & Smith	158 0 0

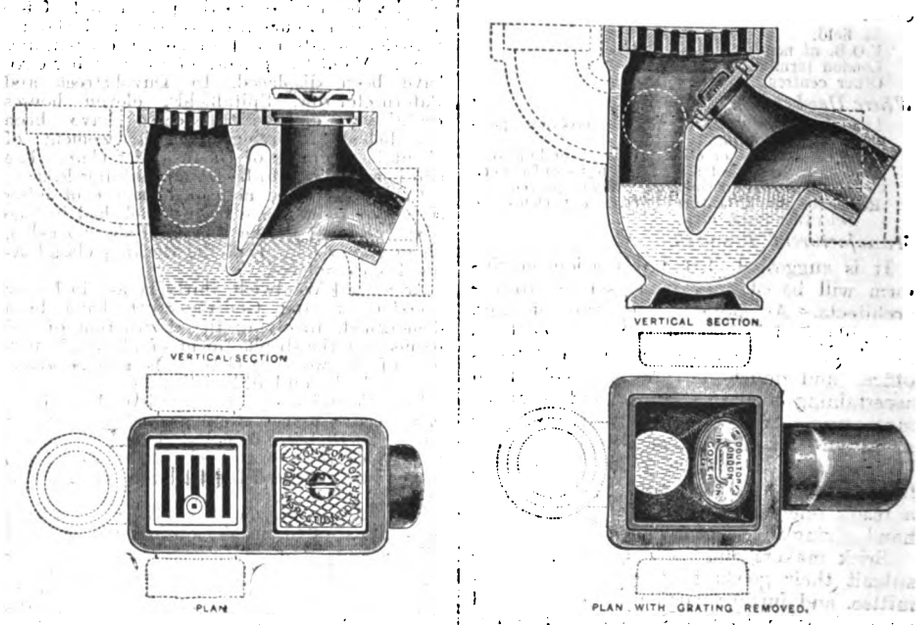
Lavender-hill School, Battersea.—For heating works the tender of Messrs. W. G. Cannon & Sons, 334*l.* 10s. (architect's estimate, 330*l.*), was recommended.

A Difficult Site.—Excess expenditure of 186*l.* was voted in connexion with the erection of new elementary school for 840 children at Laburnum-street, Haggerston. The Building Committee observed:—"The cost of the manual training centre was somewhat underestimated, and as regards the main building excess expenditure has been incurred in respect of foundations. Possession of the site, which was a part of some disused gasworks, could not be obtained, and trial holes could not, therefore, be sunk in accordance with the usual practice. The site, moreover, consisted of made-up ground and old foundations of retort-houses, and it was also necessary to remove the contaminated earth. The Council, when accepting the tender of D. W. Davies for the erection of the school, resolved to insert an additional clause in the contract to the effect that in the event of the work being completed at an earlier date than that set out in the contract, a premium, calculated at the rate of 10*l.* a week, should be allowed to the contractor. The amount of the bonus due to the contractor under this clause is 96*l.* 13s. 4d."

Bacon's Free School, Bermondsey.—The Trustees submitted plans for forming an assembly hall. The lowest tender received by the Trustees was 746*l.*, and it was proposed to do the work in the summer holidays. The plans were sanctioned.

Heating Works.—The following tenders were accepted:—

Bermondsey: The "Chaucer."—Tilley Bros.	£196 0 0
Fulham: St. Dunstan's-road.—Comyn, Ching, & Co., Ltd.	108 10 0
Hoxton: Chatham-gardens.—Tilley Bros.	101 10 0



Messrs. Doulton's Inspection Yard Gullies.

Digitized by Google

Work by Local Contractors.—Reporting respecting minor improvements, the Building Committee stated:—"In one case, Northwold-road (90*l.*) (Hackney, N.), a special estimate of 43*l.* has been obtained and accepted; in two cases, Plumstead-road (26*l.*) and Pope-street (39*l.*) (Woolwich), the expenditure is very small, and the work will, in the usual way, be placed with the local contractors; in three cases, Detmold-road (1,000*l.*) (Hackney, N.), Hanover-street (520*l.*), and Popham-road (620*l.*) (Islington, S.), tenders are being obtained; but in the remaining eight cases, St. John's-lane (160*l.*) (Finsbury, C.), Gayhurst-road (435*l.*) (Hackney, C.), Princeton-street (120*l.*), Rosebery-avenue (430*l.*) (Holborn), Station-road (180*l.*) (Islington, S.), Kilburn-lane (220*l.*) (Paddington, N.), West-square (205*l.*) (Southwark, W.), and the 'Shacklewell' (520*l.*) (Hackney, N.), there is not sufficient time in which to obtain tenders. It has been the practice in past years to carry out this class of work on the local contractors' schedules of prices for repairs, and as the work should be completed during the summer holidays, we are of opinion that authority should be given for the orders to be issued to the local contractors. For similar reasons we also propose that the work of dividing the large classroom at the County Secondary School, Brockley (Lewisham), for which the Committee on June 16, 1909, sanctioned expenditure of 100*l.*, and the work in connexion with the provision of a boiler flue at the Upper North-street school (Poplar), for which expenditure of 70*l.* was sanctioned, shall be executed by the local contractors." The various recommendations in this report were adopted.

New Sites.—It was decided to secure Parliamentary powers for ten properties, three of which are required for purposes in connexion with the remodelling of London County Council schools, three for occupation by schoolkeepers, one for the possible enlargement of a London County Council school, one for the formation of an entrance to a special school, one for the enlargement of a site, and one for the provision of domestic economy centre and the enlargement of playgrounds. The properties are in Battersea, Bermondsey, Bethnal Green, N.E., Clapham, Deptford, Hammersmith, Hoxton, Islington, W., Kennington, and Lewisham.

New School for Wandsworth.—It was suggested to secure a site in Standen-street, Wandsworth, so that a new elementary school may be commenced without delay.—Postponed.

Tooting School.—It was decided to take the necessary steps to notify the intention to provide a new school for 800 at Tooting.

PUBLIC ABATTOIRS.

MR. S. M. DODDINGTON, at the International Congress on Anti-Vivisection and Protection of Animals, dealt with the question of the provision of abattoirs, and gave many hints upon their construction. He said:—"I have had a great deal of experience in slaughter-houses, both public and private, throughout England, and also visited public abattoirs in many European countries, especially in Germany, where they have reached a very high state of perfection. The latest abattoirs in Germany, Switzerland, and Holland are excellent examples of what an abattoir should be. Some of the so-called 'public' slaughter-houses are simply disgraceful, and ought not to be called public at all. In many cases they consist simply of a row of very bad ordinary private slaughter-houses and lairs rented off to various butchers, and under no public control or supervision whatsoever, and generally situated in a very rough and bad quarter of the town. There is also the better class of English public slaughter-house which boasts an entrance gate and a certain amount of supervision by a foreman. In nearly all these types the slaughtering is carried on in separate compartments rented by the butchers, and at the best it is nothing more or less than a collection of private slaughter chambers, and there is little organisation or discipline, while the officials are, as a rule, too few, and their position is not appreciated or respected as it should be. The slaughtermen come and go, and slaughter how they please under little or no supervision. Very frequently these so-called public slaughter-houses are erected in an inconvenient place, that is, away from the cattle market, and they hardly ever possess a destructor for bad meat; consequently long journeys have to be made to the town destructor with condemned carcases. One of the largest and most modern abattoirs in England is some very considerable distance from the cattle market, and the controlling superintendent of the abattoir, instead of having his office in the building, has it some little distance outside, to the inconvenience of himself and all those who wish to see him at the abattoir.

The public abattoir should be side by side with the cattle market, and the latter should be either abutting the main railway line or joining the same by a branch line; this enables the animals to come right from the trains to the cattle market, and then after sale straight away into the abattoir lairages to await slaughter, without having to be driven through the town.

On the Continent the abattoir—almost invariably combined with the cattle market—is generally one of the very best constructed buildings in the town. The cattle markets are frequently under cover, especially in Germany, and are in themselves handsome buildings, and are excellently controlled in every detail. They are placed near the railway line, with platforms for animals arriving by train.

The abattoirs are handsomely laid out on a large and comprehensive plan, and are sometimes among the finest municipal buildings in the town, and are very frequently set off with trees, grass plots, and gardens. Smoking is forbidden except in the 'Café Abattoir.' At one Dutch public slaughter-house there is a very fine billiard-room for the men.

The best abattoirs have baths both for officers and men, as well as the usual changing-rooms, and the slaughtermen are not allowed to leave the abattoir until the have removed the traces of their trade; there are also excellent restaurants and all comforts of every description in the best regulated establishments.

The abattoirs consist as a rule of official residences, offices, slaughter halls (in the case of old-fashioned abattoirs frequently apartments instead of halls), lairs for animals, condemned meat destructor, pathological laboratory, cold-storage room and plant, rooms for dealing with by-products, and also skin and hide market, restaurant, etc., and various other necessaries connected with the meat trade. The abattoirs for medium-sized and small towns are less elaborate. The slaughtering takes place in large halls, with glazed brick walls and tessellated floors.

The older types of abattoirs in France especially are erected on the 'compartment system,' which does not admit of such thorough control as the 'hall system.' Curiously enough, in Spain one comes across the 'hall system,' while in certain towns in Italy and France there is a combination of the compartment system for hanging the dead meat with an open slaughter-court for killing, which permits the officials full control of many butchers killing at the same time. The famous Paris abattoirs are on this system.

It is to be hoped that the abattoirs of the future in England will be erected on different lines from those of the past, and that the whole organisation of their personnel and general management will follow the lead of the best continental examples. There is hardly an abattoir in the kingdom equal to present-day requirements, and some of our latest public slaughter-houses are constructed on the obsolete 'separate chamber system,' which has been long condemned abroad, as this method of construction does not admit of perfect supervision by the officials on duty, and it is at the same time a more complicated and costly way of building, and a great deal of cruelty can still take place undetected in the 'separate chamber' system, as the officials cannot supervise all the different slaughtering chambers at once, as they can in the large modern halls.

In foreign abattoirs a certain portion of the building is reserved for killing horses, donkeys, etc., as not only are ordinary private slaughter-houses not allowed to exist in the towns, but 'knackers' yards' as well are prohibited, and the horse meat trade is under the same supervision as ordinary meat."

LONDON DRAINAGE BY-LAWS.

AT the meeting of the St. Pancras Borough Council on Tuesday a report was submitted from the Medical Officer of Health (Dr. J. F. J. Sykes) upon the drainage by-laws made by the London County Council. The matter originated from a communication received from Hampstead Borough Council drawing attention to a decision of the Divisional Court, the result of which was that the practice of proceeding against the responsible person who actually carried out drainage work would be no longer open to the Metropolitan Borough Councils, but inquiries would have to be made as to who was responsible for the work being done, *i.e.*, the person who had given the order to the builder. Dr. Sykes expressed the opinion that it was most desirable that the St. Pancras Council should support the action of the Hampstead Borough Council in urging upon the London County Council that the by-laws should be amended so as to validate the practice which has hitherto existed. The Medical Officer went on to say that an interpretation clause was not only required for the purpose of making it clear who is the person who should deposit plans and the person who should comply with the requirements of construction of drainage, but also for the purpose of making it clear what is a rain-water pipe, a waste pipe, a soil pipe, etc. There are no definitions of these. Rain-water pipes and waste pipes are not allowed to be in structural continuity with a drain, but the highest point of a drain is the top of the vent pipe, and the soil pipe and the vent pipe are in structural continuity with a drain, but neither a soil pipe nor a vent pipe appears to be a drain, nor is there anything to show where a soil pipe ceases and a drain begins. There is no reason why a soil pipe or a drain should not be vertical, oblique, or horizontal in direction; mere verticality cannot convert the drain into a soil pipe, nor can horizontality convert a soil pipe into a drain, as either pipe of either kind may assume either direction. The only conclusion that it appears possible to draw is that a soil pipe becomes a drain as soon as it is joined by a branch, whether that branch carries soil, waste water, or surplus water, one of these, or any two, or all three. Similarly it is possible for a branch of a drain to carry only waste water or only rain water, and from the trapped gully where it commences to run horizontally or vertically or obliquely to the point where it joins the main drain or another branch. There does not appear to be any valid reason why the gully or gullies receiving waste water or rain water should not be situated at a roof level, or at any higher level than the absolute ground, provided that the piping is in iron. Dr. Sykes laid special emphasis upon the point that it is possible to construct drainage much more advantageously under disadvantageous circumstances in iron than in earthenware, and that it is desirable that special by-laws or provisions should be made for construction in iron. For instance, it is possible to conceive an iron drainage system, with a manhole situated on the first floor and gullies slung on the wall; in fact, this is the manner in which the officers' building of the London and North-Western Railway Company, on the east side of Cardington-street, is drained, being built on iron columns from the ground upward, so that the basement and ground floor are absent in order to make room for rolling stock, and so that the drainage is raised sufficiently to discharge into the sewer in Cardington-street. This is an exceptional case, perhaps, but there are other cases which illustrate similar requirements, and the construction of drainage in iron gets over many difficulties which would be insuperable if constructed in earthenware and carried out strictly in accordance with the by-laws as at present framed and interpreted. For instance, it should be permissible to discharge a trapped iron gully into an iron soil pipe, provided that the point of junction is furnished with a clearing eye, gas and water tight, and that the trap of the gully is secured against siphonage and kept constantly charged by a waste pipe or pipes, and not only by rain water pipe or pipes, and that the gully opening is situated in the open air. The Medical Officer proceeded to state that there was no provision in the by-laws referring to subsoil drainage against the reflux of sewage into a subsoil drain. Some such provision as the following is required:—"He shall cause such traps to be provided with a suitable ball or valve which will effectually prevent any reflux of sewage into the subsoil drain from the sewer or drain carrying sewage into which the subsoil drain discharges; and he shall provide on the subsoil drain side of the trap a manhole, and along the bottom of this manhole a half-channel pipe, and over the top of this manhole a grating so that any reflux of sewage into the subsoil drain can be readily seen." Another point to which Dr. Sykes wished to draw attention was that by-law 3 (first paragraph) of the drainage by-laws is constantly being interpreted to mean that a rain-water pipe must be taken directly downwards to discharge over or into a trapped gully, and often inside a house. For years he had advised architects, builders, and others to keep the rain or surface waters as high as possible, as long as possible, in order to retain as much heat of water or gravitation as possible, so as to enable the rain water to be carried from roof to roof and surface to surface to any necessary distance to the lowest open area where a gully may be placed. He recommended that in order to facilitate this, to the end of the first paragraph of by-law 3 of the drainage by-laws, which regulates the discharge of rain-water pipes, the following words be added:—"Or over a channel, or into a hopper head, or on to a roof or other impervious properly-levelled and drained surface." A copy of the foregoing report is to be forwarded to the London County Council.

Digitized by Google

JULY 17, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

JULY 16 to 23.

The Architectural Association.—Exhibition of work done in the School of Architecture, also an exhibition of A.A. Prize Drawings and Designs, executed in the School of Design. The Drawings will be on view from 10 a.m. to 7 p.m. from July 16 to July 23, at 18, Tufton-street, Westminster.

SATURDAY, JULY 17.

Junior Institution of Engineers.—Visit to the Ordnance Engineering Works of Messrs. Vickers, Sons, & Maxim, at Erith. 10 a.m.

WEDNESDAY, JULY 21.

Builders' Foremen and Clerk of Works' Institution.—Half-yearly meeting of the members.

Bristol Society of Architects.—Excursion to Tewkesbury, Deerhurst, and Gloucester.

SATURDAY, JULY 24.

Architectural Association.—Third summer visit, to Ardenrun, near Lingfield. (A House by Mr. Ernest Newton.) The party will travel from Victoria (L.B. & S.C. Rly.) by the 2.25 p.m. train.

MONDAY, JULY 26.

Builders' Benevolent Institution.—Annual general meeting and committee meeting.

TUESDAY TO FRIDAY, JULY 27 TO 30.

Institution of Mechanical Engineers (Liverpool Meeting).—Reading and discussion of papers and visits.

Fifty Years Ago.

FROM THE *Builder* OF JULY 16, 1859.

THE STATE OF THE THAMES.

IN order to learn how much of the effluvia complained of depends upon the action of the steam-packets and the rays of the sun on the mud-banks, we proceeded early in the morning the other day to the Thames banks near Limehouse: no steamers were moving on the water, the tide was high, and Father Thames seemed still and sleeping. The banks of mud were deeply covered with water, and yet a smell—substantial—most difficult to describe, and very sickening, polluted the air, and proved, that however bad the shores may be at low tide, the water itself is the chief source of annoyance. Last summer we mentioned the effects of the splash of early oars in the stream, and now the evil is even worse. The waterman who ferried us across the river, said, "You see it is as bad as stirring up a cesspool." As the business of the river became active, the smell became worse, and polluted the neighbourhood to a greater distance. Throughout several hours of the day we noticed that at the steam-boat piers, where the water was kept constantly in motion, the smell was more offensive than in other parts. The black and pestiferous waves seem to be getting more and more loaded with solid matter, and threatening that if something effectual be not soon done, the power of steam will not suffice to drag vessels through the slime. It cannot be doubted that the action of the steam-packets makes the evil more offensive to the senses, but by circulating the water, it causes much that is hurtful to be carried away. Near Hungerford Suspension-bridge, before low water, we saw a steam-packet aground, causing much inconvenience to the passengers, and we were told that this was not unusual.

*** This shows what has been effected by improved drainage and the embanking of the Thames.—ED.

Illustrations.

"DAWN HOUSE," WINCHESTER.

THIS house is built on high ground well to the west of Winchester, on a site sloping considerably from north to south.

The materials used are, for the general wall facing, Chichester clamp bricks of varying shades, with dressings of deep-red Wrotham bricks. The tiles were also from Wrotham.

The contractor for the house was Mr. Wise, of Deal; for the motor-house and all the garden walls, steps, etc., Messrs. Mussell-white & Sapp, of Basingstoke. The clerk of works was Mr. Wells.

The architect for the house, motor-house, and gardens was Mr. Ernest Newton.

"LUCKLEY," WOKINGHAM.

THIS house has been built on a well-timbered site to the south of Wokingham.

The walls are faced with Chichester clamp bricks of varying shades of colour. The angles and the jambs and heads of the windows are of deep-red Wrotham bricks. The roof tiles are deep-red, hand-made Wrotham tiles.

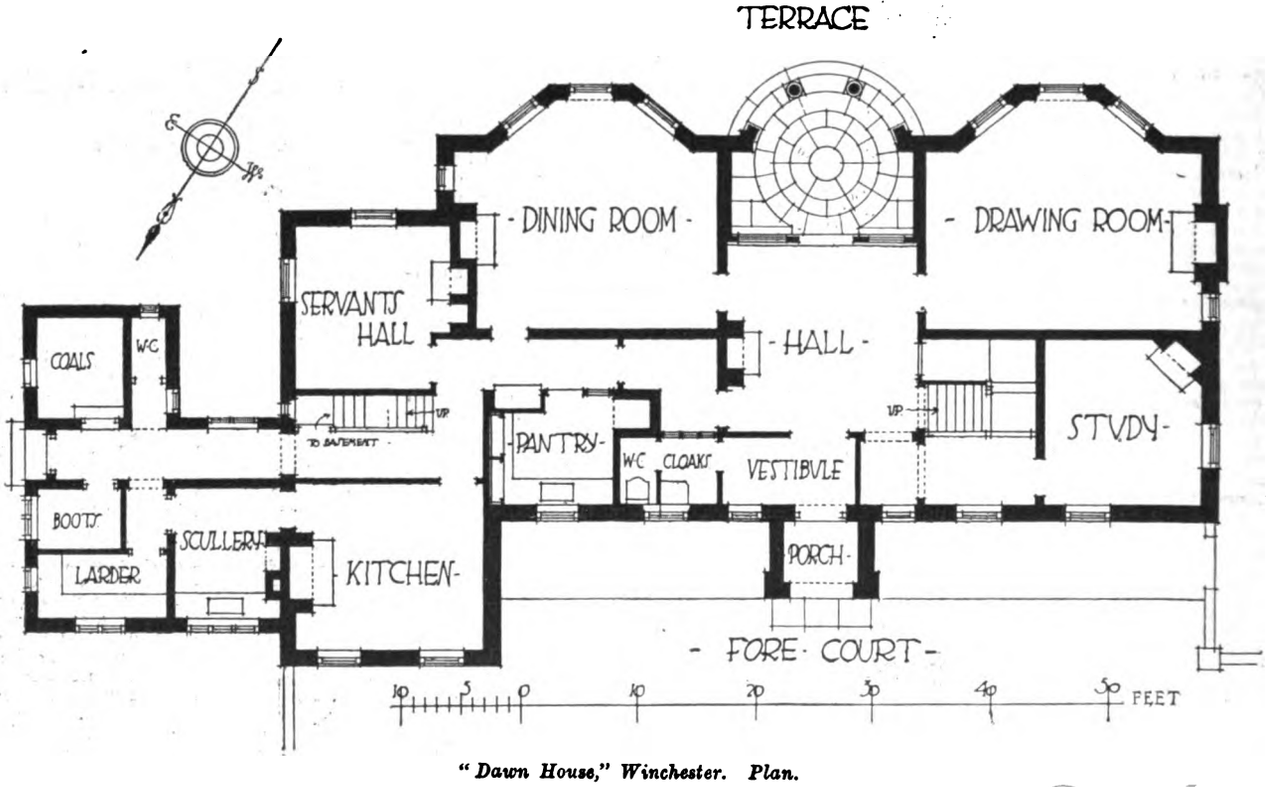
The builder was Mr. Seward, of Wokingham.

The lead glazing and casements were supplied by Messrs. Wenham & Waters, of Croydon.

The architect was Mr. Ernest Newton.

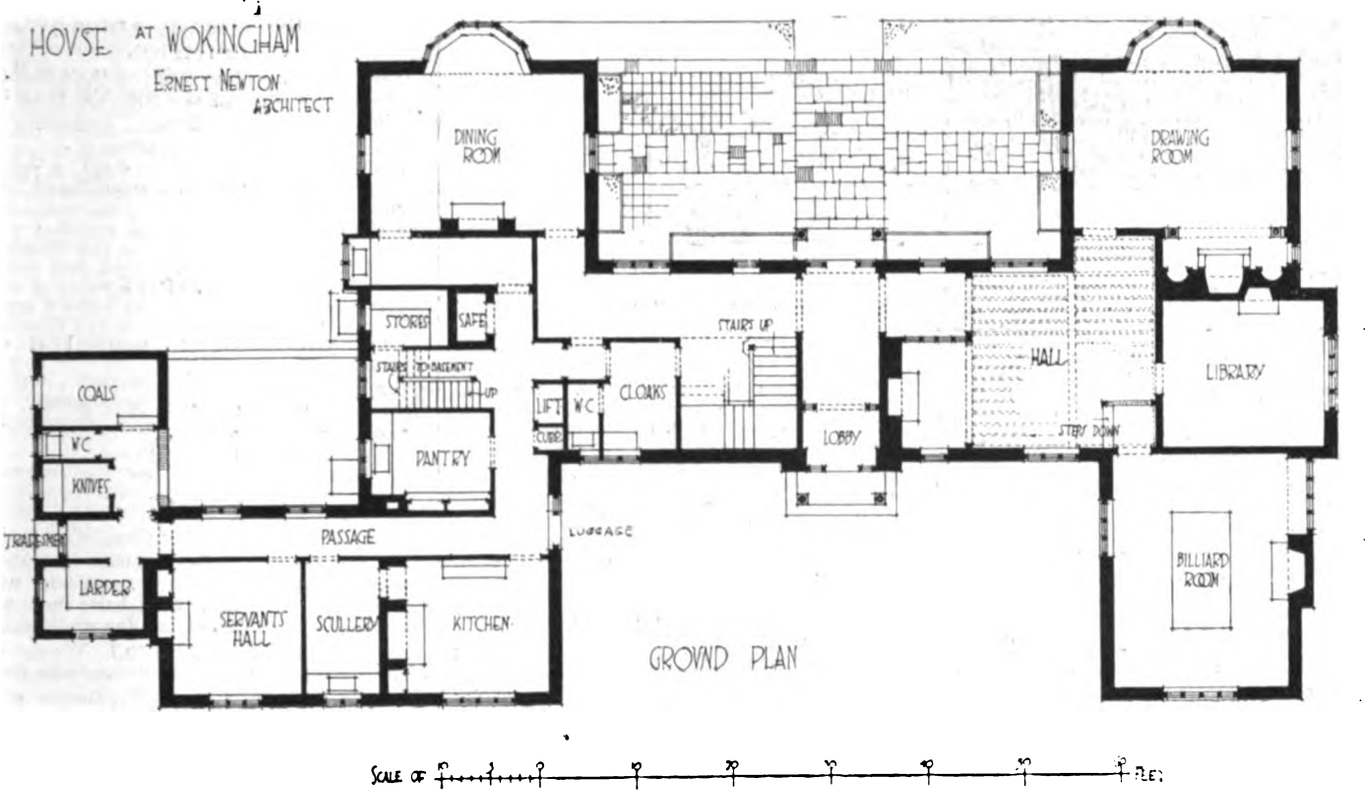
HOUSE AT DUNSLEY.

THESE plans show alterations and additions to a commonplace house at the little village of Dunsley, near Whitby. The plans sufficiently show the extent of the alterations, but it should be explained that a governing factor



"Dawn House," Winchester. Plan.

Digitized by Google

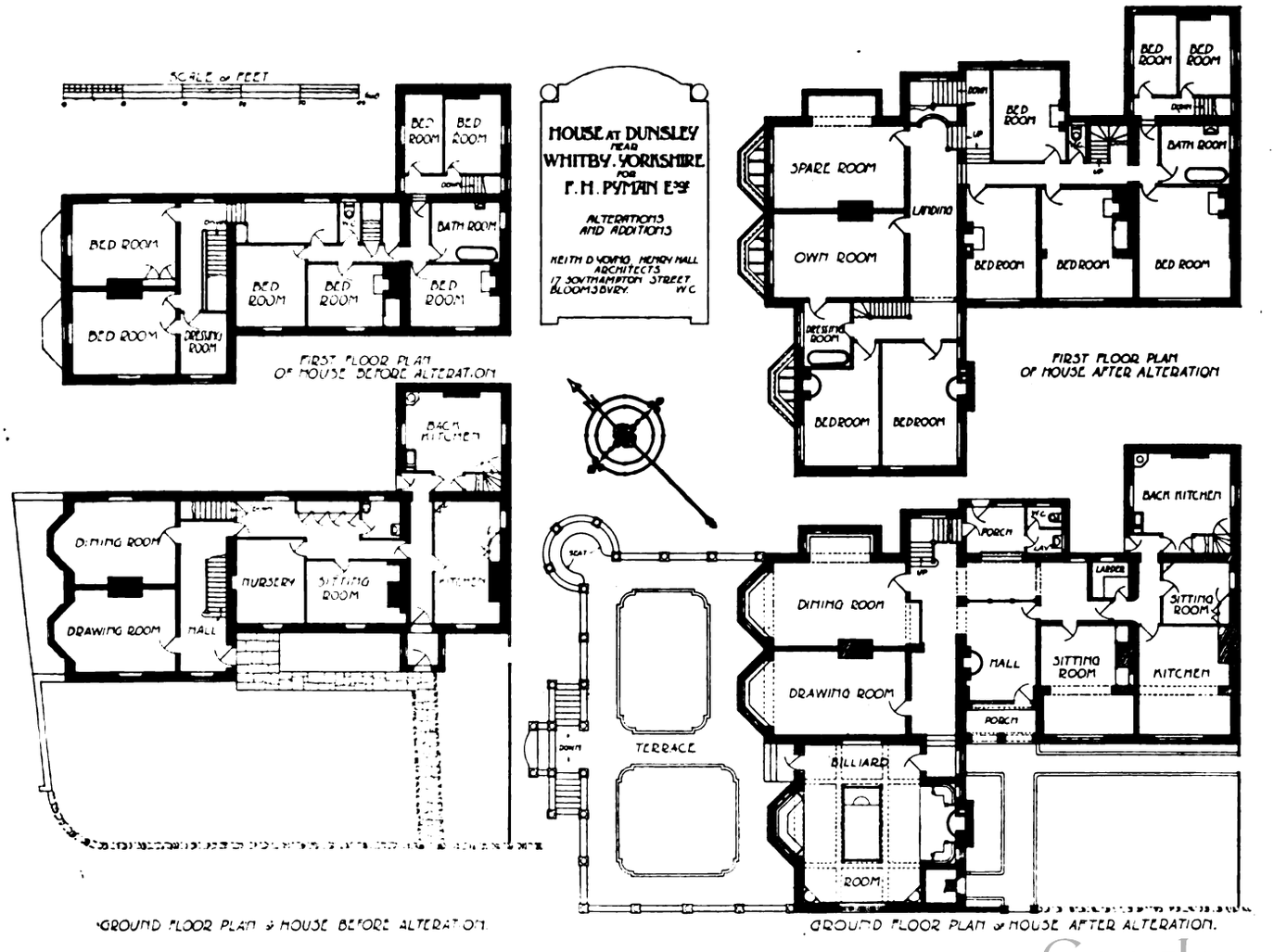


in the elevations was the fact that the old roof was not taken off but only added to, and this determined, of course, the pitch of the gables.

The whole of the masonry was carried out by Mr. Richardson, of Newholm, near Dunsley. He also did the carpenters' work and some of the joinery. The billiard-room is panelled throughout, both walls and ceiling, and has a somewhat elaborate mantelpiece and fitted seats in the ingle nook and bay window, as well as corner cupboards. All this work, which is in wainscot, was carried out by Messrs. Walker, of Darlington. The hall, which was the first portion of the work to be carried out, is also panelled in wainscot and has a wainscot screen. This work was carried out by Messrs. Parkinson, of Southampton-row. In all the windows thoughout the casements are of gun-metal, and were supplied by Messrs. Goddard & Sons. Messrs. Young & Hall are the architects.

DESIGN FOR A FOUNTAIN FOR A PUBLIC PARK.

THIS is the design placed second in the *Builder* competition for a design for a



Digitized by Google

Elevation of House at Dunsley, before Alteration (see page 73).

fountain to be placed in a public park or garden, for which, as already stated, the first prize was not awarded. This is, therefore, in the judgment of the three assessors, the best design sent in. Its points were considered in the review in our issue of July 10 (page 46).

The author is Mr. Harry B. Laycock, of 7, Chapel-walks, Manchester.

Competition News.

LISCARD LIBRARY.

In our account of this competition in our issue for July 3, we state that the first place was awarded to Messrs. MacColl & Tonge, of Southport. This should have been Mr. R. B. MacColl, Bolton, and Mr. G. E. Tonge, Southport, joint architects.

ISOLATION HOSPITAL AT SURBITON.

Messrs. T. A. Lodge, T. O. Foster, and P. W. Lovell have been successful in this competition. The District Council are to communicate at once with the Local Government Board, and as soon as that body has approved the plans the architects are to draw up the specifications, etc. Messrs. Lovell & Lodge expressed themselves strongly, in answer to a question, in favour of a quantity surveyor being employed, but Mr. Lovell pointed out that the suggested remuneration of 1 per cent. was very small. A motion was subsequently adopted that a quantity surveyor be employed provided that one could be obtained to do the work for 1 per cent.

TOWN HALL FOR MARYLEBONE.

The President of the Royal Institute of British Architects was asked by the General Purposes Committee of Marylebone Borough Council to nominate three gentlemen who would draw up a report and preliminary sketch-plans as to the suitability and adaptability of any site or sites for the erection of a new Town Hall. Of the three names submitted by the President, the General Purposes Committee selected Mr. H. V. Lanchester, of Messrs. Lanchester & Rickards, 47, Bedford-square, W.C., whom they asked to report upon the site of St. Marylebone Charity School for Girls, and that in Seymour-place, bounded by Nutford-place, Brown-street, and Queen-street, after he had been furnished with particulars of the accommodation required. Messrs. Lanchester & Rickards have now drawn up a report, in which they say that it was clear to them from the first that the site in Seymour-place was ample in area. If this site was adopted, they recommended that an open square should be formed at the south end 200 ft. long and 100 ft. wide, and that the principal façade of the building should front on to this. They could see no disadvantages in this site beyond its less central position, and it is not abutting on to any important thoroughfare. The Marylebone-road site required a more detailed examination, as there was considerable doubt whether the requirements of the Council could be accommodated on the area available. They had prepared a sketch-plan, and their conclusion was that the area is sufficient, provided that the various officials' departments are not in all cases limited to a single floor. The cost of constructing the building would be practically the same, whichever site was adopted, and would be approximately 44,000*l.*

Trade Catalogues.

THE introduction of metallic filament lamps for electric lighting has largely increased the number of private installations which make use of gas or petrol for generating electricity. These small installations practically always use direct current systems, so as to enable them to store the energy by means of accumulators. In order also to get the full advantage of the new lamps they generate at low voltages. We have received from the Tudor Accumulator Company, of Victoria-street, a catalogue giving a list of batteries made up of fourteen or twenty-seven cells, which are suitable for 25 or 50 volt installations. Some very small batteries are listed, but they are all of the standard type, and the prices seem reasonable. The large type of Tudor cell is very well known to electrical engineers, and is very extensively used, both in this country and abroad. Anyone contemplating installing the electric light in a country house would do well to obtain this catalogue.

Three small sheets containing particulars of some of the well-known "Yale" locks have been sent to us. The three locks shown are a rim dead lock, a rim dead-locking night-latch, and a rim dead-locking shop-door latch with lever handles.

The General Electric Company send us copies of their latest "Freezor" fan and punkah lists, describing and illustrating numerous patterns of desk, bracket, and ceiling fans for use in houses, offices, hotels, steamships, railway carriages, and other places. In the first-mentioned catalogue particulars are given of small electric motors which ought to be found very useful for driving sewing machines, emery wheels, and other appliances requiring from 1-30 to 1-7 h.p.

Weldless Chains, Ltd., of Coatbridge, send us their new circular giving particulars of the "Universal" patent chain adjuster, a device for shortening, joining, or regulating the length of chains and slings used by contractors and others. This adjuster is a very simple and apparently efficacious appliance. It can be applied to chain of any type from ¼ in. to 1 in. diameter.

Messrs. Richmond & Co. send us two sheets on which are illustrations of various types of electric, hydraulic, and hand lifts, cranes, and hoists, lift cars for passenger service, electric lift gears, and hydraulic accumulators and accessories. Although no details are furnished, these catalogues are sufficient to indicate the comprehensive range of hoisting appliances made by the firm.

BOOKS RECEIVED.

VALUATION OF REAL PROPERTY. By Clarence A. Webb. (Crosby Lockwood & Son.)

HANDBOOK ON TACHEOMETRICAL SURVEYING. By C. Xydis. (E. & F. N. Spon. 97 pp. 6s.)

Correspondence.

"A DIPLOMA COURSE IN ARCHITECTURE."

SIR,—No unbiassed mind in reading, in your issue of the 26th ult., my defence of the educational system of the Architectural Association would agree with Professor Reilly in thinking that personal feeling led to my writing to you on the subject. My arguments speak for themselves. I have not mistaken the point at issue. Professor Reilly has not shown that the general character of the Association's work is wrong. Like most other systems (possibly even that of the Liverpool University), it may not be perfect, and I feel sure the Council (though I have no right to speak on their behalf) would welcome any exhibition of work done by the students of the various schools, which would show by comparison with others what the Association is doing.

W. H. SETH-SMITH.

*** The above letter was sent for publication in our last issue, but arrived too late.—ED.

MIDDLESBROUGH LIBRARY COMPETITION.

SIR,—We have now received the following reply to our letter of the 30th ult. from the Royal Institute of British Architects in regard to the above competition:—

"July 9, 1909.

Middlesbrough Library Competition.

DEAR SIRS,—I am desired by the Council of the Royal Institute to inform you that your letter of June 30, addressed to the President of the Royal Institute, has been laid before them by the President, and as a result of their inquiry into the subject of your letter I am to inform you that the decision of the Competitions Committee has the approval of the Council.

Faithfully yours,
(Signed) IAN MACALISTER,
Secretary.

Messrs. Hoskins & Brown,
Kitching & Lee, and
W. H. Bourne, Houndgate-chambers, Darlington."

We now propose taking Counsel's opinion as to the position of the competitors in this competition. Would those architects who signed the memorial, who have not yet forwarded the 5s. asked for, for preliminary expenses, kindly do so at once? We should also be pleased to receive subscriptions from any other architect who sympathises with the object in view.

Any future action, after Counsel's opinion is obtained, will be left to the subscribers. Whatever Counsel's opinion may be, architects will, at least, have the opportunity of knowing their legal position in future competitions.

HOSKINS & BROWN.
KITCHING & LEE.
W. H. BOURNE, A.R.I.B.A.

Houndgate-chambers,
Darlington, July 12.

ARCHITECTURAL COPYRIGHT AND PROFESSIONAL ETIQUETTE.

SIR,—I have lately completed a small bath for a famous school in West London, at the cost of no inconsiderable thought and labour in an endeavour to perfect it in detail.

I hear that quite an embarrassing number of visitors, including representatives from educational bodies in many parts of the kingdom, have inspected this little building during the few months it has been in use, and that many of them were architects "on their own," or in attendance upon the said bodies. It is due, no doubt, to the prestige of this particular school rather than to any particular merits in the bath.

Now, as far as I am concerned, they are all welcome, both laymen and architects. We have no copyright in our work, and I for one am doubtful of its advantages—at any rate, in the interests of architecture. But I think it is a matter of custom (or at least good form) among architects to ask a man's permission before visiting his building—at any rate, until it is out of his hands.

I hope that this protest may reach some of those who dispensed with this small courtesy.

S. S.

THE SERPENTINE.

SIR,—With reference to your comment on the reprint from the *Builder* of fifty years ago about the Serpentine, I can distinctly remember, as a lad of about eight or ten years of age, or very nearly forty years ago, seeing the Serpentine drained dry (except for a narrow trickle of water down the middle), and huge piles of mud on the banks, more especially on the side by Rotten Row. My remembrance is that I was told it had been drained to be cleaned out.

SERPENTIUS.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

BRISTOL.—Workshops near graving dock, for Messrs. Jefferies & Sons, Ltd., engineers, etc., Docks, Avonmouth, Bristol.

Burnham.—County school (3,000*l.*). Messrs. Cottam & Sampson, architects, High-street, Bridgwater.

Chatham.—The Town Council has passed the following plans:—Two houses, Dale-street, Mr. A. G. Webb; two houses, Victoria-road, Mr. H. S. Bow; corn stores at Gibraltar Farm, Messrs. H. Gurr & Son.

Cranford (Middlesex).—Two houses, Bath-road. Mr. F. E. Green, 54, High-street, Uxbridge.

Digitized by Google

Gloucester.—Additions to Council school. Messrs. Medland & Pryer, architects, 15, Clarence-street, Gloucester.

Horfield (Bristol).—Public hall. Mr. W. J. Stenner, architect, Guildhall-chambers, Broad-street, Bristol.

Hove.—Extensions at the Sanatorium (5,477*l.*). Messrs. J. Parsons & Sons, builders, 176, Church-road, Hove.

Newport (Barnstaple).—Residence (1,500*l.*). Messrs. Oliver & Son, architects, Bridge-street, Barnstaple.

Newton Abbot.—County secondary school (6,000*l.*). Mr. Percy Morris, architect, 1, Richmond-road, Exeter.

Plymouth.—The Town Council has passed the following plans:—Ten houses, Salcombe-road, Mr. H. Foster; pair semi-detached houses, Crompton Park Villas-road, Mr. J. Tellam; skating-rinks and offices at old Soap Works, Millbay, for the Rinkeries, Ltd.; alterations to St. Peter's Schools, Wyndham-square, for the Managers.

Presteign.—Residence (1,200*l.*). Mr. W. W. Robinson, architect, 10, King-street, Hereford.

Rotheram.—The Town Council has passed the following plans:—Nineteen houses, Cambridge-street, Mr. T. Green; pair semi-detached houses, Broom-road, Mr. Walter Bell: eight houses, Selbourne-street and Lindley-street, Messrs. Charles Green's Sons; alterations and additions to Nos. 145 and 147, Wellgate, Mr. A. V. Coleman; warehouse, Northfield, for the Masbro' Equitable Pioneers' Society, Ltd.: School, Moorgate, for the Rotherham Education Committee; eleven houses, Blackburn, Mr. William Cooper; skating-rink, Drummond-street, for the Sheffield and Provincial Skating Rink, Ltd.

Sutton.—The District Council has passed the following plans:—Four houses, Warwick-road, Mr. C. W. Stacey.

Torquay.—The Town Council has passed the following plans:—Two houses, Teignmouth-road, Mr. H. E. Williams; two houses, Teignmouth-road, Mr. Riggs; two houses, Reddenhill-road, Mr. J. Gordon; two houses, Livermead, Mr. F. Penwill; additions to the Western Hospital, for the Management Committee: five houses, Westhill-road, Upton, Mr. A. J. Sampson; Palace of Varieties, Market-street, Messrs. Bridgman & Bridgman, architects.

Tunstall.—The Town Council has passed the following plan:—Extension to bakery, High-street, Goldenhill, Mr. H. D. Sillito.

Walsall.—Extension of electricity works, Wolverhampton-street. Mr. Alexander Wyllie, electrical engineer, Walsall. The following plans have been passed:—Additions to factory, Teddesley-street, Messrs. Heath, Machin, & Co.: church and outbuildings, Dale-street, Palfrey, for the Trustees; three houses, Blakenall-lane, Bloxwich, Mr. B. Niggeman.

Wanstead (Essex).—Free library (4,000*l.*). Surveyor, Urban District Council Offices, Wanstead, Essex.

Warrington.—The Town Council has passed the following plans:—Nine cottages, Cyril-street, Mr. Charles Simpson; nineteen pairs of houses, Dorothea-street and Rhodes-street, Mr. George Smith; steel mill, Orford-street, Messrs. Peter Stubs, Ltd.; eleven houses and shop, Chester New-road, Mr. Thomas Williams.

Westbury.—Garage and offices, Bristol Tramways and Carriage Company, Ltd. Mr. W. H. Watkins, architect, 15, Clare-street, Bristol.

Wigan. — Plans have been passed as follow:—Six houses, Westminster-street, Mr. E Hesketh; two houses, Barnsley-street, Mr. M. Clayton; five houses, Walkden-avenue, Messrs. W. & J. Johnson; two houses, Kenyon-road, Mr. T. A. Aspinall; six houses, Schofield-lane, Mr. W. Darbyshire.

Worcester.—Six houses, Hall-green. Mr. H. Gregory, builder, Olton, Warwickshire.

WESTMINSTER CITY COUNCIL.

At the fortnightly meeting, held on Thursday of last week, the following were considered among other matters:—

Widening of Beak-street.—The General Purposes Committee reported in reference to the granting of a ninety-nine years' building lease in connexion with property belonging to the Board of Education in Beak-street, the lessee agreeing to expend not less than 10,000*l.* in building a police barracks on the site. The improvements Committee had carefully considered the question of the widening of Beak-street in connexion with the building, but they now stated that they were of opinion that it would be inexpedient to proceed with any improvement at this spot at the present time. It was accordingly resolved to inform the Board of Education that the Council had no observations to offer on the proposed order.

Annual Paving Work.—The Works Committee again brought up their report recommending the acceptance of the tender of the Acme Flooring and Paving Company, Ltd., for repaving Belgrave-square with yellow deal, at a cost of 11,345*l.* A proposal to again refer the matter back to the Committee for further consideration was lost, and the recommendation was agreed to.

Painting Works at Public Conveniences.—On the recommendation of the Works Committee, it was agreed to issue instructions for tenders to be obtained for painting works at fifteen public conveniences, at an estimated cost of 171*l.* 15s.

A New Street.—Commenting on an application to the London County Council by Messrs. Drivers, Jonas, & Co. for consent to the formation of a street 40 ft. wide, to lead from Tothill-street to Princes-street, S.W., constituting part of the Parker-street improvement, the Works Committee pointed out that the applicants had already agreed to a condition imposed by the City Council that the new street should be formed, sewered, and lighted to the specification of the City Council, at the entire cost of the applicants. After receiving a report from the City Engineer, the Committee had informed the London County Council of their views with regard to the proposal, and had pointed out that the information given on the plan accompanying the notification was incomplete, there being no indication of any provision for sewerage or surface drainage, or for street lighting. The camber of the carriageway should be 2-in. rock asphalt, the kerbs 12 in. by 8 in. granite, laid flat on at least 6 in. depth of concrete. The footways should be of 3-in. York flagging, no stone being less than 3 ft. square. The reinstatement of existing street surfaces and any connexions to sewers should be done by the City Council at the applicants' cost.

Widening of North Audley-street.—The City Engineer was instructed to carry out works to the footways, &c., in front of Nos. 40 to 42, North Audley-street, which have been rebuilt and set back, at a cost of 700*l.*

Wardour-street, Widening.—On the recommendation of the Improvements Committee, it was agreed to pay 1,000*l.*, plus a surveyor's fee and solicitor's costs of conveyance, for the leasehold interest in 52, Wardour-street, which the City Council has resolved to acquire for widening the street at that point.

LONDON AND DISTRICT BOROUGH COUNCILS.

Battersea.—Painting and decorating works are to be carried out at the Latchmere-road Baths, at an estimated cost of 185*l.* Thirteen streets are to be paved with the Council's artificial stone, at an estimated cost of 1,857*l.* The tar-paved footpaths of sixty-nine streets are to be dressed and painted, at an average cost of 1½d. per yard, making a total of 339*l.* The surfaces of forty-seven tarred slag macadam roadways are to be painted and dressed, at an average cost of 1d. per yard, making a total of 286*l.* The Highways Committee has, subject to the usual sanction, agreed to contribute one-third of the estimated cost, put down at 7,800*l.*, for widening Falcon-road. 358*l.* is to be laid out in providing additional plant, etc., to maintain pressure of electric supply, and to cope with the increasing demand for energy. Plans have been passed as follows:—Mr. J. Easton, biograph theatre on site of Nos. 36 and 38, St. John's-road; Messrs. A. F. Vigor & Co., house and shop, Lavender-hill.

Chelsea.—The mission hall attached to Onslow Dwellings is to be repaired, at a cost of 135*l.*

Deptford.—Blackhorse Bridge, Evelyn-street, is to be reconstructed by the London County Council (in connexion with the electrification of the tramways), and the roadway is to be widened from 31 f t. 10 in. to 51 ft. The London County Council wrote to the Borough Council to the effect that provisional arrangements have been made with the South-Eastern and Chatham Railway Company for rebuilding the bridge at Brockley Station, at an estimated cost of 10,000*l.* The Spring-gardens authority asked the Borough Council for a contribution of 3,333*l.*, and stated that except same was forthcoming, together with other contributions for street widenings to a total altogether of 17,599*l.*, the London County Council would have to reconsider the question of the construction of the tramway from Lewisham High-road to Forest Hill. The General Purposes Committee have decided in favour of informing the London County Council that they adhere to their resolution of January, 1904, to contribute one-third of the cost of widening the bridge, such contribution not to exceed 3,333*l.* The following plans have been passed:—Mr. J. H. Waterworth, two houses, 104 and 106, Tanners Hill: Mr. H. Groves, three houses, Rokeby-road; Messrs. Abel Mead & Son, premises at corner of Deptford Bridge and Brookmill-road; Messrs. J. & H. Robinson, Ltd., premises in Church-street.

East Ham.—The Borough Surveyor has prepared draft plans and estimates of proposed additions to the tramway repair shops, which are expected to cost 2,000*l.* The following plans have been passed:—Mr. W. G. Watson, twenty-two houses, Welbeck-road, and eight houses in Hatherley-gardens; Mr. A. T. Haines, eleven houses, Henniker-gardens. Mr. B. Dawson has lodged plans for a warehouse at Cairn Mills, Silvertown.

Fulham.—1,000*l.* is to be spent in wood-paving the macadam portion of the roadway of Farm-lane. Alterations are to be carried out, at a cost of 185*l.*, at Swan Wharf, Putney Bridge. Additional condensing plant, estimated to cost 160*l.*; is to be obtained for the electricity works. A plan was passed for Mr. J. Carter, on behalf of the Metropolitan District Railway Company, to reconstruct Walham Green Station.

Hammersmith.—The total fees to be paid the quantity surveyors (Messrs. Dow, White, & Gee) for their services in connexion with the erection of the baths and washhouses amounts to 464*l.* odd. A movable or collapsable screen is to be added to each of the dust-shoots at Chancellors Wharf, and the Cartage Committee is to consider what means should be adopted to prevent dust arising from the loading and unloading of coal there. There were 220 candidates for the position of fourth assistant engineer to the electricity undertaking in place of Mr. E. A. Faver. Mr. Edward Taylor, of West Ham, has been appointed to the position.

Hendon.—The District Council are to apply to the Local Government Board for sanction for a loan of 429*l.* for sewage works. The following plans have been passed:—Messrs. Parker & Unwin, twelve houses, Hampstead-way, Wellgarth-road, Asmuns-hill, and Rotherwick-road, also block of tenements, Orchard-road; Mr. J. Brady ,four houses, Collindale-avenue; Mr. T. G. Golby, five shops, Dawslane; Mr. E. Streather, eight houses, Corringham-road, and Golder's Gardens; Mr. H. J. S. Abrams, twenty-three houses, St. John's-road; Mr. A. Green, ten houses, Langley-park; Mr. Hart, two houses, Golder's Green-road; Mr. S. Salter, block of flats, Finchley-road; Mr. F. W. Bristow, ten houses, The Drive; Mr. F. Parvin, two semi-detached houses, Flower-lane; Mr. F. W. Cox, thirty-one houses, Woodstock-avenue. The following plans have been lodged with the Rural District Council:—Mr. H. Tann, jun., six houses, Bolton-road, Pinner; Watford Land Syndicate, twelve houses, Kingsley-road, Pinner; London Ground Rent Company, six houses, Harrow-view, Pinner; Mr. P. Godfrey, two houses, Harrow-road, Pinner.

Holborn.—The total cost of the extension of the municipal buildings was 58,966*l.*, made up as follows:—Site, 30,439*l.*; buildings, 25,548*l.*; furnishing, 2,978*l.* The chief items which made up the sum for buildings were:—Contract, 22,522*l.* (tender accepted, 22,025*l.*); architect's commission, 1,344*l.*; bills of quantities, 755*l.*; clerk of works, 433*l.*; party wall, 339*l.*

Hornsey.—Plans have been passed as follows:—Mr. G. H. Paine, 62, Moorgate-street, E.C.; six houses, Fortis Green-avenue; Mr. Charles W. Boswell, The Parade, High-street, five houses, and two maisonettes, Priory-road. Mr. Edgar Harry Selby, Adelphi, has lodged plans for a church and school in Wightman-road, North Harringay.

Lewisham.—Mr. J. Watt has written to the Borough Council stating that he is about to lay out 400 acres of the Forster Estate, situated between Bromley-road and Verdant-lane, and is anxious that the roads should be taken over as the houses are built, say, 400 ft., 600 ft., 800 ft., or 1,000 ft. at a time. Mr. Watt further says that he is desirous, so as to enable this to be done, of making up the roads himself to a specification to be prepared by the Borough Surveyor, and would be prepared to pay the wages of a clerk of works, and carry out the work under the superintendence and to the satisfaction of the Borough Surveyor. Mr. W. Pearce also wrote asking that he might be allowed to do the work for Mr. Watt, he being accustomed to the Council's requirements in relation to similar works. The Committee, however, decided that they could not comply with Mr. Watt's application, inasmuch as in February, 1908, a decision was arrived at to the effect that owners should no longer be permitted to make up roads under conditions imposed as to specification and supervision. Wearside-road is to be paved and formed. The Council have passed the following plans:—Temperance hall, corner of High-street and Court Hill-road, for the Temperance Billiard Halls, Ltd.; Mr. A. Burr, skating-rink, Loampit-vale, also one in Burnt Ash-hill, Lee.

Marylebone.—The Council have passed a plan, submitted by Messrs. Boehmer & Gibbs,

Digitized by Google

for the erection of a building on the site of the Coliseum public-house, Great Portland-street, the new building to be an extension of block F, Portland-court. The clearing of the Grove-road site for the Council depôt is being proceeded with.

Stepney.—Mr. Spencer W. Grant applied to the Borough Council, on behalf of the owners of the Keate Estate, for an order to close Fashion-court, offering to give up a frontage to Fashion-street for the purpose of widening that street, on condition that the Council carry out the necessary paving at their own expense. It is proposed to build on the site of Fashion-court. The Works Committee have agreed to a closing order being made. Mr. B. E. Nightingale is to construct two underground conveniences in Horseferry Branch-road, the contract price being 1,410*l.* Plans have been passed for Mr. E. H. Abbott for an addition at the rear of 27, and 28, Ford-square.

Wandsworth.—The attention of the Government is to be drawn to the inadequate accommodation at Wandsworth County Court, and the desirability of providing a larger building. The following paving works are to be undertaken:—Kerbing, etc., Streatham Common, south, estimated cost, 500*l.*; High-street, Wandsworth (in connexion with street widening), 800*l.*; Streatham Common, north (to be dealt with as a new street); repairing Granville-road, Southfields (to be carried out by Mr. R. Dykes at 190*l.*). The London County Council has agreed to provide conveniences at Streatham Common, subject to the local authority contributing one-third of the cost. The London County Council are to be asked to supply plans, when the Borough Council will consider the proposal. The following plans have been passed:—Mr. W. Bartholomew, eight houses, Rostella-road and Thurso-street, Tooting; Mr. H. H. Foster, five houses, Crowborough-road, Streatham; Messrs. E. E. Evans & Sons, eighteen houses, Fircroft-road, Balham; Messrs. Maple & Co., Ltd., additions to Oaklands, Princes-road, Southfield; Mr. J. V. Potterton, warehouse, etc., Bromells-road, Clapham; Mr. F. G. Minter, women's day-room at Royal Hospital for Incurables, West Hill, Southfield.

West Ham.—The following plans have been passed:—Messrs. T. Rider & Son, alterations to Seamen's Hospital, Connaught-road, Custom House; Mr. J. Burchell, two houses, Garvary-road, Custom House; Messrs. C. Yates & Co., chimney-shaft, Taplow's Bottling Works, Leytonstone-road, Stratford; Mr. M. W. Hudson, additions to offices and workshop, Albert Works, Chatsworth-road, Stratford; Anglo-American Oil Company, boiler-house, etc., at Bradfield-road, Silvertown.

Wimbledon.—At the meeting of the Town Council it was resolved to make up a new footway between Hill-road and Elm-grove, and lay a sewer, at a cost of 550*l.* Peak-crescent is to be made up, the cost being put down at 431*l.* The construction of the railway arch crossing Kingston-road at Raynes Park has been brought before the London and South Western Railway Company, with a request that they state what they would contribute towards the cost. The following plans have been passed:—Mr. R. A. Hinds, motor-house, Belvedere-drive; Mr. W. Allan Tannar, addition to "Grenabo," Highbury-road; Messrs. Rider & Son, extensions to London and County Bank, Hill-road.

Obituary.

MR. PENFOLD.

We regret to announce the death, on July 5, at Sheringham, of Mr. John Wornham Penfold, F.S.I., of No. 34, Great George-street, Westminster, and Haslemere, aged 80 years. Mr. Penfold was elected, in 1860, an Associate, and in 1881 a Fellow, of the Royal Institute of British Architects. He became a member of the Architectural Association in 1848, and was President in 1859-60. He was a leading and highly-esteemed member of the Surveyors' Institution; upon his resignation in January, 1904, of the Honorary Secretaryship, which he had held during thirty-six years, the members presented to him his portrait painted by Mr. Jacomb Hood—the portrait was, by his request, deposited in the council-room. He was elected a Vice-President in 1904, and upon his recent retirement in that capacity was elected an honorary member. Since 1880 Mr. Penfold was surveyor to the Goldsmiths' Company, for whom he designed their Technical and Recreative Institute, in the old Royal Naval School, New Cross, S.E., in 1890-1; and acted in the rebuilding on the wide area in Cripplegate after the fire of November, 1897, of which we published a plan on December 11 of that year. Mr. Penfold was a member of the Tribunal of Appeal appointed under the London Building Act, 1894, and eight years ago was elected chairman, in succession to the late Arthur Cates; he retired in June, 1907, after nine years' constant duty. His services in cases of purchase and compensation or award were often in requisition by public bodies and private persons; he acted as arbitrator in the matter of a claim preferred against the Central London Railway Company in respect of house property at the "Ranelagh Water Splash," Lancaster Gate, Bayswater. At Haslemere, where, we gather, he founded and built a cottage hospital, he took a warm interest in protecting the natural beauties of the neighbourhood from spoliation and disfigurement.

MR. G. D. BELLAMY.

The death occurred on the 3rd inst. of Mr. G. D. Bellamy at Plympton, in his 76th year. Mr. Bellamy was born at Plymouth, and was educated at the old Corporation Grammar School. After leaving school he was articled to Mr. Oswald Arthur, architect, of Plymouth. Subsequently he proceeded to Woolwich Arsenal as a draughtsman, under Colonel Inglis. Subsequently his services were requisitioned by Brunel to assist him in his last great railway undertaking, the construction of the Royal Albert Bridge of the Cornwall Railway to Saltash. Later on, he received the appointment of assistant engineer to the Liverpool Corporation Waterworks, Mr. J. C. Newlands being the then Borough Engineer. His next move was to Plymouth, where he was instrumental in starting the soap works at Coxside, and subsequently he returned to Woolwich Arsenal. It was in December, 1864, that Mr. Bellamy went to Plymouth as assistant engineer—Mr. Robert Hodge being the Borough Engineer at that period. On the retirement of Mr. Hodge some years later, the departments of Borough and Water Engineer were separated, and Mr. Bellamy was placed in charge of the water department as Water Engineer. On the death of Mr. Alty, who succeeded Mr. Hodge as Borough Engineer, Mr. Bellamy was made both Borough and Water Engineer. In that capacity he designed and carried out the large scheme of drainage, with storage tanks contiguous to Sutton Harbour, and outfall at Fishers' Nose, which was afterwards incorporated by Mr. Mansergh in the present main drainage scheme. He also carried out the drainage of a part of the western area tunnel from Victoria Park to Millbay. For the laying out of Plymouth Hoe Mr. Bellamy was responsible; he also planned the laying out of Beaumont and Freedom Parks, as well as the reconstruction of the Hartley reservoir and grounds. In 1892 Mr. Bellamy retired from active work under the Corporation, but was retained as consulting engineer up to his death.

General Building News.

ROMAN CATHOLIC CHURCH, GARRANBOY, CO. CLARE.

The foundation-stone has been laid of a new church at Garranboy, near Killaloe. The building is 76 ft. long by 26 ft. broad, 20 ft. to the eaves, and 38 ft. to the ridge. Irish materials, including Killaloe slates, have been used where procurable, the sandstone having been taken from a neighbouring quarry. The church, when complete with galleries, will seat about 500 people. Messrs. O'Malley & O'Rourke, Limerick, are the architects, and Mr. William Davoren, Ogonelloe, contractor.

STOKE BISHOP CHURCH, GLOUCESTERSHIRE.

This church is being restored under the direction of Mr. C. A. Rowley, architect, of Bristol. A new organ and electric lighting are also being put in.

PRESBYTERIAN CHURCH, BLYTH.

The foundation-stone has been laid of a new manse in connexion with the Waterloo-road Presbyterian Church at Blyth. The manse is the third, and final, stage of an extensive building scheme embracing the erection of a church, Sunday-schools, and manse in the Waterloo-road district. The new building has been designed by Mr. John Goulding, architect, of Blyth, the contractors being Messrs. J. & E. Simpson. Approximately the cost is 1,200*l.*

PROPOSED MEMORIAL CHURCH, LIVERPOOL.

A Miss Willox has given a sum of 10,000*l.* for a memorial church to her brothers. It has been decided that the church shall be located in the parish of St. Philip, Litherland, and Mr. J. F. Doyle has been asked to be the architect of the building.

NEW CHURCH, NANTYMOEL.

The foundation-stone has been laid of St. Paul's Church, Nantymoel, in the parish of Llangeinor. The architect is Mr. J. Cook Rees, of Neath, and the contractors Messrs. Price Brothers, of Cardiff. The church is being built at a cost of 1,800*l.*, and will accommodate 320 worshippers.

PROPOSED NEW CHURCH, SNEINTON.

Plans have been prepared by Mr. F. E. Littler, of Lowdham, for a new church which it is proposed to build at Sneinton. It is intended that the church shall consist of a nave, with clearstory, north and south aisles, transepts, and chancel, and clergy and choir vestries, and bell turret, and the style of the design is early Decorated Gothic. Externally the building is to be of red brick, with stone-coloured terra-cotta dressings, and tiled roofs. The church will be built to accommodate 650, and the total cost, including the furnishing, is estimated at 6,500*l.*

CHURCH ENLARGEMENT, BIRKDALE.

Additions and improvements are being made to St. John's Church, Birkdale. A new north aisle is being built, and the present temporary north wall of nave and chancel being removed and an arcade of five arches substituted. A clergy vestry is to added at the east end, and a choir vestry on north side, with separate porches and lavatories. The architects are Messrs. Austin & Paley, of Lancaster, who designed the original church, and the contractors Messrs. Duxfield Brothers, of Southport.

NEW CHURCH, EPSOM.

The consecration of the new church of St. Barnabas, Epsom, took place a short time ago. The portion of the church which has been completed consists of the chancel, three bays of the nave, organ-chamber, and vestries. The exterior, with the exception of the temporary west end is faced with local red bricks, having stone dressing, and the windows and the roofs are covered with green slates. Upon its being decided to build, designs for the new church were invited from several firms of architects, and the plans approved were those sent in by Messrs. A. C. Williams & W. Horseman. The builders were Messrs. Wallis & Son, Maidstone. The contract for the chancel and three bays of the nave amounted to 3,043*l.*, and the second contract, for the vestries, 650*l.* Two bays of the nave and the morning chapel remain to be built.

NEW CHURCH, ST. ALBANS.

The foundation-stone of the new St. Paul's Church, St. Albans, was laid on the 24th ult. The church, which will provide accommodation for 750 people, is being built by Messrs. J. Bentley & Sons, of Waltham Abbey, at the contract price of 7,324*l.*, to plans prepared by Messrs. J. E. K. & J. P. Cutts, the duties of clerk of works being carried out by Mr. James Flint. The plans of the church provide for a nave, north and south aisles, chancel, side chapel, organ-chamber, clergy and choir vestries, western narthex and baptistry, and north and south porches.

NEW CHURCH, BEDFORD.

A new church, which will be known as All Saints, is in course of erection at Queen's Park, Bedford. Sir Arthur Blomfield & Sons and Mr. George P. Allen are the architects, and the contract has been entrusted to Mr. Samuel Foster, of Kempston. An illustration of the building was published in the *Builder* of January 9 last.

WESLEYAN METHODIST CHURCH, ASKAM.

The Wesleyan Methodists of Askam-in-Furness are building a new church in Duddon-road. Mr. Henshaw, of Blackburn and Burnley, has been engaged as architect, and the contract has been let to Mr. Parker Robinson, of Barrow. The new building is to seat 280 people, and is being built of brick, with terra-cotta dressings, and will be pebble dashed. The specifications provide for a scheme of heating on the low-pressure system.

CONGREGATIONAL CHAPEL, NEWNHAM, NORTHANTS.

The Newnham Congregationalists are erecting a new chapel. The building, designed by Mr. J. B. Williams (Daventry), and built by Messrs. Holland & Marks (Daventry), is of plain local brick, with stone dressing, and will seat about 120.

MEMORIAL CHAPEL, BEDFORD PARK.

A memorial chapel to All Souls is being erected in connexion with the Church of St. Michael and All Angels, Bedford Park. The cost of the chapel, exclusive of gifts, will be about 1,300*l.* Mr. Maurice B. Adams is the architect.

PRIMITIVE METHODIST CHAPEL, DARLASTON.

A Central Primitive Methodist chapel is being built in Slater-street, Darlaston. The amount of the tender accepted for the work is 3,300*l.*, the builder being Mr. R. Hammonds, and the architect Mr. C. W. D. Joyneon.

Digitized by Google

WESLEYAN CHAPEL, ALVERDISCOTT.

A new Wesleyan Chapel has been erected at Alverdiscott. The building will seat 240 people, and has been designed by Mr. W. J. Copp, of Bideford.

INFANTS' SCHOOL, NORTHALLERTON.

A new infant school has been erected at Northallerton by the Education Committee of the North Riding County Council. The school has been constructed in accordance with plans prepared by Messrs. J. M. Bottomley, Son, & Wellburn, architects, Middlesbrough, whose designs were selected by Mr. Paul Waterhouse from the six sets received. The lowest tender received was that of Mr. Paul Rhodes, Leeds, amounting to 4,329*l.* 18s. 6d., which was accepted by the Committee.

SUNDAY-SCHOOL, WOODFORD.

A Sunday-school is being built in connexion with the Woodford Union Church. The contract of Messrs. Wallace & Wallace, builders, of Woodford, at approximately 1,000*l.*, was accepted. Mr. Herbert Goodman, architect, prepared the plans.

NEW SCHOOL, GOUROCK.

A new central senior school has been built at Gourock, at a cost of about 10,000*l.* The building provides accommodation for 700 children, and was designed by Mr. Alexander Cullen, architect.

PROPOSED NEW SCHOOL, TEIGNMOUTH.

Plans have been prepared by Mr. Morris, architect, for a new Council school, proposed to be built on the West Lawn Estate, Teignmouth. They provide for a single story structure, consisting of eight classrooms, retiring-rooms, cloakrooms, and central hall.

COUNCIL SCHOOLS, BRISTOL.

The Bristol Education Committee are building a new mixed school to serve the district of Ashley Down. The schools are arranged in two departments, senior and junior, having twenty classrooms ranged around two central halls. In addition there will be a domestic training centre, comprising cookery-room and laundry, and other necessary accommodation. A caretaker's house is also included in the scheme. The architects are Messrs. W. V. Gough & A. R. Gough, of Bristol. The general contractors are Messrs. G. Humphreys & Son.

PROPOSED COUNCIL SCHOOL, ROMFORD.

The Romford District Education Sub-Committee have decided to erect a new elementary school. Mr. A. S. R. Ley, London, has been appointed architect for the work.

TECHNICAL INSTITUTE, NEWPORT, MON.

The foundation-stone was laid on the 24th ult. of the Technical Institute, which is being built in Clarence-place and Rodney-road, Newport, for the accommodation of the schools of art, science, and technology, and the pupil teacher (females) centre. The work is being carried out by Mr. W. E. Blake, of Plymouth, from the designs of the Borough Architect, Mr. C. F. Ward. The accepted tender was at 36,103*l.*, but there has been a deduction of about 800*l.* in respect of the use of Bath stone. The whole scheme, including furnishing, will cost about 40,000*l.*

INSTITUTE PREMISES, GARNDIFFAITH.

A public hall and institute has been built at Garndiffaith. The building contains a public hall to seat 600, a billiard-room, reading-room and library, and a suite of rooms for the caretaker. The work has been carried out by Messrs. Bailey Brothers, Pontypool, under the superintendence of the architect, Mr W. Beddoe Rees, Cardiff. The contract price for the whole building is about 1,800*l.*

PARISH HALL, EBBW VALE.

A parish hall has been built in connexion with Christchurch, Ebbw Vale. The exterior of the building is constructed of Ruabon terra-cotta dressings and Govilon stone. The internal arrangements consist of a porch, vestibule, hall, stage, with anterooms, and a kitchen and scullery on the basement. The contractor for the work was Mr. David Morgan, Beaufort, the amount of whose contract is about 1,400*l.*, whilst the work has been designed by Mr. Henry Waters, architect, Ebbw Vale and Beaufort.

NEW LECTURE-HALL, SHREWSBURY SCHOOL.

A new lecture-hall is being built in connexion with this school. The building is to consist of a large hall, with accessory smaller apartments. The hall will be used for concerts, etc., but will be utilised chiefly as a gymnasium. The small rooms, of which there are to be ten, will be used for the purposes of pianoforte practice. The preliminary work in connexion with the foundation-stone, which was recently laid, was carried out by Mr. Bowdler, builder, of Shrewsbury. Mr. Willink, of Liverpool, is the architect for the work.

BUSINESS PREMISES, SWANSEA.

The widening of Castle-street, Swansea, has necessitated the pulling-down of some old buildings on the College-street corner, and these will be replaced by a new block consisting of shops and offices. The façade will be faced with Doulton Carrara ware, and the premises are being built from the designs of Mr. Sydney R. Crocker, architect, of Swansea.

FIRE-STATION, GUERNSEY.

A new fire-station is being erected in Upland-road, Guernsey. The architect is Mr. J. H. Duquemin, and the contractor Mr. G. Downie. The sub-contractor for the masonry is Mr. D. Ferbrache. The building is to be fireproof. The floors are to be built by the Armoured Tubular Flooring Company's process, the sole licensee for which in the Channel Islands is Mr. A. Mitchell, of St. Sampson's. The roof is to be a flat one, covered with Limmer asphalt roofing, by the Limmer Asphalte Company, Ltd., whose representative for the Channel Islands is Mr. A. Mitchell.

HIPPODROME IMPROVEMENT SCHEME, DEWSBURY.

Alterations and improvements are to be effected at the Dewsbury Hippodrome. Mr. G. A. Fox, of the firm of Messrs. Holton & Fox, architects, has designed the scheme it is proposed to carry out. The contractors are as follows:—Masons, Messrs. Humphries & Green; joinery, Messrs. Clegg Brothers and Messrs. Armitage & Son; plumbing, Mr. J. E. Talbot; electric light fittings, Messrs. Hirst & Co.; decorator, Mr. Ned Ramsden.

NEW OFFICES, COCKSPUR-STREET, S.W.

The Grand Trunk Railway have opened new offices at Nos. 17 and 19, Cockspur-street, S.W. The architect of the building was Sir Aston Webb, R.A., C.B., and the carving on the front was executed by Mr. W. S. Frith. The public office contains a frieze painted by Mr. Frank Brangwyn, A.R.A.

FACTORY, BOOTLE.

Messrs. Johnson Brothers, Ltd., dyers, have had additions made to their factories in this town. The premises are 190 ft. in length, and 60 ft. wide, the height from the main building being 85 ft. There are six floors in the works portion, each having an available working space of about 1,000 square yards. The ground floor is entirely occupied by the general offices and private rooms, and at the east end of the building are grouped the entrances, lifts, lavatories, and cloakrooms, with a bathroom on the fourth floor. On the top floor recreation and dining rooms have been provided, the latter having seating room for 600 persons at one time. All the floors throughout are of Kleine fireproof construction, the framework of the structure being of steel, the outer columns having a casement of red Ruabon bricks. Steam will be used for heating and cooking purposes, and special arrangements have been made to guard against fire. Messrs. Briggs, Wolstenholme, & Thornley are the architects, and Messrs. W. Brown & Son the builders.

CLUBHOUSE, DERBY.

A clubhouse has been erected on the links of the Derbyshire Golf Club. The building, in addition to the clubroom and ladies' and gentlemen's dressing-rooms, contains a luncheon-room, secretary's office, and apartments for the professional. The rooms are heated with hot water, and lighted by gas, this work having been entrusted to Mr. J. A. Brooks. Messrs. Thorpe & Fryer were the architects, and the building was erected by Mr. J. H. Fryer. The approximate cost is 1,300*l.*

NEW CEMETERY, NOTTINGHAM.

The plans and specifications of the chapels, lodges, walks, etc., of the new cemetery, which is to be laid out on Wilford-hill, have now been completed by the City Architect. The plans prepared include a crematorium, but it is not yet definitely intended to proceed with its erection. The total cost (including the crematorium, which forms part of the scheme placed before the Local Government Board) is estimated to be 22,000*l.*

SHAFTESBURY HALL, BOURNEMOUTH.

Alterations are being carried out at the Shafteebury Hall, St. Peter's-road, Bournemouth. The contractors for the work are Messrs. Jenkins & Sons, Ltd., and the architects Messrs. Creeke, Gifford, & Oakley, while the installation of electric light is being undertaken by Messrs. Chadwick & Roberts. The total estimated cost of the alterations is 1,600*l.*

POST-OFFICE, HULL.

The new post-office at Hull is approaching completion. The building, which was designed by Mr. W. Pott, of H.M. Office of Works, covers an area of about 4,160 super. yds. The public office measures 62 ft. 6 in. long by 39 ft. 9 in. wide, and 17 ft. high, and the sorting office, which is in the form of the letter "L," covers an area of 8,872 super. ft. The instrument-room of the telegraph department is 112 ft. by 40 ft., while the adjoining room allocated to the telephones is 64 ft. by 47 ft., both being lofty and well lighted. All the corridors are paved with terrazzo, bordered with black and Verona red. Electricity is the illuminating agent, and the entire building is heated on the low-pressure system. Ivory-white glazed bricks cover the walls of most of the rooms. Messrs. Arnold & Sons, of Doncaster, are the contractors for the superstructure, and the entire work, which will cost fully 53,000*l.*, has been carried out under the supervision of Mr. James Atkinson, of H.M. Office of Works. Preparations for the building were begun in May, 1904, the date of the first contract; but after the excavation was finished it was discovered that the site was of such a nature that the foundations would have to be piled. This involved the cancelling of the contract and the preparation of a fresh one with fresh plans providing for a ferro-concrete foundation.

RAILWAY-STATION, RUGELEY.

To meet the growing requirements of the district, the London and North-Western Railway Company has carried out numerous alterations at their railway-station at Trent Valley, Rugeley. The new works were commenced in January, 1908, and occupied about fifteen months in construction. The officials having the direction of the works have been Mr. E. B. Thornhill, head engineer at Euston; Mr. L. Trench, head engineer to the new works department; and Mr. A. T. G. Posnett, resident engineer. The contractors for the new station buildings have been Messrs. Kirk & Rendall, of Woolwich, and for the patent glazing Messrs. Mellows & Co., of Sheffield; and the permanent way and signalling alterations have been carried out by the working staffs of the London and North-Western Railway Company themselves.

STOKE PARK.

Stoke Park, the former home of the Penn family, has been altered as necessary to form the clubhouse of the Stoke Poges Golf Club, and it was formally opened on Monday last. The house was originally a square red-brick XVIIIth century building, the successor to the old Tudor manor-house still standing in the park; but it has been enlarged from time to time, and some very fine reception-rooms, quite suitable for the purposes of a club, have been added. The present alterations have been confined mainly to the bedroom floors and the basement, and to the building of a caddie master's house; the exterior, with its symmetrical wings and central dome, and the long columned loggia facing the terrace, being left quite unchanged. The gardens, which are of the landscape type, are very fine of their kind, and the park forms an ideal golf course. The general contract has been carried out by Messrs. Shoolbred & Co., the hot-water and cooking apparatus by Messrs. Wilson & Smith, the drainage and other sanitary work by Messrs. Fleming & Co., and the electrical plant and wiring by Messrs. F. A. Glover & Co. The architect for the work was Mr. Arthur Keen.

Y.M.C.A. HEADQUARTERS, TOTTENHAM COURT-ROAD.

The Building Committee for the new central Young Men's Christian Association headquarters, to be erected in Tottenham Court-road, have sealed a contract, amounting roughly to 90,000*l.*, with Messrs. John Greenwood, Ltd., to complete the structure in twenty-two months. Building operations have just been commenced. The Committee have approved the plans of Mr. Rowland Plumbe.

MINERS' INSTITUTE, PLATT BRIDGE, WIGAN.

A miners' institute is being erected at Platt Bridge, at the corner of Warrington-road. The new building is to be of Whithnell red facing bricks, relieved by Yorkshire stone dressings. It will contain an assembly-hall 53 ft. long by 30 ft. wide, with a gallery at one end, and will accommodate between 500 and 600 people. There will also be committee-rooms, a kitchen, bathrooms, a billiard-room, etc. Messrs. J. B. & W. Thornley, architects, of Wigan and London, have prepared the designs. The sole contractors for the work are Messrs. Clough & Gaskell, Pemberton, Wigan.

DISPENSARY, RETFORD.

A new dispensary is being built in connexion with the Retford Hospital. The dispensary will have elevations of Accrington facing bricks and Ancaster stone dressings to windows and doors. The gables will be coped with Ancaster stone, and the roofs covered with green Westmorland slates and red ridges. Mr. Wm. Southall is the architect, and the building contract has been let to Messrs. Thomas Hopkinson & Son, of Retford.

Digitized by Google

TRADE NEWS.

The Office of Works has placed the order for the whole of the large ornamental bronze sashes and the bronze casements in the new King Edward building, G.P.O., E.C., with Messrs. George Wragge, Ltd., who are now carrying out the work under the direction of the architect, Sir Henry Tanner.

Messrs. Hill & Smith, of the Brierley Hill Iron Works, Staffordshire, have manufactured and erected the whole of the constructional steelwork in the roofs and domes of the New University Buildings, Birmingham, weighing altogether 580 tons.

The extensions to the General Hospital, Cheltenham, are being warmed and ventilated by means of Shorland's double-fronted patent Manchester stoves, with descending smoke flues, exhaust roof ventilators, and patent hygienic inlet ventilating panels, supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Appointment.

PORT OF LONDON.

At their meeting on July 8 the Port of London Authority appointed Mr. Frederick Palmer, Chief Engineer of the Port of Calcutta and formerly Engineer to the East Indian Railway, as Chief Engineer to the Authority of the Port of London.

Sanitary and Engineering News.

FRASERBURGH WATER SUPPLY SCHEME.

The Fraserburgh Town Council have under consideration an extensive new water supply scheme. Mr. W. Allan Carter, C.E., Edinburgh, has prepared a report on the proposal. The water is to be taken from Fedderate, New Deer, a distance of fifteen miles from Fraserburgh. The estimated total cost of the undertaking is 45,800*l.*, which includes the making of a reservoir capable of containing 51,000,000 gallons, or a ten weeks' supply for the town. The daily supply available from the new source would be 690,000 gallons.

HARBOUR IMPROVEMENTS, BLYTH.

Progress is being made in the improvement and extension of the shipping and trading facilities at the Port of Blyth. Included in the comprehensive scheme, commenced upon three years ago, by the Blyth Harbour Commissioners was the erection of a new lighthouse, the rebuilding of a portion of the main pier, and the underpinning and strengthening of a long section of the south quay wall. The first two works have been completed, and the new lighthouse at Blyth has now been in use for several months. The south quay wall has, up to the present, been underbuilt for a distance of 300 ft., and secured inside a cofferdam for a depth of 34 ft., and recently a commencement has been made on a further section of 400 ft., to be similarly treated. The works have been carried out to the plans of Messrs. J. Watt Sandeman & Son, of Newcastle-on-Tyne, the engineers to the Blyth Harbour Commissioners, and under the direction of Mr. G. D. McGlashan, A.M.Inst.C.E., the resident engineer.

BATH SEWAGE DISPOSAL SCHEME.

The Bath Town Council have approved the report of their Sewage Disposal Committee, embodying the scheme of Mr. W. H. Radford, the engineering expert, also the estimate and plans, and have decided to apply to the Local Government Board for a loan of 215,000*l.*, made up as follows:—Bath sewerage, 52,180*l.*; pumping-station and pumping main, 57,400*l.*; sewage disposal works, 50,500*l.*; relaying old stone sewers and house connexions, 23,800*l.*; cost of land, 10,000*l.*; engineer's fees, 10,000*l.*; clerk of works and assistants, 1,000*l.*; and general contingencies, including easements and law costs, 10,120*l.*

THE QUEEN ALEXANDRA BRIDGE, SUNDERLAND.

This new bridge, which crosses the Wear from Southwick to Deptford, is of the high-level, double-decker type, and is to be used both as a railway and road bridge. The work was begun in September, 1904. Owing to the conformation of the banks on either side, a series of bridges had to be built, leading up to the central span, and the whole of these together make the total length of the bridge over half a mile. On the north side the structure is carried by a series of Dumfries stone arches, with brick rings, to the first pier. The roadway rests on the piers, the railway being carried above by steel tressles. There are two spans of 200 ft. each before the first river pier is reached, which is just within high-water mark. Then comes the main span, a stretch of 350 ft., followed by another 200-ft. span reaching to the abutment on the south side, a further series of graceful stone arches carrying the road to Havannah-street, while the railway goes on to Millfield. The long declivity on the north bank made necessary two 200-ft. spans, but on the south side, where the fall is sharper, only one was required. On each bank the bridge crosses a roadway, and on the south side it crosses a railway line as well. The piers, which are of rack-faced granite, are 64 ft. wide. That on the north side was sunk to a depth of about 75 ft. below high-water mark before it reached the limestone rock; on the south side the rock was found within 30 ft. of the surface. On each side of the bridge road, supported on brackets, are footpaths, 7 ft. wide, the same brackets being used to carry the gas and water mains. Two lines of rails and one tramway track have been laid down. There is a clear headway to the under girder of the centre span of 85 ft. at high-water level ordinary spring tides, which, it is calculated, will be sufficient to enable the largest of the vessels launched at any of the shipbuilding yards above the bridge to be cleared. The contract price for the bridge was 350,000*l.*, but the total expenditure involved will be nearly 450,000*l.*, of which the Sunderland Corporation have to find about 200,000*l.*, the Southwick Council about 11,000*l.*, and the railway company the remainder. The structure was designed by Mr. C. A. Harrison, Chief Engineer of the North-Eastern Railway (Northern Division). The contractors for the erection of the bridge were Sir William Arrol & Co., Ltd., Glasgow. The masonry work was done by Messrs. Mitchell Brothers, of Glasgow. Mr. A. S. Biggart, managing director of Messrs. Arrol, had the principal supervision of the work.

HULL CITY WATERWORKS.

In connexion with the Hull City waterworks the opening has just taken place of the reservoir at Keldgate, near Cottingham, which has been constructed at a cost of 43,000*l.* The reservoir, designed by the late Water Engineer, Mr. F. J. Bancroft, is founded on the chalk formation, with a top water level of 140 ft. above ordnance datum. It is constructed of concrete, with a lining of bitumen sheeting. There are 361 piers to carry the cross-walls, from which the arches of the roof spring, and the internal dimensions are 324 ft. by 324 ft., and 16 ft. deep. More than 90,000 tons of material were excavated, and about 4,000 tons of Portland cement were used in the work. The reservoir is supplied with water by a 30-in. branch main, two miles in length, from the Cottingham pumping-station.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Moule's Patent Earth Closet Company will remove their premises, on June 24, from 5A, Garrick-street, to Doughty House, 2, Guilford-street, Russell-square, W.C. The new offices adjoin their workshops in Guilford-mews.

RECENT ACQUISITIONS, BRITISH MUSEUM.

Mr. Isaac Falcke, of No. 104, Gower-street, has presented to the nation his valuable collection, for which it is said he had refused offers of 20,000*l.* and more, of Wedgwood porcelain, consisting of nearly 400 pieces, which was exhibited at the opening of the Crystal Palace, 1857, the South Kensington Museum, 1862, the Burslem Centenary Exhibition, 1895, and elsewhere. The specimens comprise a series of Flaxman's type models of the medallion portraits, signed by the artist, and bearing in his own hand the names of the persons represented, some original wax models for reproduction in pottery but not executed, together with plaques, vases, figures, busts, cups and saucers, bijouterie, etuis, inlaid work, etc., and one, known to experts as "Number 4," of the few existing original white on black copies made by Wedgwood of the Portland Vase; the copy is of singular beauty, and is distinguished by the deep tone of its black colour. To the British and Mediæval Antiquities Department is added a mazer bowl of finely-grained wood with a wide silver rim inscribed in black letter, and to the portrait busts of Roman Emperors a marble bust (restored) of Vespasian, and one, in remarkably good state, of Titus.

ALL SAINTS' CHURCH, ST. PANCRAS.

An Order in Council has just been made for uniting the benefice and income of All Saints, Gordon-square, to those of St. Pancras, under the title of St. Pancras and the patronage of the Dean and Chapter of St. Paul's. The scheme provides for the sale of the site and materials of All Saints' Church, which was built in Gordon-street in 1842 after designs by Professor T. L. Donaldson, and assigns the proceeds of the sale to the erection of a new church within the diocese of London. The present vicarage in Gordon-square of St. Pancras will be retained; the Ecclesiastical Commissioners will purchase the parsonage house, in Gordon-street, of All Saints as the parsonage house of Christ Church, Woburn-square, and the purchase moneys are to be applied towards the building of a parsonage house for the new church which will replace that of All Saints.

HILL-TREVOR ESTATE, KNIGHTSBRIDGE.

Lord Trevor, as tenant for life under the Settled Land Act, 1882, has disposed of his property, with rack-rents, in Knightsbridge for, we gather, nearly 200,000*l.*, to Mr. J. Charlton Humphreys, who during the past twenty-five years has been concerned in several large schemes of rebuilding in the neighbourhood of the old Green, amongst them being the quarters of Prince's Club (removed from Hans-place, Chelsea), erected by Messrs. Peto Brothers in 1888-9, after designs by Mr. E. H. Bourchier, on the site of "Humphrey's Hall," and included in the sale. Lord Trevor's property extends over about 25,000 sq. yds. lying between Brompton-road and the High-road to Kensington. On the estate are Trevor-square, Knightsbridge Hall, the Prince's Racquet and Tennis, and (Ice) Skating Clubs, a chapel, Arthur, Hill, and Charles streets, and one side of Lancelot-place, Brompton-road—more than 200 houses in all. Trevor-square is a pleasant, old-fashioned retreat, with an enclosed garden, built in 1818 upon the site of the house and grounds of Sir John Trevor, Speaker, Master of the Rolls, and first Lord Commissioner of the Great Seal, who died in 1717. His daughter and heir, Anne, brought her inheritance in marriage to Michael Hill, M.P., of England and Ireland. From that marriage descended the Viscounts Dungannon and the Marquises of Downshire. Lord Arthur Hill, a son of the third marquis, succeeded to the property of Lord Dungannon in 1862, took the additional surname of Trevor, and in 1880 was created Baron Trevor. The project for development of this property in Knightsbridge embraces the formation of a new road, north to south, but the garden enclosure of Trevor-square will, it is understood, be preserved.

ACCIDENTS ON THE NEW POST-OFFICE BUILDING.

Mr. Tyson Wilson asks the Home Secretary if he can state how many fatal and non-fatal accidents have happened on the new post-office in Aldersgate-street since the commencement of the work up to the present time.—Mr. Gladstone replies that it has not been possible to ascertain by a search through the records of the department how many reportable accidents have occurred during the two and a half years the works have been in progress, but the accidents entered in the register kept at the works are as follows:—One fatal, six serious, thirty-six slight.

THE NORWEGIAN STONE TRADE.

The British Consular report on the trade of Norway, which has just been issued, sets out that the total exports of kerbstone to the United Kingdom during 1908 was about 15,000 tons, of which the bulk was, as usual, shipped from Fredriksstad. The price remained unchanged throughout the year, viz., about 1s. per foot f.o.b. The export of sets was again very small, and at prices which left no profit to the exporters. The demand for dressed blocks was also very small, and the export was chiefly confined to Hull and Cork, where the blocks were imported in connexion with dock extensions at these ports. All stone-cutting work is paid by piece rates fixed by agreements worked out mutually by employers and workmen for all kinds of stone. The wages of the cutters vary from 3 to 7 kr. per day, according to their competency and the kind of work performed, the highest wages being earned by men engaged on quays, docks, and stone for constructional purposes. If a cutter performs work not provided for by the agreement, his wages are 50 ore per hour. Ordinary work in the quarries, such as blasting, transport of earth and refuse stone, is paid from 3 kr. to 4 kr. 50 ore per day. The labourers work ten hours a day. Only men are employed. As regards freights, they vary constantly. Of recent years the average from Norwegian stone shipping yards to the Forth or other good east coast coal district would probably not exceed 5s. 6d. per ton. At the time of writing freights are at their very lowest, and might be quite 1s. less. It is usual to pay a little more when blocks over two tons are shipped, and frequently those of three tons and upwards are put into and taken from the vessel's hold free

Digitized by Google

of expense to the vessel. The total export of granite and labrador from Norway during 1908 was 127,924 tons, with a total value of 106,480*l.*, as against 140,000 tons in 1907, with a value of 111,000*l.*

DOUGLAS, ISLE OF MAN.

A memorial bust to the Manx poet, Thomas Edward Brown, was unveiled by Lord Raglan in the Town Hall, Douglas, on July 9. The bust was sculptured by Mr. Joseph Swynnerton, a native of the Isle of Man.

THE VIEW FROM RICHMOND HILL.

At a meeting of Richmond Town Council Alderman Sir James Szlumper reported the result of a private conference with representatives of the London County Council and Twickenham District Council, at which it was resolved to ask the vendors of Meadowside, on the Thames bank, Twickenham, to propose terms for building restrictions on the river frontage to protect the view from Richmond Hill. The reply received was:—"We have prepared plans for developing this estate for building purposes. It is proposed to erect houses on the upper portion of the estate, and to deal with the lower portion for business premises. The price of the freehold free from restriction is 7,000*l.*, and we shall be glad to hear of your Council's desire to negotiate for the purchase thereof, but we absolutely decline to entertain in any way the placing of any restriction on the land." Alderman Szlumper said the Town Council could not buy the land, and the London County Council had said it would only contribute a reasonable sum to procure restrictions. It was resolved to send the letter to the London County Council.

MECHANICAL VENTILATION.

Some interesting conclusions on mechanical ventilation were stated by Professor J. Radcliffe, of Manchester, in a paper which he read at the summer meeting of the Institution of Heating and Ventilating Engineers recently held in Manchester. The ventilation of buildings and other enclosed spaces had, he said, passed the experimental stage long ago, but the different opinions that existed, and the frequent failures to obtain satisfactory results, were sufficient to show that there was still much to learn regarding the general principles on which the various methods relied for their efficiency. "A man may claim that his bedroom is sufficiently well ventilated by means of a constantly open window, but a statement by his wife that the bedroom is the dirtiest room in the house clearly indicates that there are serious defects in the arrangement. Even the strongest advocate of natural ventilation must acknowledge that the forces on which he relied for efficiency are uncertain in their action, and often quite beyond his control; even if he disregards the constantly varying amount of dust and moisture held in suspension in the outer air. The amount of prejudice against mechanical ventilation is very great; this is chiefly due to the many failures to secure a perfect change of air, and complete removal of atmospheric impurities. In business premises special conditions, such as abnormal temperature and a high percentage of moisture may be required. No system in use to-day entirely satisfies the ideal conditions." Professor Radcliffe indicated also the special purposes of mechanical ventilation, and he recommended the systematic propulsion of fresh air into open spaces from one or more centres as offering the best means of thorough ventilation, and the doubling of the channels of ventilation when air is to be heated before entering a room. In a well-designed and properly-managed system of ventilating by propulsion the impure air of manufacturing towns would be free from a large percentage of the solid impurities it contained by washing or screening. "Mechanical ventilation," he said, in conclusion, "requires a sufficiently powerful plant and careful attention by men who know the object in view and with an interest in the success of the effort to secure a sufficient supply of pure air for those housed in the building. Natural ventilation is desirable whenever possible, and it is suitable for many kinds of premises; but there are often occasions when the atmospheric conditions are unkindly disposed towards it, and the assistance of mechanical appliances would be very acceptable."

THE BUDGET AND BUILDING.

At a meeting on Tuesday in the Queen's Hall, held to protest against the land taxes in the Finance Bill, Mr. Howard Martin, President of the Surveyors' Institution, said he had had the opportunity of ascertaining the opinion of many fellow-surveyors, and he believed he was expressing the view of them all. They knew there was not a monopoly of building land. There were 40,000 freeholders in London alone. They also knew that land was not held up. Urban landowners were only too ready to take advantage of an opportunity to convert their land into building land, and to get reasonable prices for it. For years past there had been a very serious fall in the value of urban land. Estates of large landowners in the populous centres were the exception rather than the rule. The supply of sites, especially for small dwelling-houses, was always in excess of the demand, and at the present moment there were miles of uncovered frontages waiting for the small builder to erect houses. The restricting and closing of the market for real property must check building, and that must aggravate and prolong unemployment. A large proportion of the unemployment in the home counties was due to slackness in the building trade, and with the restricting and closing of the market the value of urban property would fall. The depreciation of mortgage securities would be most serious. Two cases came before him last week of gentlemen of considerable means whose money was habitually invested in mortgages, having giving instructions to their professional advisers that under no circumstances were any more such securities to be sent to them, and that money already so outstanding was to be withdrawn as soon as possible. These taxes might find the rich, but that only meant a little less of their privileges, but they might ruin the poor by checking the building trade.

THE BUDGET PROPOSALS.

Several questions are asked and answered in Wednesday's Parliamentary papers regarding the Budget proposals. Mr. Renwick asks whether the Chancellor of the Exchequer is aware that clay excavated during the construction of docks and other works is subject to a royalty when used for the purpose of making bricks or cement; whether ungotten clay will be subject to the ungotten mineral tax; and, if so, in what way the ungotten clay will be arrived at.—Mr. Hobhouse, who replies, says the answer to the first question is in the negative. In respect to the other questions he refers the hon. member to previous replies given on June 16, wherein it is stated that any minerals which have a separate value as such will be liable to duty under the Finance Bill. Mr. David Davies asks if building or road stone is to be regarded as mineral, and subject to the ungotten mineral or any other tax, and Mr. Hobhouse refers him to the reply given to Mr. Renwick. Mr. Lane Fox asks whether a lease of any separate part of a building will in any case constitute an interest in land; and, if so, whether increment duty will be payable upon the determination and renewal of such lease.—Mr. Hobhouse replies that it is not the intention that increment duty shall be charged on the occasion of the determination and renewal of the lease of a flat or separate offices, etc. Mr. C. J. O'Donnell calls attention to the statement of Sir Grant Lawson, Secretary of the Local Government Board in April, 1905, that it would cost at least 18,000,000*l.* for a valuation separating the value of the site from the value of the buildings on it in Great Britain.—Mr. Hobhouse says he takes it that reference is made to a speech made by Sir J. Grant Lawson on the second reading of the Land Values (Assessment and Rating) Bill of 1905. He has no means of saying what the estimate included, or on what it was based. Sir H. Kimber wished to know whether, as it is not intended to treat offices, flats, and chambers on the upper floors of a building as an interest in the land, and that no distinction will be drawn between offices, etc., on the ground floor and the other floors when let separately, it is to be assumed that the ground floor also is not to be treated as an interest in the land.—Mr. Hobhouse says the answer is in the affirmative.

Capital and Labour.

BUILDING TRADE ARBITRATION AT SOUTHAMPTON.

The award of the arbitrator appointed to settle the dispute between the Master Builders' Association and the various operative societies in Southampton and district has been issued. The most important alterations made in the rules are that the working hours are now reduced to a fifty-three-hour week, viz., cease work at 5 p.m. for the first five days, and noon on Saturday. The wages remain as at present, there being no increase or reduction. With regard to the rule for overtime, the first two and a half hours of overtime will be paid at the rate of time and a quarter; after that till starting time next morning the rate will be time and a half. This does away with the double time for night work. The carpenters are allowed one and a half hours' notice in place of one hour, as previously. There is no alteration in the walking time rule. There is a new rule inserted for settling all disputes within ten days, failing which either side may apply to the Board of Trade to appoint an arbitrator, whose decision shall be final and binding to both parties concerned. This clause comes in force on August 2, unless either party shall give notice to the other in writing that such rule is not agreed to.

Patents.

APPLICATIONS PUBLISHED.*

27,806 of 1907.—The Roman Brick Company, Ltd., and François Louis Schauermann: Manufacture of bricks, building and constructional blocks, and pottery used in connexion with building.

10,393 of 1908.—Robert Harvey Adams: Reversible sashes, fanlights, and the like.

16,898 of 1908.—Michael Mary Brophy: Doors, locks, or latches.

19,259 of 1908.—Ernest George Trobridge: Glazing bar for facilitating the escape of condensation water.

22,728 of 1908.—Dr. Josef Bárdy: Hinges for windows, doors, and the like.

25,317 of 1908.—The Sandycroft Foundry Company, Ltd., and James McKinlay: Manufacture of mortar-boxes for stamp mills.

61 of 1909.—Hayward Brothers and Eckstein, Ltd., and William Eckstein: Glazing.

484 of 1909.—Julius Wismer: Devices for automatically retaining doors in an open position and for releasing the same.

1,577 of 1909.—John Moore: Construction of cowl or pot for chimneys, ventilating-shafts, and the like.

3,399 of 1909.—Hans Friedrich Menck: Excavators.

4,073 of 1909.—John Burr Lane: Lead bars for glazing.

4,356 of 1909.—John Thomas Gibson: Wood rasps.

6,222 of 1909.—Axel Wilhelm Peterson: Wrenches.

8,877 of 1909.—Emil Kientz: Key for locks, the bolts of which can only be locked by means of a key provided with wards capable of turning relatively one with regard to the other.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 1.—By WM. H. BROWN (at York).

Flaxton, Yorks.—Freehold farm, 54 acres	£1,525
By WALTER LUDLOW & BRISCOE (at Birmingham).	
Cropthorne, Worcester.—Brook House and 2 a. 2 r. 0 p., f.	2,000
Bromsgrove, Worcester.—Fringe Green Farm, 24 a. 0 r. 35 p., f.	1,564
Old Stone Cottage and 6 a. 1 r. 21 p., f.....	638
Freehold pasture land, 7 a. 1 r. 31 p.....	540
Sugar Brook Manor House and 1 a. 2 r. 24 p., f.	390
July 2.—By BALLS & BALLS (at Haverhill).	
Steeple Bumpsted, Essex.—Little Waltons Farm, 114 a. 2 r. 9 p., f.....	2,000
Freehold arable land, 21 a. 1 r. 33 p.	975
Willow Plantation, 13 a. 1 r. 36 p., f.....	240
By ALFRED PRESTON (at Diss).	
Southolt, Suffolk.—Red House Farm, 42 a. 3 r. 19 p., f.	640
South Lopham, Norfolk.—Freehold and copyhold cottages and 2 acres	360
By H. W. & C. SPELMAN (at Beccles).	
Barnby, Suffolk.—White House Farm, 298 acres, f. and c.	3,300
July 3.—By W. H. ELWELL & SON (at Colchester).	
Wormingford, Essex.—Rochfords Estate, 277 a. 1 r. 11 p., f.....	5,000
By H. W. & C. SPELMAN (at Norwich).	
Saxlingham, Norfolk.—Blacksmith's shop and house, c.	140
July 5.—By PHIBBS, GIBSON, & Co.	
Herne Hill.—50, Hawarden-gr., u.t. 86 yrs., g.r. 7*l.* 7s., e.r. 38*l.*	330
By C. W. MAYNE.	
South Kensington.—3, Redcliffe-mews, u.t. 55 yrs., g.r. 6*l.*, y.r. 32*l.*	250
July 5.—By MOSS & JAMESON.	
Ealing.—102, 102A to 108, 108A (even), Darwin-rd., f., gross rental 171*l.*	850
Fulham.—12, Chesilton-rd., u.t. 71 yrs., g.r. 8*l.*, y.r. 38*l.*	305
By ALFRED SAVILL & SONS.	
Barking.—Ripple-rd., Maybells Farm, 115 a. 3 r. 28 p., f.....	7,100
By JOHN HOLLINGSWORTH (at Walham Green).	
Wandsworth.—18 and 20, Bridge End-rd., u.t. 54 yrs., g.r. 13*l.*, w.r. 7*l.*	435
Fulham.—91, Gowan-av., u.t. 80 yrs., g.r. 5*l.* 19s., w.r. 44*l.*	270
Chelsea.—86, Arthur-st., f., w.r. 85*l.* 16s.	525
July 6.—By BEST & GAPP.	
Merton.—61 to 67 (odd), Laburnum-rd., f., w.r. 91*l.*	850
By GARROD, TURNER, & SON (at Ipswich).	
Burgh, Suffolk.—Hatherley House Estate, 71 a. 2 r. 10 p., f.....	2,475
Two enfranchisement rent charges, 25*l.* 13s. 11d.....	595

RECENT SALES.—*Continued on page 83.*

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

JULY 17 — **Burslem.**—COMPETITIVE PLANS—EXTENSION OF TIME.—The Corporation invite competitive plans for new public buildings, which will be placed before an assessor to be appointed by the Corporation. Subject to the conditions of competition, the architect whose design is considered by the assessor to be the best will be appointed to carry out the work, and the respective architects whose designs the assessor decides to be second and third in order of merit will be awarded premiums of 100*l.* and 50*l.* respectively. All designs must be sent in before July 17 next. Conditions of competition, etc., can be obtained from Mr. Bettany, Borough Surveyor, on payment of 2*l.* 2s.

JULY 30.—**Grimsby.**—The Corporation invite designs for the extension of existing Town Hall. Premiums of 250*l.*, 150*l.*, and 100*l.* Conditions from Mr. H. Gilbert Whyatt, Borough Engineer, Town Hall, Grimsby. Full particulars only on receipt of a deposit of 2*l.* (Cheques to be made out to Mr. Frank Stephenson, Borough Treasurer.) See advertisement in our issue of April 24 for further particulars.

JULY 31. — **Glasgow.** — LAYING-OUT LAND.—**The Patrons of the Royal Incorporation of Hutchesons' Hospital in the City of Glasgow invite competitive designs for laying-out for feuing and building their lands of Thornliebank, in the Parish of Eastwood and County of Renfrew, near the City of Glasgow. The terms and conditions of the competition, and, upon deposit of 3*l.* 3s., skeleton plans showing the situation and boundaries of the different portions of the lands, may be had from the Chamberlains of the Hospital, Messrs. Hill & Hoggan, 194, Ingram-street, Glasgow, with whom designs must be lodged not later than July 31, 1909. Premiums of 100*l.*, 75*l.*, 50*l.*, and 25*l.* respectively will be awarded.**

JULY 31. — **Reading.** — OFFICES.—The Berkshire C.C. invite competitive designs for proposed new offices, committee-room, etc., at the Forbury, Reading. Premiums of 100*l.*, 75*l.*, and 50*l.* Particulars from Mr. J. Fred. Hawkins, County Surveyor, Bank-chambers, Cross-street, Reading. Deposit of 1*l.* 1s. For further particulars see advertisement in our issue of April 17.

AUGUST 5.—**Cardiff.**—CASKET.—Tenders are invited for a silver-gilt casket, to be presented to the Right Honourable Viscount Tredegar, a copy of the specification of which may be obtained from Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50, 25, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

* SEPTEMBER 20. — **Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. See advertisement in this issue for further particulars.

NO DATE.—**Forest Hall.**—SCHOOL.—Northumberland Education Committee (local education authority) invite competitive designs from architects practising in the county of Northumberland and in the city and county of Newcastle-on-Tyne for a new Public Elementary School at Forest Hall to accommodate 250 scholars. Particulars of the general instructions and conditions, together with a plan of the site, may be obtained on application to Mr. C. Williams, Secretary to the Education Committee, The Moothall, Newcastle-on-Tyne.

Contracts.

BUILDING.

JULY 15-27. — **Ashington, Haltwhistle, etc.**—SCHOOLS.—Northumberland Education Committee invite tenders for the erection of a new school and additions and alterations to existing buildings as follows:—Ashington New Hirst South, new school for 340 scholars; Haltwhistle Council School, additions and alterations; South Gosforth C. School, additions and alterations. Name and address to Mr. C. Williams, Secretary to the Education Committee, The Moothall, Newcastle-on-Tyne, with an intimation of the work to be tendered for, and accompanied by a deposit of 2*l.* 2s. for each work. Plans of the works may be inspected at the Committee's Office.

JULY 17-29.—**Bishop's Stortford.**—SCHOOL.—The Hertfordshire C.C. invite tenders for the erection and completion of a new High School for Girls at Bishop's Stortford. Names on or before July 17 to the architects, Messrs. Talbot, Brown, & Fisher, Wellingborough, together with the fee of 2*l.* 2s. for copy of quantities. The plans, specification, agreement, etc., may be seen at the architects' offices during the usual office hours.

JULY 19.—**Bristol.**—SETTING BACK.—The Sanitary and Improvement Committee of the Corporation invite tenders for the setting back and rebuilding fronts of Nos. 4, 5, and 6, Marsh-street, Bristol. The drawings, etc., may be seen at 63, Queen-square, and a copy of the bill of quantities obtained on deposit of 2*l.* 2s.

JULY 19.—**Bromley Union, Kent.**—WORKS OF EXTERNAL PAINTING AND REPAIRS, PARK HOUSE, AND 96 HIGH-STREET, BROMLEY.—The Guardians invite tenders for the works. Mr. John Ladds, architect, 93, Pemberton-road, Harringay, N. Plans can be seen at offices of Mr. Edward Haslehurst, Clerk to the Guardians, Union Offices, Park House, Bromley, Kent.

JULY 19.—**Croydon.**—REPAIR SHOPS, MESS ROOM, ETC.—Construction of (*a*) repair shop, (*b*) mess room, etc., at the Electricity Works, Factory-lane, Croydon. Plans may be seen and particulars, etc., obtained at the Electricity Works, Factory-lane.

JULY 19.—**Leeds.**—SCREENS.—Tenders are invited by the Markets Committee for the erection of new screens for store rooms on the balcony of the new Market Hall, Vicar-lane, Leeds. The specification, etc., may be seen and bills of quantities obtained at office of the Corporation.

JULY 19.—**Leeds.**—WORKHOUSE EXTENSION.—Leeds Guardians invite tenders for the bricklayers and masons, carpenters and joiners, plumbers, plasterers, slaters, painters, ironfounders, tiling, and hot-water heating required in the erection of Block "3" at the Union Workhouse, Beckett-street, Leeds. Names to the architect, Mr. G. F. Bowman, 5, Greek-street, Leeds. Each application must be accompanied by a deposit of 2*l.* 2s.

JULY 19. — **Neath, etc.** — SCHOOL WORKS. — Glamorgan C.C. invite tenders for:—(1) Alterations to the Skewen Lower Council School, near Neath; (2) alterations to the Neath Abbey Council School, near Neath; (3) alterations and additions to the Aberdare County School; (4) erection of caretaker's cottage at Mountain Ash County School; (5) alterations to Penrhiwfer Council School; (6) minor alterations at Port Talbot County School. Plans, etc., may be seen, and bills of quantities, etc., obtained, for works Nos. 1 and 2 at the Neath County Police-station, and for work No. 3 at the Aberdare Police-station. Plans may be seen, and specifications, etc., obtained, for work No. 4 at the Mountain Ash Police-station, for work No. 5 at the Penrhiwfer Council School, and for work No. 6 at the Port Talbot Police-station. The plans, etc., of all the works may be seen or obtained at offices of Mr. T. Mansel Franklen, Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

JULY 19.—**Offham.**—REPAIRS, ETC.—Kent Education Committee invite tenders for the execution of repairs, painting, etc., at Offham Council School. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. Percy C. Golesworthy, West Malling.

JULY 19.—**Rudham.**—SCHOOL WORKS.—Tenders are invited for the proposed alterations and additions to East and West Rudham Schools, Norfolk. Plans, etc., can be seen, and quantities, etc., obtained, upon application to the office of the architect, Mr. Louis F. Eagleton, King-street, King's Lynn.

JULY 19. — **Sheffield.** — RIVELIN VALLEY BATHING SHEDS.—The Health Committee of the City Council invite tenders for the works required in connexion with the construction of timber dressing-shed, etc., at the Rivelin Valley Bathing Pool. Particulars and form of tender, etc., may be obtained, and drawings inspected, at the office of the City Engineer, Town Hall, Sheffield, on payment of the sum of 10s. Application to be endorsed "Rivelin Valley Bathing Pool Dressing-shed."

JULY 20. — **Accrington.** — PREMISES. — Blackburn-road Building Company (Accrington), Ltd., invite tenders for the erection of proposed additional business premises. Application by letter to Mr. Henry Ross, architect, 15, Cannon-street, Accrington.

JULY 20.—**Blaenavon.**—WORKS AT SCHOOL.—Monmouthshire Education Committee invite tenders for asphalting playgrounds and repairs to boundary walls at the Blaenavon Park-street Infants' School. Plans, etc., may be seen at the office of Mr. C. Dauncey, Secretary, C.C. Offices, Newport, Mon.

JULY 20. — **Cefnycoed, Llandyssil.** — COUNCIL SCHOOL.—Montgomeryshire Education Authority invite tenders for the erection of the school. Plans may be seen at the County Education Offices, Newtown, on written application to Mr. Llewelyn Phillips, Clerk to the Education Authority, County Education Offices, Newtown, and also on payment of a deposit fee of 1*l.* 1s.

JULY 20. — **Dublin.**—REPAIRS, ETC.—The Technical Education Committee of the City of Dublin invite tenders for repairs, alterations, painting, etc., in connexion with the Technical Schools premises, Lower Kevin-street, Dublin, in accordance with the specification, etc., prepared by the City Architect. Copies of the specification, etc., can be obtained at the office of the City Treasurer, Municipal Buildings, Cork-hill, Dublin, on payment of 1*l.*

JULY 20.—**Hertford.**—REPAIRS, ETC.—The Corporation of Hertford invite tenders for the following work:—(1) Painting and repairs at 19 and 21, South-street; (2) painting and repairs at Market and Corn Exchange; (3) painting and repairs at library; (4) concrete wall, wharfing and cleaning out river at Waterford Marsh. Specifications can be seen and forms of tender obtained from the Borough Surveyor at his office, The Wash, Hertford, on payment of 3*l.* 3s. each for contracts 2 and 4.

JULY 20.—**Meltham.**—HOUSE.—Excavators' and masons' work (labour only) required in the erection of house at High Moor, Meltham. Plans can be seen and particulars obtained on application to Mr. W. Carter, architect, Station-street, Meltham.

JULY 20.—**Northmolton.**—COTTAGES.—Tenders are invited for the erection of cottages at Marsh Hall, Northmolton, for Col. L. L. Fenton. Drawings, etc., may be seen, and any other information obtained, upon application, by appointment, to Mr. E. D. Groves, King-street, Southmolton.

JULY 20. — **Thornhill.** — POINTING. — Thornhill U.D.C. invite tenders for the pointing, etc., of the chimney stack at the Sewage Works, Mill Bank, Thornhill. The specification, etc., may be obtained on application to Mr. A. Rothera, Engineer and Surveyor to the Council, Council Offices, Thornhill.

JULY 21. — **Edinburgh.**—BATHS.—The Magistrates and Council invite tenders for:—(1) Builders' and engineers' work of alterations at Turkish bath, Warrender Baths; (2) builders' work and weighing machine at alterations on property at Hamilton-place; (3) condensation pipes from boiler, etc., at washhouses, Allan-street. All according to plans, etc., which may be seen at the office of Mr. James A. Williamson, A.R.I.B.A., Public Works Office, City Chambers, from whom also schedules of quantities may be obtained on personal application.

JULY 21. — **Kinsale.** — COTTAGES. — Kinsale R.D.C. invite tenders for building twenty-one single cottages in accordance with plan, etc., to be seen at the Council Office. Conditions of contract, etc., can be had on application from Mr. John Murphy, Clerk of Council, Council Office, Kinsale Workhouse.

JULY 21.—**Kinsale.**—COTTAGES.—The R.D.C. invite tenders for additions and repairs to seventeen cottages (including in some cases the widening of entrance to cottage and supplying and hanging gates) in accordance with a specification which can be seen at the Council Office, Kinsale Workhouse, and also at the office of Mr. R. Evans, C.E., 55, South Mall, Cork.

JULY 21-31. — **Lydd.** — HOSPITAL.—The T.C. invite tenders for the erection of a new Infectious Hospital, Lydd. Mr. Thurlow Finn, architect, of 22, Surrey-street, Strand, W.C. The plans may be seen at office of Mr. Harold W. Stringer, Town Clerk, New Romney, or at that of the architect. Bills of quantities, etc., may be obtained of the architect.

JULY 21.—**Mirfield.**—KNOWL PROVIDED SCHOOL: CONVERSION OF OFFICES.—The Mirfield Education Sub-Committee of the West Riding County Council invite tenders for the work as a whole, or for the separate trades as required in the conversion of the offices and additions. Specifications may be obtained at offices of Mr. Percy Beaumont, Divisional Clerk, Station-road, Batley.

JULY 21. — **Rochdale.** — FLOORING.—The Libraries Committee invite tenders for the supply and laying of about 240 sq. yds. of maple wood block flooring, including taking up existing wood block flooring. Further particulars and form of tender may be obtained from the Borough Surveyor.

JULY 21.—**Withington.**—WORKHOUSE WARDS.—The Guardians of the Poor of the Chorlton Union invite tenders for the erection of two new blocks at the Withington Workhouse. Plans, etc., may be seen and bills of quantities obtained at the office of Messrs. Charles Clegg & Son, architects, 21, Spring-gardens, Manchester, upon payment of 2*l.* 2s.

JULY 22.—**Aberystwyth.**—CHURCH.—Erection of a church at Penparcau, Aberystwyth. Plans, etc., may be obtained from the architect, Mr. G. T. Bassett, A.R.I.B.A., architect and surveyor, Aberystwyth.

JULY 22.—**Gornahoe.**—REPAIRS TO COTTAGES.—The R.D.C. invite tenders for executing the necessary repairs to cottages. Specifications may be seen at the Clerk's Office, where tender forms may also be obtained.

JULY 22. — **Nantwich.** — SHOP.—Nantwich U.D.C. invite tenders for the taking down and rebuilding of shop, dwelling-house, and premises, No. 7, Pillory-street, Nantwich. Plans, etc., may be seen, and bills of quantities, etc., obtained, upon application to Mr. C. E. Davenport, architect, Nantwich, on payment of 1*l.* 1s.

JULY 23.—**Glasgow.**—RELINING.—The Corporation invite tenders for the relining with firebrick of the chimney stalk at Crawford-street Despatch Works, S.S. Specifications, etc., may be had on application to Mr. D. M'Coll, Superintendent of Cleansing, 38 Cochrane-street, Glasgow.

JULY 23. — **Grayrigg.** — SCHOOL WORKS. — Tenders are invited for the whole or separate works required in removing gallery, reseating and flooring, erecting vestry, and various other alterations at St.

Digitized by Google

John's Church, Grayrigg, for the Vicar and Churchwardens. Plans, etc., can be inspected, and bills of quantities, etc., obtained, on application at office of Mr. Stephen Shaw, F.R.I.B.A., architect, Kendal.

JULY 23.—**Manchester.**—WALL, ETC.—Manchester Corporation Parks and Cemeteries Committee invite tenders for the erection of a boundary wall and entrance gates at Brookdale Park, Newton Heath. Plan may be seen, and specification, etc., obtained, on application at the City Surveyor's Office, Town Hall, Manchester, on payment to the City Treasurer of 1*l.* 1s. All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

JULY 24.—**Edinburgh.**—NEW MARKETS AND SLAUGHTER-HOUSES, GORGIE.—The Magistrates and Council invite tenders for the whole trades, viz., mason, joiner, plumber, plaster, slater, glazier, tile layer, steel, and iron works, for proposed restaurant at New Markets, Gorgie, according to plans, etc., which may be seen at the office of Mr. James A. Williamson, A.R.I.B.A., Public Works Office, City Chambers, from whom also schedules of quantities may be obtained on personal application. A deposit of 3*l.* 3s., payable by crossed cheque only, will be required for the schedules.

JULY 24.—**Headington.**—ADDITIONS TO SCHOOL.—Oxfordshire Education Committee invite tenders for the erection of additional class-rooms and cookery centre at Headington Council School. Plans, etc., may be seen at the office of the County Surveyor, 8, New-road, Oxford, and bills of quantities obtained, on payment of 1*l.* 1s.

JULY 24.—**Scunthorpe.**—SKATING RINK.—Erection of a skating rink at Scunthorpe, in the county of Lincoln. Plans, etc., may be seen at the address of Mr. W. H. Buttrick, P.A.S.I., architect, Scunthorpe.

JULY 25.—**Birkenhead.**—BAKERY.—The Guardians invite tenders for alterations and additions to the bakery at the Birkenhead Union Workhouse. A copy of the specification from Messrs. E. Kirby & Sons, architects, 5, Cook-street, Liverpool, upon payment of 2*l.* 2s.

JULY 26.—**Isle of Graine.**—FARM BUILDINGS.—New farm buildings at White House Farm, Isle of Graine. Plans, etc., may be seen, and a copy of the specification obtained, upon payment of 1s., by personal application to Messrs. Vigers & Co., 4, Frederick's-place, Old Jewry, E.C.

JULY 26.—**Miskin.**—SCHOOL.—Mountain Ash Education Committee invite tenders for the erection of a Higher Standard Mixed School, to accommodate 160 scholars, with laboratory, manual instruction centre, offices, and boundary walls, at Miskin, Mountain Ash. Plans, etc., may be seen, and forms of tender, etc., obtained, on application to the Architect, Mr. W. H. Williams, Town Hall, Mountain Ash, upon the deposit of 2*l.* 2s.

JULY 26.—**Odiham Bury.**—WORKS AT SCHOOL.—Tenders are invited for external and internal decoration and minor repairs at Odiham Bury Fields Council School. The specification, etc., can be seen at the School on application to the Head Teacher.

JULY 26.—**Treforest.**—PUMPROOM.—Pontypridd U.D.C. invite tenders for the formation of ponds and erection of retaining walls and pumproom at the Treforest Generating Station. Plans, etc., may be seen and quantities, etc., obtained on application at the office of Mr. W. E. Lowe, Engineer and Surveyor to the Council, upon receipt by Mr. J. Colenso Jones, Clerk to the Council, Municipal Buildings, Pontypridd, of a deposit of 1*l.* 1s.

JULY 26.—**Wattstown.**—HOUSES.—Erection of thirty houses at Wattstown, Rhondda Fach, for the Wattstown No. 1 Building Club. Plans, etc., can be seen at office of Messrs. A. O. Evans, Williams, & Evans, architects, Pontypridd.

JULY 26.—**Wooldale.**—REPAIRS, ETC., TO SCHOOL.—West Riding C.C. District Education Sub-Committee invite tenders for the repairs and alterations to be carried out at the undermentioned schools during the summer holidays, namely, Wooldale Provided School, Hinchliff Mill School, Holme School. Specifications may be obtained at office of Mr. W. Heeley, Town Hall, Holmfirth.

JULY 27.—**Seaton Sluice.**—CHAPEL.—For erection of Wesleyan Methodist Chapel, Seaton Sluice. Plans may be seen, and all particulars learned, at the offices of Messrs. Joseph Potts & Son, architects and surveyors, 57, John-street, Sunderland. Quantities can be obtained on payent of 1*l.* 1s.

JULY 27.—**Thurlstone.**—ALTERATIONS, ETC.—The Thurlstone U.D.C. invite tenders for (1) fence and burr walling; (2) kerbing and channelling; and (3) alterations to entrance to Plumpton, at Thurlstone. Further particulars from the surveyor, Mr. Longden.

JULY 28.—**Belfast.**—OFFICE, ETC.—The Belfast Harbour Commissioners invite tenders for the erection of a weighbridge office, bridge pit, etc., and the erection of an existing weighbridge on the Donegall Quay, in accordance with drawing, which may be seen at the office of the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E., from whom copies of specification, etc., may be obtained.

* JULY 28.—**Hornsey Rise, N.**—DRYING ROOM.—The Guardians of St. Leonard, Shoreditch, invite tenders for a building at their additional workhouse, Hazelville-road, Hornsey Rise, N., to be used as a temporary room for drying purposes.—See advertisement in this issue for further particulars.

JULY 28.—**Harrogate.**—ADDITIONS, ETC., TO CHURCH.—Part or whole tenders are invited for additions and alterations to the United Methodist Church and schools, Harrogate. Bills of quantities can be obtained on application to Mr. W. Hugill Dinsey, architect, Chorley, Lancashire, on deposit of 10s. 6d. Plans may be inspected on the church premises.

JULY 28.—**Radlett, Herts.**—COTTAGE.—Erection of detached cottage at Radlett for Mrs. E. M. White. Plans and specifications may be obtained on application to the architect, Mr. George Gordon Samson, Oldfield, Bournemouth.

JULY 31.—**Newcastle-upon-Tyne.**—PUBLIC CONVENIENCE.—The Corporation of Newcastle-upon-Tyne invite tenders for the internal walls, sanitary fittings, floors, tiling, and joiner work for a men's public convenience, under the approach roadway to bridge, Milk Market. On payment, by the contractor, of 1*l.* 1s. to the City Treasurer, Town Hall, general conditions, etc., can be obtained, and drawings inspected, at the City Engineer's Office, Town Hall, Newcastle-upon-Tyne.

JULY 31.—**Pontycymmer.**—CHURCH.—Erection of new Mission Church at Pontycymmer. Plans, etc., may be seen at the offices of Mr. J. Cook Rees, architect, Parade-chambers, Neath.

JULY 31.—**St. Buryan.**—SCHOOL.—Cornwall Education Committee invite tenders for the erection and completion of Council School, according to plans, etc., which may be seen by appointment at the St. Buryan C. of E. School, or at the office of Mr. Sampson Hill, Architect to the Committee, Greenlane, Redruth, from whom all particulars relating to the work may be obtained.

JULY 31.—**Torpoint.**—SCHOOLS.—Cornwall Education Committee invite tenders for erecting new Council Schools at Torpoint, according to plans, etc., to be seen by appointment at the Torpoint C. of E. School, or at the office of Mr. B. C. Andrew, Architect to the Committee, Biddicks-court, St. Austell, from whom all particulars relating to the work may be obtained.

AUGUST 2.—**Glasgow.**—EXTENSION OF SLAUGHTER-HOUSES.—The Corporation invite tenders for the following works required in connexion with the buildings proposed to be erected in Moore-street and Hill-street, viz.:—(1) Digger, mason, and brick works; (2) joiner work; (3) iron and steel works; (4) plumber work; (5) slater work; (6) plaster and pavior works; (7) asphalte work; and (8) painter work. Plans may be seen at the office of the City Engineer, City-chambers, and forms of tender obtained at the Office of Public Works, City Chambers, 64, Cochrane-street, by depositing 5*l.* 5s.

AUGUST 2.—**Skewen.**—STATION.—Great Western Railway Directors invite tenders for the erection of a new station at Skewen, Glamorganshire. Plans, etc., may be seen, and forms of tender and bills of quantities obtained, at the office of the Engineer at Neath Station, between the hours of 10 a.m. and 4 p.m.

* AUGUST 6.—**Newcastle.**—ADDITIONS TO CUSTOMS HOUSE.—The Commissioners of H.M. Works invite tenders for alterations and additions at Blyth Customs House. See advertisement in this issue for further particulars.

AUGUST 10.—**Sheffield.**—TRAINING COLLEGE HALL OF RESIDENCE.—Sheffield Education Committee invite tenders for the erection of the Training College Hall of Residence for Men, and also for the heating and the electric lighting of the same. Drawings, etc., may be seen, and bills of quantities obtained, on application to the architects, Messrs. Gibbs & Flockton, 15, St. James-row, Sheffield.

No DATE.—**Barry Dock.**—CHAPEL.—Erection of a Wesleyan Chapel at Barry Dock. Names to Mr. Henry Budgen, F.R.I.B.A., 95, St. Mary-street, Cardiff, together with a deposit of 2*l.* 2s. for bills of quantities.

No DATE.—**Bradford.**—WAREHOUSE.—Erection of warehouse premises in Hall-lane, Bradford. Names to Messrs. James Young & Co., architects, 62, Market-street, Bradford.

No DATE.—**Croes Ynyd.**—HOSPITAL.—**The Conway** Joint Hospital Board invite tenders for the erection of a new Isolation Hospital, at Croes Ynyd, near Conway, for the Conway Joint Hospital Board. Names to Mr. T. B. Farrington, Trinity-square, Llandudno.

No DATE.—**Denholme.**—VILLAS.—Two semi-detached villas at Denholme. Plans may be seen at office of Mr. W. Pickels, architect, 60, New-road, Thornton.

No DATE.—**Dinedor, Hereford.**—WALLING, ETC.—The Rector and Churchwardens invite tenders for the walling and railing in of an addition to the churchyard.

No DATE.—**Hereford.**—FLOORING, ETC.—Flooring, seating, decorating, etc., at the Church of St. Nicholas, Hereford. Apply in writing to Mr. W. W. Robinson, architect, Hereford.

No DATE.—**West Bridgford.**—MASONIC BUILDINGS.—Tenders are invited for the erection and completion of new Masonic buildings, West Bridgford. Quantities can be obtained, and plans seen, at the office of Mr. A. E. Lambert, architect, 22, Park-row, Nottingham.

ENGINEERING, IRON, AND STEEL.

JULY 19.—**Billericay.**—BRIDGE.—The R.D.C. invite tenders for the construction of a brick and timber bridge (16 ft. wide and 11 ft. span) in Vicarage-lane, South Weald, according to plan, etc., to be seen on appointment with the surveyor, Mr. F. E. Ennals, Shelley-road, Hutton.

JULY 19.—**Darlington.**—BRIDGE WORKS.—The Corporation invite tenders for supplying and fixing iron railing and girder footbridge to footpath by the River Skerne, between John-street and Chestnut-street. Plans, etc., may be seen, and bill of quantities, etc., obtained, on application to Mr. George Winter, Borough Surveyor and Waterworks Engineer, Town Hall.

JULY 19.—**Eccles.**—WIRING.—The Health Committee of the Eccles Corporation invite tenders for the installation of electric wiring and fittings for the lighting of twelve houses now in course of erection by the Corporation in Corporation-road, Eccles. Copy of the specification and form of tender can be obtained from Mr. Edwin Parkes, Town Clerk, Town Hall, Eccles, on deposit of 10s. 6d.

JULY 20.—**London.**—BRIDGEWORK.—The Secretary of State for India in Council invites tenders for supply of bridgework. The conditions of contract may be obtained on application to the Director-General of Stores, India Office, Whitehall, S.W.

JULY 23.—**Edinburgh.**—HEATING.—The School Board invite estimates for boiler plant for the heating installation at Dairy School. Specifications may be obtained at the office of Mr. George Thomson, A.M.Inst.C.E., M.Inst.M.E., 11, Randolph-place.

JULY 23.—**Oldbury.**—HEATING.—The Oldbury U.D. Education Committee invite tenders for heating apparatus for Langley and Rounds Green Schools. Names to Mr. Sydney Vernon, Secretary, Public Buildings, Oldbury.

JULY 24.—**Burntisland.**—WEIGHBRIDGE.—The T.C. of the Burgh of Burntisland invite tenders for the repair of the Burgh weighbridge at Harbour-place, or alternatively for the supply and erection of a new weighbridge, capable of weighing two or four wheeled vehicles. Particulars may be had from Mr. J. A. Waddell, Burgh Surveyor.

JULY 24.—**Minehead.**—SEA DEFENCE WORKS.—Somerset C.C. Works Committee invite tenders for the carrying out of certain sea defence works at Blue Anchor, near Minehead. Copies of drawings, etc., can be obtained from the County Surveyor upon payment of 2*l.* 2s.

JULY 28.—**Ettrick.**—CONCRETE DAM.—Tenders are invited for the construction of a concrete dam and other incidental works across the river Ettrick, Selkirkshire. Specification, etc., can be obtained and drawings seen on deposit of 2*l.* 2s. at the offices of the engineers, Messrs. F. A. Macdonald & Partners, C.E., 135, Wellington-street, Glasgow.

* JULY 29.—**Caterham.**—DISINFECTING MACHINE.—The Metropolitan Asylums Board invite tenders for installation of two new foul linen washing and disinfecting machines. See advertisement in this issue for further particulars.

* JULY 29.—**Caterham.**—STEAM-JACKETED COOKING PANS.—The Metropolitan Asylums Board invite tenders for installation of the new steam-jacketed cooking pans. See advertisement in this issue for further particulars.

JULY 29.—**Hull.**—PIER.—Hull and Barnsley Railway Company invite tenders for labour and part of materials in the construction of a low-water landing pier in the River Humber at Hull. Drawings may be seen, and specifications, etc., obtained, at the office of the Engineer, Mr. R. Pawley, 9, Charlotte-street, Hull, on payment of 3*l.* 3s.

AUGUST 2.—**Gretna and Carluke.**—BRIDGE WORKS.—The Directors of the Caledonian Railway Company invite tenders for the works to be executed in the renewal of the superstructures of ten underbridges on the main line between Gretna and Carluke. Drawings may be seen at the office of the Company's District Engineer, Princes-street Station, Edinburgh, where copies of the specification, etc., may be obtained on payment of 2*l.* 2s.

AUGUST 2.—**London.**—BRIDGE GIRDERS.—Great Western Railway Directors invite tenders for the supply of 110 tons of steel bridge girders and other iron and steel work of British manufacture. Plans, etc., may be seen and forms of tender and bills of quantities obtained at the office of the engineer at Paddington station, between the hours of 10 a.m. and 4 p.m.

AUGUST 2.—**London.**—PLATFORM COVERINGS.—Great Western Railway Directors invite tenders for the completion of platform coverings at Plymouth (North-road) station, the steel work for which is already fixed. Plans, etc., may be seen and forms of tender and bills of quantities obtained at the office of the engineer at Plymouth (North-road) station.

AUGUST 2.—**Small Heath.**—BRIDGE.—Great Western Railway Directors invite tenders for the reconstruction of Golden Hillock-road bridge, at Small Heath station, near Birmingham. Plans, etc., may be seen and forms of tender, etc., obtained at the office of the new works engineer at Paddington station, London.

* AUGUST 5.—**Hull.**—WROUGHT-IRON GATES, ETC.—The Hull Corporation invite tenders for wrought-iron entrance gates, etc., for the Pickering Park, Hull. See advertisement in this issue for further particulars.

AUGUST 9.—**Bedlington.**—BRIDGE WORKS.—Bedlingtonshire U.D.C. invite tenders for execution of work as under, namely, furnace bridge: For the strengthening of the furnace bridge at Bedlington Bank Top, in ferro-concrete (Hennibique system). Drawings, etc., may be seen, and quantites, etc., obtained, by appointment, at the office of the Surveyor of the Council, Mr. J. E. Johnston, Front-street, Bedlington.

AUGUST 9.—**Southport.**—ENGINES, ETC.—Southport, Birkdale, and West Lancashire Water Board invite tenders for the supply and erection of two beam pumping engines, three Lancashire boilers, and other machinery required at their Bickerstaffe Pumping Station, situate at or near Royal Oak, in the Parish of Bickerstaffe, Lancaster. The drawings may be seen, and a copy of the specification, etc., may be obtained at the office of Messrs. H. Rofe & Son, civil engineers, 8, Victoria-street, Westminster, S.W., upon payment of the sum of 5*l.* 5s.

MISCELLANEOUS.

JULY 23.—**Merton.**—DUST VANS.—Merton U.D.C. invite tenders for the supply of three tipping dust vans. Particulars can be obtained on application to Mr. C. J. Mountifield, Clerk, District Council Offices, Kingston-road, Merton, Surrey.

JULY 24.—**Harrow-on-the-Hill.**—FIRE-ENGINE.—The U.D.C. invite tenders for the supply of a petrol motor fire-engine. Particulars may be obtained from Mr. John Strachan, Clerk, Council Offices, Harrow-on-the-Hill.

JULY 26.—**Witham.**—STEAM ROLLER.—The U.D.C. invite tenders for the use per day of steam roller and scarifier. Mr. W. P. Perkins, Witham.

JULY 27.—**Hoddesdon.**—STREET LIGHTING.—Hoddesdon U.D.C. invite tenders for lighting with gas the public lamps in the district. Further particulars may be obtained of the Surveyor, Mr. W. H. Flood, Council Offices, Hoddesdon.

* JULY 28.—**Edmonton.**—PRIVATE TELEPHONES.—The Edmonton Guardians invite tenders for supply and installation of a private telephone equipment. See advertisement in this issue for further particulars.

Digitized by Google

JULY 28.—**Hull.**—ELECTRIC LIGHT, ETC., FITTINGS.—Tenders are invited for the necessary electric and gas light fittings required for the new Public Hall. Plans of the building may be seen and specifications obtained at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull.

JULY 28.—**Wanstead.**—STEAM ROLLER.—Wanstead U.D.C. invite tenders for the supply of a 10-ton steam roller, with driver, attendant, fuel, etc. Forms of tender, etc., can be obtained on application to the Surveyor, at the Council Offices.

JULY 29.—**Gosforth.**—SCAVENGING.—Gosforth U.D.C. invite tenders for the cleansing of the ash-pits, ashboxes, etc. Specification, etc., may be had on application at the Council Offices, from the Inspector of Nuisances.

JULY 30.—**Newport.**—SCAVENGING AND HAULING.—The Corporation of Newport invite tenders for the removal of house refuse, ashes, street sweepings, etc., together with any other team work which may be required in the way of scavenging and watering the borough. Specification and general conditions prepared by the Borough Engineer, from whom any further particulars may be obtained.

✱ AUGUST 4.—**London.**—CHINA AND EARTHENWARE.—The Commissioners of H.M. Works, etc., invite tenders for supply of china and earthenware (leadless glaze only), for period October 1, 1909, to March 31, 1910. See advertisement in this issue for further particulars.

AUGUST 9.—**London.**—CREOSOTING TELEGRAPH POLES.—Forms of tender, containing all particulars, may be obtained on application to Mr. G. Morgan, Controller of Stores, Stores Department, G.P.O., 17-19, Bedford-street, London, W.C.

AUGUST 14.—**Alton.**—ROLLER.—Alton U.D.C. invite tenders for the hire of a 10-ton steam road roller. Forms of tender may be obtained at office of Mr. W. Bradly Trimmer, Clerk to the Council, Alton.

NO DATE.—**Felixstowe.**—SCAVENGING.—The Felixstowe and Walton U.D.C. invite tenders for the emptying of certain cesspools. Specification may be seen, and forms of tender may be obtained, on application to the Surveyor, Town Hall, Felixstowe.

NO DATE.—**Woodhouse.**—DUAL SECONDARY SCHOOL FURNITURE.—Furnishing of the teachers' rooms, assembly hall, etc. (tables, chairs, desks, cupboards, hat-stands, etc.). Particulars from Mr. S. Abson, Education Offices, Woodhouse, Sheffield. Tenders also wanted for furnishing of the art rooms, class-rooms, store-rooms, etc. (students' desks, teachers' desks, cupboards, etc.).

PAINTING, etc.

JULY 19.—**Barnstaple.**—PAINTING.—The Education Committee invite tenders for painting and colouring at the National Infant Schools in the churchyard, and also at the Trinity Boys' School in Trinity-street. All particulars may be obtained at office of Mr. E. Y. Saunders, M.Inst.C.M.E., Borough Surveyor, The Strand, Barnstaple.

JULY 19.—**Chatham.**—PAINTING.—The Borough of Chatham Education Committee invite tenders for certain works of cleaning, painting, and colouring the interior of schools. Specification, etc., can be obtained on application at the Borough Surveyor's office, Town Hall, Chatham.

JULY 19.—**Littlemoor.**—PAINTING, ETC.—Tenders are invited for the whitewashing colourwashing, and painting the Newbold Church of England Schools at Littlemoor during the holidays. Further particulars may be obtained from Mr. Edmund Taylor, Myrtle House, Newbold-road Chesterfield.

JULY 19.—**Swansea.**—PAINTING.—The Education Committee invite tenders for the painting of schools. Upon deposit of 1*l.* 1s., specifications, etc., may be seen and all particulars obtained at the office of Mr. Marcus Hoskins, F.S.I., Borough Estate Agent, Coleridge House, Swansea.

JULY 20.—**Hunslet.**—PAINTING.—The Guardians invite tenders for certain painting required at their Workhouse at Rothwell Haigh. Forms of tender, etc., may be obtained on application at office of Mr. Fred. W. Mee, Clerk to the Guardians, Union Offices, Hunslet, Leeds.

JULY 21.—**Glanford Brigg.**—PAINTING.—The Guardians invite tenders for the painting of all outdoor wood and iron work at the Workhouse, Brigg, and the inside and outside of the Board Room and Committee Room. Specifications may be obtained at office of Mr. Frank C. Hett, Clerk, Brigg.

JULY 21.—**Preston.**—DECORATION.—The Park School Governors invite tenders for the decoration of the Park School, Moor Park, Preston. Specification, etc., may be obtained at the office of the Borough Engineer and Surveyor, Town Hall, Preston on payment of 10s. 6d.

JULY 21.—**Shoreditch.**—PAINTING.—The Guardians of the Poor of the Parish of Saint Leonard, Shoreditch, invite tenders for painting and other work at their Casual Wards, Reeves-place, Hoxton, N. The specification can be seen at the office of Mr. A. W. S. Cross, F.R.I.B.A., 46, New Bond-street, W.

JULY 21.—**York.**—PAINTING.—The Corporation invite tenders for the painting, etc., of properties belonging to the various Committees. Specification, etc., may be obtained at office of Mr. F. W. Spurr, City Engineer, Guildhall, York.

JULY 22.—**Chesterfield.**—PAINTING, ETC.—Chesterfield Education Committee invite tenders for cleaning, colour-washing, and painting the interior of the Victoria and Trinity Schools, in accordance with specification, copy of which may be obtained from Mr. W. Jacques, Secretary, Education Offices, Foljambe-road.

JULY 22.—**Loytonstone.**—PAINTING.—West Ham Guardians invite tenders for renovating parts of the interior of their Infirmary, Whipps Cross-road, Leytonstone, N.E. A copy of the specification, etc., can be obtained at office of Mr. Thomas Smith, Clerk, Clerk's office, Board-room, Union-road, Leytonstone, N.E., upon payment of a deposit of 1*l.*

JULY 22.—**Sheffield.**—PAINTING, ETC.—The Guardians invite tenders for painters' and whitewashers' work required at the Union Workhouse, Fir Vale. Specifications prepared by the Clerk of Works, a copy of which may be seen and further particulars obtained on application at the Workhouse.

JULY 23.—**King's Lynn.**—CLEANING OF SCHOOLS.—King's Lynn Elementary Education Committee invite tenders for the work of cleaning and colouring the interior of the St. Margaret's Schools. For specifications, etc., apply to the Secretary, Education Office, King's Lynn.

JULY 24.—**Manchester.**—PAINTING.—The Libraries Committee invite tenders for painting at the Deansgate, Rochdale-road, Longsight, and Moston Branch Libraries. Specifications may be obtained on application to the City Architect, Town Hall, Manchester.

JULY 28.—**Derby.**—PAINTING, ETC.—Derbyshire C.C. Standing Joint Committee invite tenders for painting and decorating the interior of the County Offices, St. Mary's-gate, Derby. Specifications, etc., may be obtained at the office of Mr. Geo. C. Copestick, County Offices, St. Mary's-gate, Derby.

JULY 28.—**Glasgow.**—PAINTING, ETC.—The Corporation invite offers for the cleaning and painting work required at Pollokshields, Dixon, Kingston, Kinning Park, Springburn, Maryhill, and Hillhead Public Halls. Specifications, etc., may be had on application at the Office of Public Works, City Chambers, 64, Cochrane-street.

✱ JULY 30.—**St. Marylebone.**—PAINTING, ETC.—The Board of Management, St. Marylebone Almshouses, invite tenders for external painting and repairs to the above. See advertisement in this issue for further particulars.

NO DATE.—**Arkendale Estate.**—PAINTING.—Tenders are invited for painting the outside of premises, etc., on Estate. Mr. Wallace Gill, solicitor, Knaresborough.

ROADS, SANITARY, AND WATER WORKS.

JULY 17.—**Chesham.**—SEWER.—Chesham U.D.C. invite tenders for constructing about 460 yds. of 9-in. stoneware pipe sewer in Khartoum-avenue, Cheshaan. Plans, etc., may be seen, upon application to Mr. Percy C. Dormer, Engineer and Surveyor, Council Offices, Chesham, Bucks.

JULY 19.—**Chelmsford.**—SEWERS.—The T.C. invite tenders for laying a sewer in Burgess Well-road, and extending the sewer in Rainsford-road. Specifications, etc., may be obtained, and the plans may be inspected, at the Borough Surveyor's office, 16, London-road.

JULY 19.—**Leeds.**—STREET WORKS.—The Highways Committee invite tenders for the flagging, concreting, and paving of East-street, from Low Fold to Easy-road. Plan, etc., may be seen at the City Engineer's Office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

JULY 19.—**Monaghan.**—CLEANING RIVER.—Monaghan R.D.C. invite tenders for cleaning the river between railway bridge at Rectory and River Blackwater. Mr. Patrick Toal, Clerk of Council, Board-room, Workhouse, Monaghan.

JULY 19.—**Sleaford.**—WATERWORKS FOR THE PARISH OF DORRINGTON.—The Sleaford R.D.C. invite tenders for the supply and laying of about 1,880 lin. yds. of cast-iron pipes (3 in. in diameter), the provision and fixing of valves, standposts, etc., and the erection of a pumping station, machinery, etc. Mr. W. B. Marsden, Engineer and Surveyor to the Council, Sleaford. Copies of the specification, etc., may be obtained from, and the plans inspected at, the offices of the aforesaid engineer, 74, Southgate, Sleaford, upon payment of 1*l.* 1s. (cheque only).

JULY 19.—**Whitley.**—MAKING-UP.—Whitley and Monkseaton U.D.C. invite tenders for the making-up of streets. Plans, etc., can be seen, and bills of quantities obtained, on application at the office of Mr. A. J. Rousell, A.M.Inst.C.E., Surveyor to the Council, Council Offices, Whitley Bay.

JULY 20.—**Bilston.**—PRIVATE STREET WORKS, MYRTLE-STREET.—The U.D.C. invite tenders for the execution of the works above named. Plans may be seen and specifications, etc., obtained on application to Mr. Vincent Turner, A.M.Inst.C.E., Engineer and Surveyor, Town Hall, Bilston.

JULY 20.—**Blaenavon.**—ASPHALTING, ETC.—Monmouthshire Education Committee invite tenders for asphalting playgrounds and repairs to boundary walls at the Blaenavon Park-street Infants' School. Plans, etc., may be seen at the office of Mr. C. Dauncey, Secretary, County Council Offices, Newport, Mon.

JULY 20.—**Bushey.**—SEWERAGE.—Bushey U.D.C. invite tenders for carrying out a scheme for the sewering of parts of the Parish of Bushey. The drawings, etc., may be seen, and form of tender, etc., obtained, on payment of a deposit of 2*l.* 2s., at the office of Mr. E. E. Ryder, Engineer to the Council, Bushey.

JULY 20.—**Nelson, Abertridwr, and Taff's Well.**—ROAD AND SEWER WORKS.—Caerphilly U.D.C. invite tenders for works, *i.e.*:—(1) Nelson (*a*) Widening short length of road at the Old Toll House; (*b*) construction of about 200 yds. of 6-in. and 9-in. sewer, at Tairheol. (2) Abertridwr, widening of short length of road, bottom of High-street. (3) Taff's Well, erection (only) of three-stall urinal at the public cemetery. Plans, etc., can be seen, and forms of tender obtained, on application to Mr. Alfred O. Harpur, engineer and surveyor, Caerphilly.

JULY 21.—**Eston.**—STREET WORKS.—Eston U.D.C. invite tenders for the paving with slag bricks and surface-water draining the back streets on the east side of Grangetown running from north to south between Bessemer and Cheetham streets. Plans, etc., may be seen and forms of tender obtained on application to Mr. C. McDermid, Surveyor, Council Offices, Whitworth-road, Grangetown, S.O., Yorks.

JULY 21.—**Withington.**—DRAINAGE.—The Guardians of the Poor of the Chorlton Union invite tenders for a drainage scheme in connexion with the proposed new "Infirm Wards" at the Withington Workhouse. Plans may be seen and bills of quantities obtained at the office of Messrs. Charles Clegg & Son, architects, 21, Spring-gardens, Manchester, upon payment of 2*l.* 2s.

JULY 22.—**Hayes.**—ROAD-MAKING, ETC.—Uxbridge Joint Hospital Board invite tenders for iron fencing, gates, water piping, and road-making at their Small-pox Hospital, Yeading-lane, Hayes, Middlesex. Plans, etc., can be seen at the offices of the Board's Surveyor, Mr. William L. Eves, 54, High-street, Uxbridge, Middlesex.

JULY 22.—**Hendon.**—ROAD WORKS.—The R.D.C. of Hendon invite tenders for kerbing, channelling, paving, making-up, etc., the following roads in the parish of Harrow Weald:—Belmont-road, Stuart-road (part of). The conditions of contract and plans, etc., may be seen at the office of Mr. J. A. Webb, Engineer and Surveyor to the Council, Stanmore, where schedule of quantities, etc., can be obtained on deposit of 5*l.*

JULY 22.—**Longton.**—STREET WORKS.—The T.C. of the Borough of Longton invite tenders for the forming, kerbing, channelling, paving, etc., of Prospect-place. Plans, etc., may be seen, and bill of quantities obtained, on application to Mr. J. W. Wardle, C.E., Borough Surveyor, Courthouse, Longton.

JULY 22.—**Reading.**—MAKING-UP, ETC.—The Urban Sanitary Authority invite separate tenders for:—(*a*) The making-up of Norris-road and part of St. Peter's-road; (*b*) the execution of works of sewering the part of St. Peter's-road which extends from Lennox-road to Church-road. The drawings may be seen and specifications, etc., obtained at offices of Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

JULY 23.—**Merton.**—STREET WORKS.—The U.D.C. invite tenders for making-up Park and Milner roads. Plans, etc., may be seen and forms of tender obtained (on payment of 2*l.*) on application to Mr. G. Jerram, Surveyor.

JULY 27.—**Barking Town.**—STREET WORKS.—The U.D.C. of Barking Town invite tenders for the execution of private street works at Devon and Sparsholt roads. Plans, etc., may be seen and specification, etc., obtained from Mr. C. F. Dawson, Surveyor to the Council, Public Offices, Barking.

JULY 27.—**Gateshead.**—PAVING.—Tenders are invited for paving, etc., the following streets, viz.:—(1) Back Albert-drive (remainder of); (2) Back-street, between Prince Consort-road and Gladstone-terrace; (3) Back Fern Dene-road; (4) Back Rawling-road between Kelvin-grove and Dunsmuir-grove. Plans, etc., may be seen and quantities obtained at the office of N. P. Pattinson, Borough Engineer, Town Hall, Gateshead.

JULY 27.—**Ledbury.**—SEWER.—Ledbury U.D.C. and Guardians invite tenders for the laying of about 100 yards of 9-in. stoneware pipe sewer in the Union-lane. The above Guardians also invite tenders for the reconstruction of the workhouse drainage. The plans, etc., may be seen at the office of Mr. R. G. Gurney, surveyor, Ledbury, and bill of quantities obtained on deposit of 2*l.* 2s.

JULY 27.—**Lytham.**—STREET WORKS.—Lytham U.D.C. invite tenders for making up streets, also for sewering Dock-road. Plans may be seen and specification, etc., obtained from the Surveyor to the Council on payment of 1*l.* 1s.

JULY 27.—**Waterloo-with-Seaforth.**—ROAD WORKS.—The U.D.C. of Waterloo-with-Seaforth invite tenders for works of sewering, paving, flagging, kerbing, channelling, etc., streets and passages. Plans, etc., may be seen, and bills of quantities obtained, on application to Mr. F. Spencer Yates, A.M.Inst.C.E., the Surveyor to the Council, at the Town Hall, Waterloo. The sum of 10s. 6d. must be deposited for quantities.

✱ JULY 27.—**Willesden.**—ROAD-MAKING.—The Willesden D.C. invite tenders for certain road-making and paving works. See advertisement in this issue for further particulars.

JULY 28.—**Govan.**—PUBLIC BOWLING GREENS.—The T.C. invite tenders for the formation of two public bowling greens. Plans and sections may be seen and specifications and schedules obtained on application to Mr. F. G. Holmes, C.E., Town Hall, Govan.

JULY 28.—**Guildford.**—PRIVATE STREET WORKS.—The T.C. invite tenders for draining, forming, metalling, kerbing, channelling, and making-up roads. Plans, etc., may be seen, and form of tender obtained, on application to Mr. C. G. Mason, C.E., the Borough Surveyor, at his office in Tuns Gate.

JULY 28.—**Harrow-on-the-Hill.**—SEWERAGE.—The U.D.C. invite tenders for:—No. 1—The construction of sewerage works, comprising the laying of about 2,000 lin. yds. of 18-in. and 15-in. stoneware pipe sewers; No. 2—The construction of sewage disposal works, comprising sedimentation and detritus tanks, etc. The plans, etc., may be seen, and quantities obtained, at the office of Mr. J. Percy Bennetts, C.E., Surveyor to the Council, on deposit of 3*l.* for each contract.

JULY 28.—**Llantrisant.**—SEWER.—Llantrisant and Llantwit Fardre R.D.C. invite tenders for providing and laying about 320 yds. of 6 in. diaeter stoneware pipe sewer, together with manholes, cesspool, etc., at Lanelay-road, Llantrisant. Plans, etc., may be seen at the office of Mr. Gomer S. Morgan, Surveyor, School-street, Pontyclun, from whom bills of quantities, etc., may be obtained, on payment of a deposit of 1*l.*

✱ JULY 28.—**Tooting.**—MAKING-UP AND PAVING.—The Wandsworth B.C. invite tenders for making-up and paving Rectory-lane, Tooting. See advertisement in this issue for further particulars.

✱ JULY 29.—**Stroud.**—SEWAGE DISPOSAL.—The Stroud R.D.C. invite tenders for additions to contact filter beds, including about 1,200 yd. of filtering material, and other works, at Ebley, near Stroud. See advertisement in this issue for further particulars.

JULY 29.—**Treherbert and Treorky.**—STREET WORKS.—Rhondda U.D.C. invite tenders for the paving, kerbing, channelling, road-making, etc., of streets. Plans may be seen and specifications, etc., obtained at the Public Offices, Pentre, Rhondda, on depositing the sum of 1*l.* 1s.

JULY 30.—**Downpatrick.**—WATERWORKS.—The Committee of Management of Down District Lunatic Asylum, Downpatrick, invite tenders for works to supply the Institution with water from a well-bore on the Asylum lands. The drawings, etc., may be seen at the Asylum.

JULY 30.—**Grange-over-Sands.**—CARTMEL VALLEY WATER SCHEME.—The U.D.C. invite tenders for the manufacture, delivery, and laying (including

Digitized by Google

excavating trenches) of about 5,840 lin. yds. of 6-in. and 3,070 lin. yds. of 5-in. steel water mains, together with the necessary, valves, etc. Plans, etc., may be inspected and forms of tender obtained at the Council Offices, Grange-over-Sands.

JULY 31.—**Gulval Cross.**—SCHOOL YARDS.—Cornwall Education Committee invite tenders for the proposed improvements to yards, according to plan, etc., which may be seen by appointment at the school, or at the office of Mr. Sampson Hill, Architect to the Committee, Green-lane, Redruth, from whom all particulars may be obtained.

JULY 31.—**Macclesfield.**—SEWERS.—The R.D.C. invite tenders for the laying of about 478 yds. of 9-in. stoneware pipe sewers, etc., at Woodford, and about 230 yds. of 6-in. stoneware pipe sewers, etc., at Poynton. Plans may be seen by appointment with Mr. J. Thorpe, surveyor, 19, King Edward-street, Macclesfield, from whom specification, etc., may be obtained on payment of 1*l.* by cheque.

AUGUST 2.—**Ulverston.**—CARTMEL WATER SUPPLY WORKS.—Ulverston R.D.C. invite tenders for cast-iron pipes, probable quantity 196 tons; valve hydrants and fittings; constructional work of laying pipes, etc. Specification and form of tender can be obtained from the Council's Engineer, Mr. W. F. Y. Molineux, Town Hall, Ulverston.

* AUGUST 4.—**Hove.**—WOOD PAVING.—The Hove Corporation invite tenders for wood paving in Goldstone Villas. See advertisement in this issue for further particulars.

AUGUST 5.—**Oswestry.**—SEWAGE DISPOSAL WORKS.—The T.C. invite tenders for the construction of open settling tanks, detritus tanks storm-water tanks, percolating filters, effluent outfall, and other sewers, preparation of land, and other works. Drawings may be seen, and specification, etc., obtained, by application to Mr. G. William Lacey, M.Inst.C.M.E., Borough Engineer and Surveyor, Guildhall, Oswestry, on payment of a deposit of 2*l.* 2*s.*

STONES, MATERIAL, AND STORES.

JULY 19.—**Mutford.**—GRANITE SPALLS.—Mutford and Lothingland Guardians invite tenders for the supply of about 200 tons of Guernsey or equally hard granite spalls, delivered on Lowestoft Quay. Mr. Frank Peskett, Clerk, 148, London-road, Lowestoft.

JULY 19.—**Saffron Walden.**—GRANITE.—Tenders are invited for the supply and delivery at Saffron Walden railway station of about 500 tons of granite macadam, broken to 1½-in. and 2-in. gauge. Samples of granite, with tender, to be delivered to Mr. A. H. Forbes, Borough Surveyor.

JULY 20.—**Banbury.**—HARTSHILL STONE.—The Guardians require 200 tons of best hand-picked, unbroken Hartshill stone delivered at the Workhouse. Mr. E. Lamley Fisher, Clerk, Union Offices, Banbury.

JULY 20.—**Hammersmith.**—GUERNSEY GRANITE SPALLS.—Tenders for the supply and delivery of 100 tons of Guernsey granite spalls to the Workhouse, Ducane-road, Wormwood Scrubbs, W., are invited by the Guardians.

JULY 20.—**Kidderminster.**—OIL.—The Drainage and Waterworks Committee of the Borough of Kidderminster invite tenders for the supply of cylinder and engine oil, to be delivered to their pumping station in Green-street, Kidderminster, for a period of twelve months. Copies of conditions, etc., can be had on application to Mr. James Morton, Town Clerk, Town Hall, Kidderminster.

JULY 20.—**London.**—STORES.—Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of chemically dressed wagon covers and red and white lead. Forms, etc. can be obtained at offices of Mr. C. Crommelin, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 21*s.* each (which will not be returned).

JULY 20.—**London.**—WHEELS AND AXLES.—The South Indian Railway Company, Ltd., invite tenders for the supply of:—(1) Disc wheels with axles; (2) springs; (3) steel rails and fishplates; (4) tie-bars, gibs, and cotters. Specifications, etc., may be obtained at the company's offices, 91, York-street, Westminster, S.W. A charge, which will not be returned, will be made of 20*s.* for each copy of specification Nos. 1 and 3, and 10*s.* for each copy of Nos. 2 and 4. Copies of the drawings may be obtained at the office of Mr. Robert White, M.Inst.C.E., Consulting Engineer to the company, 3, Victoria-street, Westminster, London, S.W., on payment of 5*s.* per sheet.

JULY 20.—**Manchester.**—PITCH.—Manchester Corporation Tramways Committee invite tenders for the supply of pitch for paving purposes. Specifications, etc., may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

JULY 20.—**Southowram.**—GRANITE.—Southowram U.D.C. invite tenders for the supply of granite and dross. Tenders should be sent, along with sample (carriage paid), to Mr. J. Edgar Oates, surveyor, care of Messrs. John Farrar & Sons, Ltd., North Bridge Stone Wharf, Halifax.

JULY 24.—**Chadderton.**—FILTERING MEDIUM.—Chadderton U.D.C. invite tenders for about 6,000 cubic yds. of clean, hard blast-furnace slag, or other equally hard material. For further particulars apply to Messrs. James Diggle & Son, civil engineers, Hindhill-street, Heywood.

JULY 26.—**Horwich.**—GOODS AND MATERIALS.—Horwich U.D.C. invite tenders for the supply of goods and materials. Form of tender, etc., can be obtained on application to the Surveyor, Mr. Thos. Green, Council Offices, Horwich.

JULY 26.—**Sunbury-on-Thames.**—TAR MACADAM AND FLINTS.—The U.D.C. invite tenders for the supply and delivery of not less than 450 tons of tar macadam. Also for the supply and delivery of not less than 500 cubic yds. of Kentish brown pit flints. Further particulars may be obtained of Mr. Harold F. Coales, the Surveyor to the Council.

JULY 26.—**Witham.**—GRANITE.—Witham U.D.C. invite tenders for the supply of 600 tons for main roads and 400 tons for other roads of good granite. No special form of tender is issued. Mr. Wm. Bindon Blood, Clerk of the Council, Witham, Essex.

JULY 31.—**Eastbourne.**—PIPES.—The Highways and Drainage Committee of the Corporation invite tenders for the supply of about 465 tons in all of cast-iron pipes, 4·5 ft. internal diameter. Drawings, etc., may be seen, and forms of tender and copies of the specification may be obtained, at office of Mr. A. Ernest Prescott, Borough Engineer, Town Hall, Eastbourne.

JULY 31.—**Eastbourne.**—PIPES.—The Highways and Drainage Committee of the Corporation invite tenders for the supply and delivery of 800 lin. yds. or thereabouts of 24-in. diameter glazed stoneware pipes. Specification, etc., may be obtained at office of Mr. A. Ernest Prescott, Borough Engineer, Town Hall, Eastbourne.
Eastbourne, on payment of 2*l.* 2*s.*

JULY 31.—**Stone.**—SLAG.—Stone R.D.C. invite tenders for the supply of broken slag. Particulars may be obtained from Mr. C. A. Benbow, Rough-close, Stoke-on-Trent.

AUGUST 14.—**Alton.**—GRANITE.—Alton U.D.C. invite tenders for the supply of granite. Forms of tender may be obtained at office of Mr. W. Bradly Trimmer, Clerk to the Council.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*SURVEYOR	Chertsey R.D.C.	150*l.*	July 26
*DRAUGHTSMAN	Sierra Leone	300*l.* per annum, etc.	do.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
*STOCK OF A BUILDER'S MERCHANT—At Folly Wharf, Rollins-street, S.E.	H. W. Smith	July 19
*BUILDER AND CONTRACTOR'S STOCK AND PLANT—Church-road, Hendon	J. Hibbard	July 20, etc.
*FREEHOLD BUILDING LAND, HARROW WEALD—At the Mart	Southon & Robinson	July 21
*FREEHOLD HOUSE AND BUSINESS PREMISES, TEDDINGTON—On the Premises	Fred. G. Hughes	do.
*WALLPAPER—At 230, Pentonville-road, N.	Fryer, Cooper, & Co.	do.
*GROOVING WALLPAPER PATENT RIGHTS—At 230, Pentonville-road, N.	Fryer, Cooper, & Co.	do.
*BUILDING SITE—On the Estate, Rotherham, Sussex	Chapman & Martin	do.
*FREEHOLD ESTATE, SEVENOAKS—At the Mart	Cronks	July 23
*FREEHOLD PROPERTY, NEAR ROCHESTER—At the Mart	Cronks	do.
*FREEHOLD ESTATE, COLD NORTON, ESSEX—At the Mart	Robson & Perrin	do.
*FREEHOLD LAND, FACTORY, MACHINERY, ETC., HAYES, MIDDLESEX—At the Mart	Jones, Lang, & Co.	July 26
*EXHIBITION BUILDING, SHEPHERD'S BUSH—At the Mart	Fuller, Horsey, Sons, & Cassell	July 28
*FREEHOLD LAND, WIMBLEDON—At the Mart	Leopold Farmer & Sons	July 29
*FREEHOLD ESTATE, WESTCLIFF-ON-SEA—Council Chambers, Southend	Duncan & Kimpton	July 31

RECENT SALES.—*Continued from page 79.*

By H. & R. L. COBB (at Rochester).

Longfield, Kent.—Middleton Farm, 26 a. 2 r. 38 p., f.	£1,050
Southfleet, Kent.—Church House, f.	450
Red-st., freehold house and shop	250
Northfleet, Kent.—The Old Rectory and 8 a. 2 r. 29 p., f.	1,200
Chalk, Kent.—Filborough Farm, 243 a. 0 r. 31 p., f.	6,000
London-rd., freehold land, 2 a. 0 r. 23 p.	110
West Filborough and 5 a. 1 r. 0 p., f.	1,050
1, 2, and 3, Golf Cottages, f.	180
Readers and 6 a. 2 r. 18 p., f.	780
Vine Cottage, f.	135
Market Garden Land, 4 a. 0 r. 6 p., f.	165
Arable Land, 1 a. 3 r. 12 p., f.	100
Rye-st., four freehold cottages	280

By HUNT & PEDDAR (at Ipswich).

Hintlesham, Suffolk.—Remaining portions of the Hintlesham Hall Estate, 968 acres, f., (in lots)	15,555

By W. J. MAY & SONS (at Liskeard).

Morval, Cornwall.—Lydcott Farm, 268 a. 2 r. 15 p., f.	5,600

By MORRIS, SONS, & PEARD (at Petherton).

South Petherton, Somerset.—South Harp Farm, Tarampa House, and accommodation lands, 899 acres, f. (in lots)	23,833

July 7.—By H. DONALDSON & SONS.

Islington.—49, 50, and 51, Canterbury-rd., u.t. 42 yrs., g.r. 11*l.* 5*s.*, w.r. 118*l.*	540
11, Englefield-rd., u.t. 73 yrs., g.r. 12*l.* 10*s.*, w.r. 57*l.*	280
15, 17, and 19, Bishop's-gr., u.t. 53 yrs., g.r. 12*l.* 12*s.*, w.r. 109*l.*	£315
Haggerston.—67 and 69, Angrave-st, u.t. 29½ yrs., g.r. 6*l.*, w.r. 91*l.*	450
Hackney.—7 to 15; 19 to 27 (odd), Hertford-rd., u.t. 10 yrs., g.r. 37*l.* 16*s.*, w.r. 379*l.*	700
51 and 53, Hertford-rd., u.t. 9½ yrs., g.r. 8*l.* 9*s.*, w.r. 76*l.* 14*s.*	160
Shoreditch.—14, 15, 23, and 24, Harriet-sq., u.t. 39 yrs., g.r. 16*l.* 16*s.*, w.r. 132*l.*	350
Southgate.—4, 5, and 6, Conisbee cottages, f., w.r. 49*l.*	500

By ANDREWS & HALL.

Peckham.—52, Rye-la. (s.), f., y.r. 110*l.*	2,000

By FOSTER & CRANFIELD.

Wood Green.—Homecroft-rd, f.g. rents 22*l.* 10*s.* reversion in 91 yrs.	480

By FREEMANTLE & FOX.

City.—135, Bishopsgate-st. Without (s.), beneficial lease for 19½ yrs., at 125*l.*	500

By MIVART & CO.

Edgware-road.—121 (s.), u.t. 10½ yrs., g.r. 7*l.* 7*s.*, y.r. 135*l.*	935

By TRAFFORD & CARTER.

Stratford.—23, Idmiston-rd., f., w.r. 31*l.*	240
Peckham.—7, Oglander-rd., u.t. 66 yrs., g.r. 5*l.*, y.r. 26*l.*	215
Leytonstone.—28 to 34 (even), u.t. 73 yrs., g.r. 16*l.*, w.r. 104*l.*	500
Mile End.—9 to 25 (odd), Faith-st., u.t. 70 yrs., g.r. 40*l.* 10*s.*, w.r. 128*l.*	150
Poplar.—15 to 22, Sophia-st., u.t. 86 yrs., g.r. 36*l.*, w.r. 156*l.*	150

By T. B. WESTACOTT.

Holloway.—3, Carlton-rd., u.t. 43 yrs., g.r. 10*l.*, p.	£225
Kentish Town.—100, Carlton-rd., u.t. 41 yrs., g.r. 6*l.*, p.	240

By DOUGLAS YOUNG & CO.

Merton.—1 and 7 to 17 (odd), Winifred-rd., u.t. 95 yrs. g.r. 36*l.* 15*s.*, gross rental 257*l.* 8*s.*...	1,360
1 to 15 (odd), Mina-rd., u.t. 95 yrs., g.r. 42*l.*, gross rental 249*l.* 12*s.*	1,240
Tooting.—Devonshire-rd., maisonette, u.t. 75½ yrs., g.r. 8*l.*, y.r. 40*l.*	180
Brixton.—Jelf-rd., f.g. rents 17*l.*, reversion in 69 yrs.	410

By WYATT & Son (at Chichester).

Earnley, Sussex.—Mill Farm, 39 a. 1 r. 38 p., f. and l.	1,925
Shripney, Sussex.—Copyhold cottage and 16 p.	120
Aldingbourne, Sussex.—Copyhold cottage and 27 p.	180

By WINTERTON & SONS (at Alrewas).

Orgreave, Staffs.—The Laurels and 1 r. 34 p., f.	240
Fradley, Staffs.—Cottage and 4 a. 0 r. 5 p., f. and c.	223

July 8.—By H. J. BLISS & SONS.

Barkingside.—Victoria-rd., Victoria House and Providence Cottage, f., y.r. 35*l.*	250
Bethnal Green.—24 and 26, Sidney-st., f., w.r. 41*l.* 12*s.*	235
Hackney.—Brunswick-st., Abbotts-mews, u.t. 43 yrs., g.r. 13*l.* 5*s.*, y.r. 99*l.*, with reversion	540

Digitized by Google

By BOWDITCH & GRANT.
Croydon.—30, Sydenham-rd., f., y.r. 40*l.* £390

NEWBON, SHEPHARD, & EDWARDS.
Barnsbury.—36 and 37. Arundel-sq., f., p. 910
Shepherd's Bush.—47, Sulgrave-rd., u.t. 65¾ yrs., g.r. 6*l.*, w.r. 44*l.* 210

By GEO. PEARCE & SONS.
Caledonian-road.—32, Freeling-st., u.t. 35 yrs., g.r. 6*l.*, w.r. 46*l.* 16s. 105

By STIMSON & SONS.
Peckham.—44, 46, and 72, Hill-st., f., gross rental 131*l.* 14s. 1,190
Old Kent-road.—1 to 27 (odd), Coburg-rd., u.t. 48¼ yrs., g.r. 55*l.*, y.r. 420*l.* 2,780
Nos. 337, 339, 341, and 347 (s.), Old Kent-rd., u.t. 51 yrs., g.r. 60*l.*, y.r. 280*l.* 2,500
Wilworth.—34, Boyson-rd., u.t. 41 yrs., g.r. 3*l.* 6s., p. 260
Dulwich.—251, Underhill-rd., f., e.r. 30*l.* 365
South Kensington, — 6, Clareville-gr., and stabling, u.t. 10 yrs., g.r. 6*l.* 18s., y.r. 75*l.* .. 350
Notting Hill.—34, Clarendon-gdns., u.t. 39½ yrs., g.r. 9*l.* 10s. y.r. 50*l.* 295
Pimlico.—22, Ponsonby-pl., u.t. 18 yrs., g.r. 6*l.*, gross rental 106*l.* 200
Stockwell.—22, Rumsey-rd., u.t. 72 yrs., g.r. 8*l.* 5s., e.r. 44*l.* 240
Ealing.—33, Alacross-rd., f., e.r. 38*l.* 370

By VENTOM, BULL, & COOPER (at Stowmarket).
Stowmarket, Suffolk.—10 and 12, Violet-hill, f., y.r. 34*l.* 450
18 to 38 (even), Lower Violet-hill, f., y.r. 34*l.* .. 435

By HENRY SPENCER & SONS (at Retford).
Babworth, Notts.—Morton and Beechwood Farms, 686 a. 3 r. 11 p., f. 10,500

July 9.—By VENTOM, BULL, & COOPER.
Bromley, Kent.—Nelson-rd., f.g. rents 40*l.*, reversion in 71 yrs. 860
Holmesdale-rd., f g. rents 30*l.*, reversion in 71 yrs. 700
Erith, Kent.—Manor-rd., f.g. rents 37*l.* 3s., reversion in 55 yrs. 820
Crescent-rd., f.g. rents 17*l.* 7s. 6d., reversions in 53 and 62 yrs. 380
Pier-rd., f.g. rents 18*l.* 9s. 6d., reversions in 36 to 40 yrs. 500
Brook-st., f.g. rents 19*l.* 9s., reversions in 52 to 59 yrs. 435
Shepherd's Bush.—Devonport-rd., f.g. rents 54*l.*, reversion in 65 yrs. 1,245

By EDWARD WOOD.
Walthamstow.—14, Willow-walk (s.), f., e.r. 26*l.* 200
Kilburn.—61, Hartland-rd., u.t. 82 yrs., g.r. 6*l.*, w.r. 49*l.* 320

By EDWARD MILLARD & CO.
Paddington.—Morshead-mansions, l.g.r. 30*l.*, u.t. 87¼ yrs., g.r. 4*l.* 480

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PUBLISHER'S NOTICES.

Nat. Tel., 6112 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME XCVI. (January to June, 1909) was given as a supplement with the issue of July 10th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE NINETY-SIXTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, will be ready on the 20th inst.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

**** Stamps *must not* be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office, 4, Catherine Street, Strand, W.C., free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

PRICES CURRENT OF MATERIALS.

**** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 4 6	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000, at rly. depôt.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	... 4 15 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 0 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
Battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak logs—		
Large, per ft. cube	0 3 0	... 0 3 9
Small " "	0 2 6	... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¾ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	... 0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak per load	17 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	... 0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	... 0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	... 0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	... 0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	... 0 13 6
1 in. by 7 in. " "	0 14 0	... 0 18 0
¾ in. by 7 in. white " "	0 10 0	... 0 11 6
1 in. by 7 in. " "	0 12 9	... 0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

Digitized by Google

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.					
	£	s.	d.		£	s. d.
Rolled Steel Joists, ordinary sections	7	0	0	...	7	10 0
Compound Girders, ordinary sections	9	0	0	...	10	0 0
Steel Compound Stanchions	11	0	0	...	12	0 0
Angles, Tees, and Channels, ordinary sections	9	0	0	...	10	0 0
Flitch Plates	9	0	0	...	9	10 0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	...	8	10 0

METALS.

	Per ton, in London.					
	£	s.	d.		£	s. d.
IRON—						
Common Bars	8	10	0	...	9	0 0
Staffordshire Crown Bars, good merchant quality	8	15	0	...	9	5 0
Staffordshire "Marked Bars"	10	10	0	...		—
Mild Steel Bars	8	15	0	...	9	5 0
Hoop Iron, basis price	9	5	0	...	9	10 0
" " Galvanised	17	0	0	...		—
("And upwards, according to size and gauge.)						
Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0	...		—
" " 24 g.	10	15	0	...		—
" " 26 g.	12	5	0	...		—
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	...		—
Ordinary sizes to 22 g. and 24 g.	15	10	0	...		—
" " 26 g.	16	10	0	...		—
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0	...		—
" " 22 g. and 24 g.	18	10	0	...		—
" " 26 g.	20	0	0	...		—
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	...		—
" " 22 g. and 24 g.	14	15	0	...		—
" " 26 g.	16	5	0	...		—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	...		—
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	...		—
" " " 26 g.	15	0	0	...		—
Cut Nails, 3 in. to 6 in. (Under 3 in., usual trade extras.)	10	10	0	...	11	0 0

LEAD, &c.

	Per ton, in London.					
	£	s.	d.		£	s. d.
LEAD—Sheet, English, 3lb. and up.	16	7	6	...		—
Pipe in coils	16	17	6	...		—
Soil pipe	18	17	6	...		—
Compo pipe	19	17	6	...		—
ZINC—Sheet—						
Vielle Montagne	26	10	0	...		—
Silesian	26	5	0	...		—
COPPER—						
Strong sheet per lb.	0	1	0	...		—
Thin "	0	1	1	...		—
Copper nails "	0	0	10	...		—
Copper wire "	0	0	10	...		—
BRASS—						
Strong Sheet "	0	0	11	...		—
Thin "	0	1	0	...		—
TIN—English Ingots "	0	1	5	...		—
SOLDER—Plumbers' "	0	0	7	...		—
Tinmen's "	0	0	9½	...		—
Blowpipe "	0	1	0	...		—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅜ "	2¾d. " "
½ "	2¾d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£	s.	d2
Raw Linseed Oil in pipes	per gallon	0	2	3
" " " in barrels	"	0	2	6
" " " in drums	"	0	2	6
Boiled " in barrels	"	0	2	9
" " " in drums	"	0	2	9
Turpentine in barrels	"	0	2	1
" in drums	"	0	2	10
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ABERYSTWYTH.—For painting Theological College. Mr. G. Dickens-Lewis, architect and surveyor, Aberystwyth:—

E. Edwards	£62 10	D. Watkins	£54 0
P. B. Loveday	62 0	Jones & Richards*	45 10

[All of Aberystwyth.]

BRIGHTON.—For erecting a residence, at the Workhouse, Elm-grove, for the Assistant Medical Officer, for the Guardians. Messrs. Hawker & Clover, architects, 9, North-street, Brighton:—

G. R. Lockyer	£557 5	Hockley & Co.	£446 18
W. Botting & Son	547 8	H. J. Penfold	439 0
W. & T. Garrett, Ltd.	496 13	A. Peskett & Co.	409 10
W. Olliver	495 10	J. & W. Simmonds	406 0
Bostel Bros., Ltd.	492 0	J. Mantell	401 0
W. Oram	482 16	Saunders Bros., Brighton*	389 10
C. Duke	471 10		

CARDIFF.—For proposed new warehouse Severn-road, Canton, Cardiff, for Messrs. George Wensley & Sons, removal contractors. Mr. Ivor Jones, A.R.I.B.A., architect and surveyor, 18, St. Mary-street, Cardiff. Quantities by the architect:—

W. E. James	£712 0	W. Symonds & Son	£598 0
E. R. Evans & Bros.	639 0	D. W. Davies & Howell	596 0
Griffiths & Son	622 10	F. Waterman*	594 0

CASTLEFORD.—For erecting a skating-rink. Mr. Abm. Sharp, architect, Pearl Assurance Buildings, 19, Market-street, Bradford:—

Joiner: A. Parker, Winahill	£1,387 0 0
Masons: Wilks & Ingham, Shipley	800 0 0
Plumber: S. E. Jackson, Bradford	168 0 0
Steelwork: H. Barrett & Sons, Bradford	160 15 0
Painter: E. Forster, Castleford	116 9 0
Plasterers: J. W. Spencer & Son, Castleford	27 13 6

CHARLTON HORETHORNE.—For alterations and additions to school, for School Managers of Charlton Horethorne. Messrs. C. & C. B. Benson, Architects, Yeovil:—

C. Hann	£233 0 0	Moore & Son, Cold Harbour, Sherborne*	£178
P. Tont	219 11 5		
Guppy & Son	210 0 0		

CHISWICK.—For High-road wood paving (special contract, including maintenance) and for painting, etc., at schools, for Chiswick District Council. Mr. Edward Willis, A.M.Inst.C.E., F.S.I., A.M.I.Mech.E., Engineer's Department, Town Hall, Chiswick:—

Improved Wood Pavement Co.*

Painting, etc., at Schools.

—	Hogarth Girls' School.	Belmont School.	Total.
	£ s. d.	£ s. d.	£ s. d.
W. Blackburn	345 17 6	160 1 0	525 18 6
J. W. Martin	303 10 0	190 12 0	494 2 6
T. Millman*	215 15 0	162 5 0	378 0 0
O. J. Plumridge	362 10 0	211 0 6	573 10 6

DORCHESTER.—For extension of the high level sewer from Dawer's-road to St. Martin's-road, for the Town Council. Mr. Percival T. Harrison, A.M.Inst.C.E., Borough Engineer:—

C. E. Slade, Dorchester £232 0 0

EAST HAM.—For external repairs, painting, and sundry works, at the Shaftesbury-road school, and for cleansing, etc., of latrines at nineteen schools, for the Education Committee. Mr. R. L. Curtis, architect, 11 and 12, Finsbury-square, E.C.:—

J. Stokes & Sons, High-street, East Ham* .. £85

FELLING.—For concreting footpaths, for the Urban District Council. Mr. C. W. Hall, Surveyor, Felling:—

J. McGowan, Felling* £165

GRANGE-OVER-SANDS.—Accepted tenders for New Westmorland Home for Advanced Consumption, built at Meathop, Grange-over-Sands. Mr. John Hutton, M.R.S.I., architect, Kendal. Quantities by architect:—

Walling, Mason, Slating, Carpenter, and Joiner: W. Till, Grange
Plastering: Woodburn & Storey, Kendal
Plumbing, Painting, and Glazing: B. Ward, Grange £5,000 0 0

[The above tender includes electric lighting, sewage disposal works, road-making, etc.]

HAILSHAM.—For private street works, Gordon-road and Windsor-road, for the Rural District Council. Mr. J. Huxley, C.E., District Surveyor, 17, London-road, Hailsham:—

J. Vine	£577 2 6	S. Carey, Haddocks Hill House, Bexhill*	£515 4 4
T. Rich	544 7 0		

HARROGATE.—For extension of sewage works, for the Corporation. Messrs. E. W. Dixon & Ritchie, engineers, 3, East-parade, Leeds, and at Harrogate:—

A. Graham & Sons, Longroyd Bridge, Huddersfield* £3,767 11 2

KENDAL.—For alterations and enlargement of Burnside School, near Kendal, for the Managers. Mr. J. Hutton, architect, Kendal. Quantities by architect:—

Mason and Slater: H. Joinson, Staveley*	£175 0 0
Joiner: G. F. Martindale, Kendal*	227 0 0
Plumbers: W. Jackson & Co., Kendal*	195 15 6
Painter: J. Wells, Kendal*	42 10 0
Plasterers: Woodburn & Storey, Kendal*	68 10 0
Swivel Partitions: J. Stones, Ulverston*	52 0 0

LANGLEY.—For erecting a school building, for Oldbury Urban District Council Education Committee. Mr. F. J. Gill, architect, Smethwick:—

G. H. Marshall, West Smethwick* £12,237

LEEK (Staffs.).—For providing and laying a maple floor, etc., in the Concert Hall at the Town Hall, Market-street, for the Urban District Council. Mr. W. E. Beacham, C.E., Surveyor, Town Hall, Leek:—

J. Nicholls	£95 0 0	G. Hine	£63 10 6
J. Heath & Sons	66 8 0	T. Grace, Leek‡	59 0 0

‡ Recommended for acceptance.

LIVERSEDGE.—For kerbing, etc., of Norristhorpe-lane, from Milton-row to Lodge-lane, for the Urban District Council. Mr. F. Langley, Engineer and Surveyor, Council Offices, Liversedge:—

A. Drake & Sons	£498 12 7
J. Horkin	477 6 9
J. Brooke	453 11 11
D. Brown, Cleckheaton*	450 14 6

[Surveyor's estimate, £480.]

LLANWRTYD WELLS.—For erecting a Baptist chapel, for the Trustees. Mr. E. Peters Morris, architect, Llandrindod Wells:—

W. Williams	£2,699	R. E. Davies	£2,492
R. Page	2,527	Turford & Southward, Ludlow*	2,256
J. G. Lloyd	2,500		

LOFTUS.—For erecting stone boundary wall and levelling ground and forming footpaths, for the Urban District Council:—

Tenders for Wall.	Per sq. yd. £	s.	d.
T. Seymour	1	7	0
R. Harland		16	0
G. Edwards		14	0
T. Simpson		8	6
W. Seymour, Loftus-in-Cleveland*		8	6
Scoriæ Brick Channel.	Per lin. yd. s.		d.
T. Seymour		3	0
T. Simpson		2	3
G. Edwards		2	0
W. Seymour, Loftus*		1	6
R. Harland		—	
Levelling, etc.	Per sq. yd. s.		d.
M. O'Doherty		1	8
W. A. Jones			7½
W. Paul			6
F. Hutchinson			5
G. Danby, Yarm-on-Tees*			3

LONDON.—Painting of electric light standards for the Fulham Borough Council:—

Swan Bros.	£404 0 0	H. Cooper	£179 11 2
Harwood & Co.	268 12 6	G. R. Alldred, 41, Waldemar-av.*	131 13 6
T. Lester	213 0 0		

LONDON.—For manual training centre, Roman-road, Bow and Bromley, for the London County Council:—

Marchant & Hirst	£1,796 0 0
Brand, Pettit, & Co.	1,584 0 0
J. Willmott & Sons	1,556 0 0
A. E. Symes	1,414 0 0
C. P. Roberts & Co.	1,357 0 0
J. Chessum & Sons	1,353 8 9
Stevens & Sons	1,315 0 0
J. & C. Bowyer, Ltd., Upper Norwood*	1,296 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £1,360.]

LONDON.—For erection of cottages on section B, Norbury estate, for the London County Council:—

F. & H. F. Higgs	£27,013	G. H. Carter	£22,399
J. Smith & Sons, Ltd.	25,000	C. Wall, Ltd.	21,857
W. Akers & Co., Ltd.	23,806	Gathercole Bros.	21,251
E. J. Saunders	23,670	Rowley Bros.	21,141
		F. & T. Thorne, Isle of Dogs*	20,787

[The Architect's estimate, comparable with the tenders, is £21,181.]

LONDON.—For enlargement of conveniences, London Fields, for the London County Council:—

Marchant & Hirst	£285 0	F. Bull	£217
Parrott & Isom	253 0	Newell & Lusty, 24 and 26, Wilson-street, Poplar, E.*	£214
Vigor & Co.	226 15		
Griggs & Son	219 0		

[The estimate, comparable with the tenders, is £210.]

LONDON.—For additional conveniences for men, Springfield-park, for the London County Council:—

R. A. Lowe & Co.	£252 0	J. Barker & Co., Ltd, 83, Kensington High-street, W.*	£178 10
Marchant & Hirst	217 0		
J. & C. Boyer, Ltd.	204 0		
J. Grover & Son	194 0		

[The estimate, comparable with the tender, is £190.]

LUTON.—For erecting a new public library at the junction of George-street and Williamson-street, for the Borough Council. Mr. S. F. L. Fox, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Luton:—

T. & E. Neville, Luton £8,873

LYNTON.—For erecting Wesleyan church and school. Messrs. Latrobe & Weston, F.R.I.B.A., 44, Corn-street, Bristol:—

Yandle & Sons	£3,057 15 10
Stanbury	2,500 0 0
B. Jones	2,176 0 0
R. Pickett	2,023 10 6
H. Sillifant	2,012 0 0
Bovey & Son, Torquay*	2,000 0 0

Digitized by Google

MALVERN.—For new house at Malvern, for Miss E. Brown. Mr. T. W. Holds, architect, Great Malvern:—
T. Broad, Ltd.* £3,306 0 0

MORTLAKE.—For paving the carriageways of the Upper Richmond-road and the unpaved portion of the High-street, for Barnes Urban District Council. Mr. G. Bruce Tomes, A.M.Inst.C.E., Council House, High-street, Mortlake, S.W.:—

P. Smith	£15,885 13 4
Pethick Bros., Ltd.	15,851 18 4
E. & E. Iles	15,620 10 0
Complete Wood Flooring Co.	15,395 6 0
Homer & Co.	14,800 11 8
Jarman & Co.	13,400 0 0
W. Griffiths & Co., Ltd.	12,354 13 10
G. Wimbey & Co.	11,908 18 6
Acme Flooring and Paving Co.	11,602 18 8
J. Mowlem & Co.	11,564 0 0
Improved Wood Pavement Co., Ltd., 46, Queen Victoria-street, E.C.*	11,221 10 0
T. Cook Starkey	11,114 7 6

NAFFERTON.—For well and borehole (Contract A, waterworks), for Driffield Rural District Council. Messrs. Fairbank & Son, engineers, Lendal-chambers, York:—
W. Crossland, 144, Willington-road, Rhyl, N.W. £461 9 4

NORTH REDDISH (Stockport).—For erecting an infants' school in Lewis-road, North Reddish, for the Education Committee. Messrs. Cheers & Smith, architects, Blackburn and London. Quantities by architects:—
J. Briggs, Heaton Norris, Stockport* £4,122

OLDBURY.—For erecting a school at Rounds Green, for the Urban District Council Education Committee. Mr. A. Long, Architect, West Bromwich:—
T. Johnson, Great Brook-street, Birmingham £9,829

SOUTH MOOR AND OXHILL.—For private street improvement works, for the Urban District Council. Mr. J. Routledge, Surveyor, Council Offices, Stanley:—

	South Moor Streets. £ s. d.	Oxhill Streets. £ s. d.
T. Dorin	1,660 3 0	403 19 8
G. A. Reescell	1,484 14 5	418 13 2
R. C. Birtley, Stanley	1,087 15 4	*261 12 1
J. McLaren	1,091 2 11	268 18 4
G. Simpson	1,211 19 1	292 14 10
J. Shannon	891 10 3½	210 15 7½
J. Crombie	1,498 2 1	363 15 8
J. Rule	1,429 1 2	341 2 0
Johnson & Strong, Stanley	*1,035 12 8	272 14 6
J. W. Lee & Sons	* ——	396 16 6½

STOKE-UNDER-HAM.—For heating apparatus at the New Wesleyan Chapel and School. Messrs. La Trobe & Weston, architects, 44, Corn-street, Bristol:—

W. H. Chant	£74 10	Saunders	£59 17
Green	74 0	Skinner, Board, & Co.	57 0
Haden & Sons	70 0	Weech & Sons	55 10
W. Sparrow, Ltd.	67 10	A. H. Skinner & Co., Bristol*	54 0
Crispin & Sons	64 10		
Yandle & Sons	60 0		

WADSWORTH, TODMORDEN. — For erecting a public urinal near to Midgehole, for the Rural District Council of Todmorden. Mr. J. Suthers, Surveyor, Union Offices, Todmorden:—
C. Wade, Luddendenfoot £38 0 0

WEST HAM.—Accepted for cleansing, repairs, and painting of schools, for the Education Committee. Mr. W. Jacques, A.R.I.B.A., Architect to the Education Committee, 2, Fen-court, Fenchurch-street, E.C.:—

Abbey School: C. J. Kemp	£469 10 0
Channelsea School: A. Webb	249 0 0
Custom House School: Burns & Co.	160 0 0
Credon-road School: W. Chappell	295 0 0
Drew-road School: L. Kazak	320 0 0
Napier-road School: J. S. Fenn	438 0 0
St. Andrew's School: J. Noakes	112 10 0
St. John's School: Dyke	69 0 0
Star-lane School: Peoman & Co.	531 10 0
South Hallsville School: L. Kazak	305 0 0
Water-lane School: Athey & Co.	69 15 0
Education Offices: A. Webb	149 0 0

WHITEHAVEN.—For the erection and completion of public elementary schools for 712 children, caretaker's residence, etc, in Irish-street, Whitehaven. Messrs. Oliver & Dodgshun, architects, Carlisle:—

Builder: E. Moorhouse, Whitehaven*	£10 303 4 6
Slater: E. Burrow, Workington*	
Tar Paving: Northern Asphalt and Roofing Co., Leeds*	
Carpenter and Joiner: J. H. Reed & Sons, Carlisle*	
Plumber and Glazier: W. Strathern, Whitehaven*	
Reinforced Concrete and Plasterer and Concretor: R. M. Ormerod & Son, Carlisle*	
Painter: E. McConn, Whitehaven*	

WHITEHAVEN.—For alterations and additions to the old Infirmary at the Workhouse, for the Guardians. Mr. G. Boyd, C.E., 33, Queen-street, Whitehaven:—
A. & T. H. Anderson, Whitehaven* £435

WOODMANCOTE (near Cheltenham).—For a branch sewer in Gamble-lane, for Winchcombe Rural District Council. Mr. G. H. Philloth, Engineer and Surveyor, 13, Promenade, Cheltenham:—
Mr. S. B. Dix, Cheltenham* £71

WRENBURY (near Nantwich).—For interior alterations to church, for the Wrenbury Church Council. Mr. C. Russell Hall, architect, Congleton. Quantities by architect:—

R. Bridgeman & Sons	£876 10 9	E. & A. Frith	£746 19 0
Greenhalgh & Co.	843 0 0	H. Smith	737 10 0
T. Kimberley	828 0 0	Cox & Vaughan	686 0 0
S. Manley	823 7 3	F. Matthews, Nantwich*	649 10 0
Bennett Bros.	750 0 0		

Heating.

G. T. Wells	£227 0 0	R. Alger & Sons	£171 16 2
T. Kimberley	191 0 0	B. Harlow & Son, Macclesfield*	152 19 8
R. Bridgeman & Sons	179 15 1	D. Lowe & Son	152 17 0
W. H. Smith & Co.	178 1 6		

YORK.—For building conveniences at Mount-vale and Albemarle-road, for the Corporation. Mr. F. W. Spurr, City Engineer, Guildhall, York:—

For Mount-vale Conveniences.
G. Turner, 3, St. Nicholas-terrace, Lawrence-street, York* £197 15 3

For Albemarle-road Conveniences.
T. Belt, 5, Swinegate, York* £85 11 0

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
LITHOGRAPHERS,
Employ a large and efficient Staff especially for Bills of Quantities, &c.
4 & 5, East Harding-st., Fetter-lane, E.C.

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone Nos. 511 and 831 Deptford.
Registered Trade Mark.
Polonceau Asphalte.
PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE,
WHITE SILICA PAVING.
SEYSSEL ASPHALTE (*Direct from the Mines*).

JOHN BOLDING & SONS Ltd.
MANUFACTURERS OF
WATER CLOSETS, BATHS, LAVATORIES, Etc.
IRON AND BRASS FOUNDERS.
MARBLE and SLATE MERCHANTS and MASONS.
EXTENSIVE SHOWROOMS. INSPECTION INVITED.
Just Published New Illustrated Catalogue.
FREE BY POST ON APPLICATION.
GROSVENOR WORKS, DAVIES STREET, LONDON, W.

EWART'S
Cures in 19 cases out of 20.
"EMPRESS"
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
Established 1834.
Telephone: 751 North.
SMOKE-CURE

Digitized by Google

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

Mediæval Architecture. By A. KINGSLEY PORTER. (New York: The Baker & Taylor Company. London: B. T. Batsford. 1909. 2 vols. pp. 981. 3*l.* 3s.)

THIS is a large and costly book, but we can hardly call it a good one. The author informs us in the preface that he has compiled for each chapter a list of monuments, in which he believes that all monuments of importance are included. Apparently, for Mr. Porter, England and English mediæval architecture are non-existent. Not a single reference is made to an English cathedral nor a single illustration from one given. In the author's lists of mediæval monuments Westminster, Canterbury, Peterborough, Lincoln, York, Salisbury, do not exist. Great enthusiasm is shown over the mediæval sculpture at Chartres; the fact that Wells contains, in its Resurrection series, the most remarkable example of mediæval sculpture in existence, is nothing to him. Nor is it worth his notice that one of the most beautiful phases of mediæval architecture, that known as Early English, is only found in this country and has no counterpart in France, or that the phase of the style which produced King's College Chapel and Henry VII.'s Chapel is also peculiar to England, and is the result of the development of Gothic in this country. The fact also that English Gothic gave the grand feature of the central tower, which it is the fault of French Gothic to want, is not worth Mr. Porter's notice in any consideration of the development of Gothic architecture. Central towers are seldom found in France, consequently the feature is not worth attention. Some specimens of French Gothic mouldings are given, but the author apparently knows nothing of English mouldings, which are both far more varied and far finer than French mouldings—one of the few points in which, in fact, French Gothic is weak. Examples of French decorative carving, in caps, etc., are given, but nothing equal to what is to be found at Lincoln and Southwell.

The tendency of American writers on architecture to be-little and sneer at everything English is what we have frequently noticed; but the calm stolidity which could profess to write a history of mediæval architecture (there is no limitation implied on the title-page) in which the existence of such a composition as Peterborough front, about the finest mediæval conception of a west front in the world, is entirely ignored, is something beyond what we have met with before, even from American writers. It was an American of genius—Motley, the historian—who left on record his impression of Salisbury as the most beautiful thing he had seen in Gothic architecture; but American architects or writers on architecture (whether Mr. Porter is an architect or not we are not aware) evidently know better.

We should doubt, however, if this is a professional book. The diagrams of vault and dome are drawn in a clumsy and amateurish manner, and the description of them is in keeping with the diagrams. Among these he includes a diagram of a square compartment vaulted by arching over each side towards the centre—in other words, a square dome, and tells us that this is called "the cloistered vault." It may be called so in America; we know nothing of such a title; and at all events it has nothing to do with the history or development of Gothic vaulting. There is a good deal of somewhat loose writing on political and social history, the relation of which to architectural development is not very direct.

The author has adopted the large method of beginning at Greek architecture and tracing the course of architecture through Roman to Romanesque and Gothic. It seems rather an unnecessary expansion of the subject; mediæval architecture touches on Roman; it can hardly be said to touch on Greek. The Romans, according to the author, did not invent the Composite order by uniting the Corinthian and Ionic; "of such an enormity not even the Romans seem to have been capable, and the Composite order, though of late introduction, undoubtedly is derived from Greek prototypes." There is not the slightest proof of anything of the kind, and the feeling and style of the Composite capital are much more in keeping with Roman than with Greek taste. He then proceeds to tell us that "we know now that the Corinthian order was evolved from the Ionic, by the substitution of a row of acanthus leaves for the anthemion necking." We know nothing of the kind; if it were true, we have no means of knowing it; it is a mere assumption, and a very improbable one. The far greater probability is that the Corinthian capital was a Greek improvement on the spreading capital of the Egyptians, in which there is somewhat the same arrangement of leafage, though in a much flatter and more timid manner.

In adopting the view that the transept, which originated in the early Christian basilicas, arose from utilitarian causes and not from any symbolism, we believe he is right. It is not certain, however, that in the fully-developed mediæval period a symbolism was not attached to it, as representing the cross, though it did not originate in that idea. The mediæval mind was steeped in symbolism.

We can hardly accept the explanation given of the large wall-shafts at Jumiéges, and in later Norman buildings, in every alternate bay, viz.: that the builders of Jumiéges adopted them from the Lombard churches, where they carried transverse arches, merely as a means of dividing up the walls without the idea of any farther use for them in the design. The idea that there was an intention of vaulting the interior, that these shafts were to lead up to the vaulting, and that the task was evaded, when the builders came to the roof, on account of timidity and inexperience, is a much more natural and probable one. The whole of the argument gone into by the author, in regard to early vaulting, should, to have been complete, have been illustrated step by step with diagrams made *ad hoc*. As it is, there seems to have been nothing further attempted than to interleave the pages with drawings reproduced from Ruprich-Robert's "L'Architecture Normande," which have no bearing whatever on the subject. The author's determination to ignore everything but French work has led him to describe the introduction of the pointed arch as at first purely ornamental:—

> "The earliest extant instance of its use is, I believe, the Church of Genets, which was consecrated in 1157. It here occurs in connexion with a groin vault, and is not used for any structural reasons. After this the pointed arch occurred with increasing frequency, but was always used in a purely fanciful and decorative manner, as in the façades of Manézlis and Pontorson."

If the author had been acquainted with some of the remains of early Cistercian abbeys in England, careful illustrations of which have been published, he could have found at Fountains and Kirkstall instances of large nave arches being pointed, obviously to guard against sinking at the crown, while all the smaller openings and decorative arches in the higher portions of the same building retained the circular form. It may be doubted, however, whether the author would have been able to see this, since he cannot see it in the illustrations in his own book. The façade of Pontorson, to which he refers, shows exactly the same thing: the large structural arch, which bridges the recessed porch and carries the main wall above, is slightly pointed, while all the small windows and decorative wall-arches above are round; so that the very illustration to which he refers as an example completely contradicts his own statement!

There are a number of good illustrations, chiefly from photographs; and the lists of French churches are useful, as they include a good many out-of-the-way places not very well known by repute. Beyond that, we do not think there is anything new to be obtained from the book, either in the way of information or critical analysis. In short, this is a large, pretentious, amateurish book, with an assumption of knowledge about it which is not borne out by its contents.

A History of British Watercolour Painting. By H. M. CUNDALL, F.S.A. (London: John Murray. 1908. 151 pages. 21s.)

THE word "British" might almost have been omitted, for the history of British watercolour painting is practically the history of watercolour painting, so much is this a specially English branch of art, at all events in its higher and more complete development; though it would seem that the practice of finishing sketches, first outlined with a reed pen, with a light local tinting in watercolour, was introduced into England by Hollar. This was the time of what the author appropriately calls "topographical drawing," in which the object was not so much to produce a picture, in the artistic sense, as a representation or record of a particular place. During the XVIIIth century it was a fashion for owners of country seats to have engravings made of their mansions, and this created a demand for topographical draughtsmen to assist in the work. "The architectural portions of their drawings were carefully outlined with a pen, and local colours were frequently washed in afterwards with a slight tint." It is curious to notice that one of the most accomplished of modern watercolour artists, who frequently makes towns or buildings the subject of his pictures, seems to have partially adopted the old practice of lining in the buildings with a pen, though of course the subsequent colour treatment is very different from the mechanical tinting for local colour which was all that the artists of the topographical period aspired to.

The early watercolour artists who aimed at something higher than topographical work were much hampered by the limited number of pigments available, and the difficulty of finding paper which would absorb the colour and would bear washing; paper had to be manufactured specially for watercolour work before success could be obtained. It seems that the artists of this period often experimented in the making of their own colours, from whatever material seemed to offer a chance of producing an effect; see a curious letter of Paul Sandby's quoted on page 30. Sandby and his

Digitized by Google

contemporaries followed what seems now the curiously naïve system of putting in all the shadows in a composition first, in monochrome—generally Indian ink, and then laying the transparent colouring washes over that. There is a question raised as to whether Girtin did not commence in the same manner; the evidence seems conflicting, but our impression would be that, in his earliest work at all events, he did follow the old method, though he may have very soon emancipated himself under the influence of his friend Turner. Girtin died at the early age of twenty-seven; had he lived he might probably have developed into a painter of watercolour on the same lines as Turner, though perhaps not with the same genius. Turner's earliest watercolours are not unlike Girtin's; the contrast between these and the works of his latest period forms one of the most extraordinary instances of artistic development in one lifetime that the history of art can show. The author suggests that it is probable that the then custom of the Royal Academy of hanging oil-paintings and tinted drawings in juxtaposition first set Girtin and Turner on giving up the grey underpainting and adopting a method which would give more brilliancy and force to their work. It need hardly be observed that the system of putting in the shadows in monochrome first entirely ignores the fact that shadow has in many cases its own positive and distinctive colour, and cannot be obtained in its true effect by mere negation or obscuring of colour by a dark underground.

The whole history of the two watercolour exhibitions, the "Society" and the "Institute" is told at length, and a curious bit of history it is, containing the record of a great deal of jealousy and rivalry between the two bodies; though the "New Society," as it was at first called, repudiated (in words, at least) any desire to injure or rival the older Society. They maintained that the necessity of their formation arose from the great development of watercolour painting, and increase in the number of its practitioners, coupled with the "close borough" system of the Society of Watercolours, which allowed none but its own members to exhibit. The present name, "Institute of Painters in Watercolours," was adopted by the new Society after it had been so many years in existence that the word "New" became inappropriate. David Cox was an early member of the New Society, and was its President for a short time, though he afterwards (for what reason does not appear) joined the Old Society and remained faithful to it to the end of his days. It appears therefore, that the introduction of his portrait in one of the medallions on the present building of the Institute, which was complained of at the time, is quite justified.

A description given of William Hunt's method of execution, in his Still Life subjects more especially, is of some interest. He came to the conclusion that mere transparent colour was not powerful enough for the effect he wanted, but he did not mix his pigments with body colour, he painted *on* body colour, which was laid on the objects thick, and then left to harden. His method is described in a passage quoted from Mr. James Orrock:—

"He would, for example, roughly pencil out a group of plums or grapes, and thickly coat each one with Chinese white, which he would leave to harden. On this brilliant china-like ground he would put his colours, not in washes, but solid and sure, so as not to disturb the ground which he had prepared. By this process the utmost value for obtaining strength and brilliancy was secured, for the colours were made to 'bear out' and almost rival Nature herself."

The result seems to have justified the method, though it does not seem a very pure kind of watercolour art.

Mr. Cundall's book is essentially a history of facts rather than a critical analysis of watercolour painters and their productions; and so far as critical analysis is introduced it seems to us rather weak; at all events we certainly cannot agree with some of the opinions expressed. To say that Pinwell "in poetic imagination went far beyond Walker," of whom he was confessedly a follower, is what we should call an absurd dictum; Pinwell was an artist on a distinctly lower plane than Walker. Nor can we by any means see that "the charm of the paintings of Birket Foster lies in the poetic feeling with which he indued them"; we should say that poetic feeling was exactly the quality wanting in his works, nor has the author a word to say as to the meticulous finish and want of breadth in Birket Foster's manner of painting. The fact is, Foster was in watercolour just what Mr. Leader now is in oil-painting, a "popular" landscape-painter, and for much the same reason; he painted in a realistic manner and made no demand on the imagination or on the sense of style in the spectator; and as the majority of spectators have no sense of style, this is what pleases them. On the other hand, Thomas Collier is dismissed with the faint praise that his landscapes "are full of breezy atmospheric effects," which is rather an inadequate way to describe one of the finest watercolour artists of recent days. But this is a trifle compared with the fact that the name of Alfred Hunt, the greatest landscape-artist in watercolour since Turner, does not appear at all in the book! That Mr. Cundall was aware of his existence appears from the fact that his name is included in the alphabetical list of artists in the appendix, but he is apparently not thought worth any reference in the text of the book, or any illustration. What is the explanation of this? Some explanation is certainly called for.

As a history, however, the book is a useful one, and it is accompanied by a number of beautifully executed chromo-lithograph reproductions of the works of many of the artists named.

Nature and Ornament. I. Nature: The Raw Material of Design. By Lewis F. Day. (London: B. T. Batsford. 1908. Pp. 121. 5s.)

The present book is rather different in its character and aims from any of the other books on various aspects of ornament which we have had from its author. Mr. Day has always been a sound upholder of the abstract nature of ornament and of the futility of realism in the treatment of elements in ornament based on natural forms. Inasmuch, however, as Nature has afforded the original suggestion for some forms of ornament in her general principles of growth and occasionally in details, Mr. Day has in this book turned round to look at this side of the matter, and to consider nature as the raw material of ornament.

The whole bearing of the subject is very well and succinctly set out in the introductory chapter, headed "What Ornament Is." As the author says, it may be argued that, wide as ornament may stray from natural form, it is ultimately derived from it; but to make likeness to natural objects the test of beauty in ornament is to deny to man the very faculty of design.

"From first to last the witness of ornament is, that nature plays a secondary, sometimes an obscure part in ornamental design; that its beauty is in proportion to its fulfilment of conditions which have little or nothing to do with nature."

We think it might have been added that there are really two classes of ornament; that which is more or less distantly derived from natural forms, and that which has reference only to qualities of number, repetition, and proportion. The Greek fret, for instance, has no reference whatever to natural form; it is purely what we should call abstract ornament; so is the egg-and-tongue. The so-called Greek honeysuckle ornament is distantly connected with nature, but so conventionalised as to become almost abstract; and the Early English carved capital is nearly as much so; it represents not natural growth, but the principle of growth. But in so far as nature does enter into the genesis of ornament, the object of this book is to show the way in which ornament is derived from nature, and natural form reduced to ornament.

This is not done exactly as we should have expected, following on from the remarks in the introductory chapter. We rather expected to find examples of natural forms contrasted by examples of ornament based on them, by way of practical illustration of the relation between nature and ornament. It would have been a pretty large task, certainly, to carry on that system through the book, but we should have thought Mr. Day could have done it if anyone could. He has given us one page of Greek ornament from vases, showing the Greek treatment of leafage; some details of Gothic and of Egyptian and Assyrian ornament (the Gothic not quite of the best examples); a page of Indian branch and leaf ornament from a well-known example; and a page of "Italian Renaissance ornament, reminiscent of pea-pods"; this last comes opposite a page in which the pea-pod is sketched, among other vegetable forms, so that here we get what we wanted—the natural form on one page and its treatment in ornament on the opposite page; but this is the only instance; some further examples of the same kind would have been very interesting.

Apart from this, the book contains a large collection of excellent and careful drawings of plant forms, coupled with remarks on their growth and characteristics, and the kind of suggestion which may be obtained from them. These numerous drawings form a useful and valuable collection of plant illustration, and may lead readers to look a little more closely at the details and manner of plant growth than they have done before. There are also some really beautiful drawings of tree growth and tree scenery, by Miss Mary Newill, which, if they do not directly suggest ornament, at all events stimulate the imagination.

The philosophy of the subject is well summed up in a sentence in one of the latter pages:—

"What the designer has to do is, not to make a plant grow in a particular case as it did, or as it ever does, but as it might have done if he had had the direction of its growth. In ornament he has the entire direction of it; and if he can't make it grow aright, he has yet to learn his trade of designer."

Nothing could be better put.

How did the example of the Roman column (page 15) come to be drawn crooked?

Memorials of Old Middlesex. Edited by J. Tavenor-Perry. (London and Derby: Bemrose & Sons, Ltd. 1909. 15s.)

This volume forms one of the series of Memorials of the Counties of England, issued under the general editorship of the Rev. P. H. Ditchfield, M.A., F.S.A. It embraces several chapters contributed by Mr. Tavenor-Perry and other architects and writers of accredited repute, and is copiously illustrated with old and modern plans, views, and drawings. Amongst the special articles are "The Ancient Churches of Middlesex," the "Monastery and House of Syon," and "Parks and Historic Houses," by the Rev. Dr. Cox; "Fulham Palace and the Bishops of London," by Mr. S. W. Kershaw; "Harrow-on-the-Hill," by the Rev. W. Done Bushell; and "Chiswick House," by Mr. R. Phené Spiers, with excellent photographs by Mr. Walter L. Spiers. In the chapter "Holland House" Lord Ilchester bestows much pains—as indeed one should who owns so fine a place—upon its architectural history, ranging from the erection of Cope Castle, as finished in 1607 for Sir Walter Cope, with the additions "prfected pr me J T" [John Thorpe] planned before 1614, to the decorations by G. F. Watts and the recent extension on the west side and improvements of the interior and basement carried out by Mr. R. W. Edis. The youngest and one of the smallest of the English shires—the forest land of oak, beech, and hornbeam lying between the rivers Colne and Lea—was made a separate county from Essex by King Alfred in treaty with Gunthrum and the Danes, albeit with

Digitized by Google

subjection, after a kind, to London. What we may now call a Middlesex "territorial" battalion fought at Hastings under Ansgar, grandson of Tofig, sheriff, or portreeve, of London. Of the churches, that of Kingsbury is considered by Professor Baldwin Brown and other authorities to be of the præ-Conquest era; it has a plain, round-arched door, bricked up, of perhaps late Saxon or early Norman date; there is Norman work at Harrow, Bedfont, Harlington, Harmondsworth, etc.; Littleton is cited as the best example, on a small scale, of a First Pointed or Early English style. Roods, screens, and lofts are dealt with by Mr. Aymer Vallance. The Bishops of London's house stood nearly opposite—it did not "adjoin"—Thanet House, in Aldersgate-street. Whilst the scope of the volume excludes the cities of London and Westminster, Mr. Tavenor-Perry's chapters upon "The County," "The Pilgrimage of the Brent," and "The Story of Chelsea," with his charming drawings of riverside scenes, induce a wish that more were said about the eastern streams. We would like, too, to have found a few pages devoted to the old county maps, for they—notably the rare specimens of 1593 and 1605 by Norden—contain several place-names, strange in themselves and unfamiliar to the student, which call for rescue from oblivion and neglect.

The Concrete Institute: Transactions and Notes. Vol. I. Part 2. (London: The Concrete Institute. 1909.)

Apart from six pages of Notes relative to the private affairs of the Institute, this pamphlet merely records the proceedings of two ordinary meetings at which papers were read on "The Commercial Aspect of Reinforced Concrete," by Mr. L. Serraillier (of the Indented Steel Bar Company), and on "Concrete in Arched Bridge Construction," by Mr. E. P. Wells (the patentee of the Wells system). The former had the effect of eliciting some varied opinions concerning the present and future relations of commercial specialists with architects and engineers. At the present time, owing largely to increased competition, we fear there is a tendency on the part of reinforced concrete firms to cut down the proportion of steel in the designs prepared by them for professional clients. This very undesirable development fully justifies the suggestion by Mr. A. Alban H. Scott that the architect should specify the amount of reinforcement and the sizes of the members, thereby guarding against undue reduction of the factor of safety, and enabling him to obtain prices which for equal qualities of concrete are fairly comparable, and any of which ought to insure safety if the work is properly executed by a reliable contractor. The second paper, designated by Professor Henry Adams as "almost of monumental size," contains a large amount of practical information and covers far too much ground for detailed comment in this column.

Hennebique Ferro-Concrete: Theory and Practice. Part 1. (London: L. G. Mouchel & Partners. 1909.)

In this well-written and admirably produced book, the authors give a general description of the Hennebique system of ferro-concrete, and discuss the fundamental principles of Hennebique beam, column and pile design. The reader will find in its pages a large amount of useful and reliable information applying generally to reinforced concrete construction. Some of the points raised are clearly of controversial nature, particularly those concerning the relative merits of different methods of applying reinforcement to beams. Speaking in general terms, however, it may fairly be said that the authors have shown, step by step, that every detail in the design and construction of Hennebique beams, floors, columns, and piles is in strict accordance with theoretical and practical requirements. The text is illustrated by numerous photographic views and line drawings.

Petrol Air-Gas. By Henry O'Connor. (London: Crosby Lockwood & Son. 1909.)

This is, we believe, the only book which has been published in this country which deals exclusively with petrol air-gas and the various modern forms of apparatus used for its production. The popularity which petrol air-gas has recently acquired as a lighting and heating agent for isolated country houses has created a demand for a small book on the subject, and this little illustrated volume will be useful. Most of the plants used for making air-gas by mixing petrol vapour with air are described, but in some cases the descriptions are so meagre that they will not be of much value to readers unacquainted with the form of apparatus described. Useful information is given concerning the storage of petrol, and the final chapter consists of an extract from the Petroleum Act of 1871. When a new edition is published we hope that Mr. O'Connor will be able to give more explicit information with regard to the lighting and heating values per unit volume of the various grades of petrol air-gas.

The Encyclopædia of Practical Engineering. Vol. IX. (London: Virtue & Co.)

The subjects dealt with in the present instalment come between the alphabetical points SPE and TIM. Of those more particularly connected with building work are "splicing," with reference to ropes; "stageing," for cranes and various purposes; "steel structural work," a brief discussion of simple and built-up beams and columns; "testing machines," for cement and different materials; and "timber." The volume also contains numerous articles and paragraphs presenting much useful information in convenient form for reference.

Stamford with its Surroundings. By Henry Walker. (London: The Homeland Association, Ltd. 1909.)

The interest architecturally of Stamford is largely centred in its churches. Four out of a former sixteen still remain in use, and to a careful account of them by Mr. E. W. Lovegrove a special chapter is wisely devoted. The well-known tower and spire of St. Mary's Church easily takes first place for the beauty of its design, but of hardly less interest are the other churches, the Norman west front of the ruined Priory Church of St. Leonard, the remains of St. Paul's Church now part of the old school, and the screen-work in the chapel of Browne's Hospital. In the town is much domestic work of interest, and just outside is the great house of Burghley, whose builder lies under an elaborate Renaissance tomb in St. Martin's Church.

Stamford stands in an exceptionally interesting architectural neighbourhood. The churches of the Welland district are well known, and in almost every village will be found something to attract. The handbook gives a good and concise history of the town, and a sufficient list of places and what to see in them for the use of the motorist and cyclist. There is also a plan of the town and numerous excellent photographic illustrations.

MAGAZINES AND REVIEWS.

The *Art Journal* contains an article on "Kew Gardens," by Mr. E. C. Clifford, among the illustrations to which is a beautiful study of trees. Mr. Rathbone gives the third of his series of articles on "The Artistic Training of a Jeweller," headed "Jewellers' A B C." The "A B C" is the manipulation of wire into as many forms as pliers will twist; or as many as can be conveniently shown in illustration. There is a plate showing seven hundred units of form, made from a wire of a given length, and there are illustrations of silver ornaments and chains made mainly out of the units shown. This is a good way of illustrating how, in jewellery manufacture, design grows out of the very process of working. Mr. Lewis F. Day contributes an article entitled "Some Conclusions," which is a short consideration of the relation of ornament to nature, on much the same lines as the introductory essay to his book on "Nature and Ornament," noticed in another column.

In the *Burlington Magazine* Mr. E. Alfred Jones gives an account of the drinking horns and silver plate in the National Museum at Copenhagen. The beautifully-executed illustrations include four articles of very interesting and artistic style and outline, the two beakers and two silver cups on Plate IV., the beakers especially, which are of most graceful design. The editorial article recommending the formation of a reserve for the purchase of works of art in England, to prevent them being unexpectedly bought out of the country, we quite concur in. As is observed in it, we cannot expect always to find anonymous donors ready to pay or advance a large sum of money to purchase a picture that is threatened.

The *Architectural Record* (New York) includes an article headed "The Sculptor as His Own Architect and Builder." This is an illustrated description of a house designed and built for himself by Mr. Felix Peano, who, we understand, is a sculptor, apparently known as such in America; an Italian by birth, but now an American citizen. He modelled his idea of a house for himself in wax first, and then proceeded to carry it out, having made a rough pen-and-ink sketch of a ground plan. It is a curious affair, unlike any other house one has ever seen, and totally defiant of architectural conventions. When a sculptor takes to doing architecture, it is better that he should drop the conventions and do something entirely out of his head; his conventional architecture will probably be ungrammatical, and therefore annoying; his original architecture may be interesting. It is so in this case, but it is odd and unsatisfying. The following is a part of the description:—

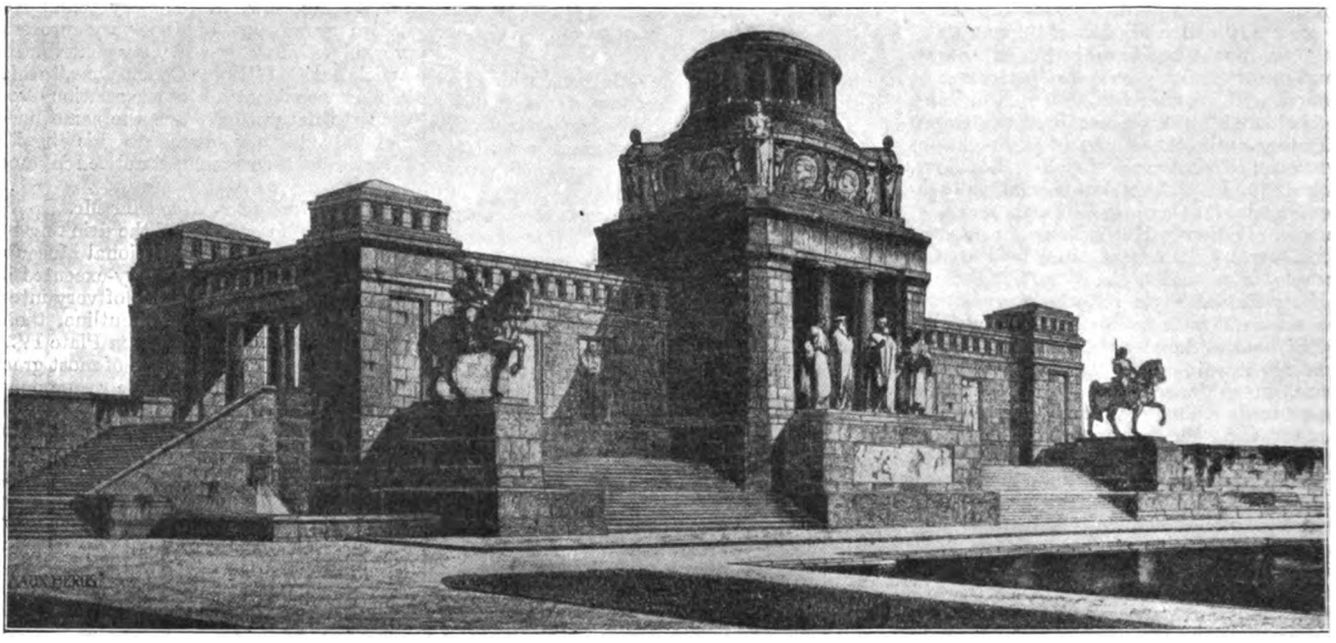
"The materials of the exterior are hollow burned clay building tiles, terra cotta and concrete. The whole is covered with a stucco of Portland cement, sand, and pebbles, making a 'pebble dash' thrown on with a whitewash brush. The walls in places are of considerable thickness. The terra-cotta sculpture is built in with the hollow tiles, and the designs are continued out over the wall tiles with cast cement. Then the stucco is applied and the designs worked in low relief by hand in the wet cement. The terra-cotta is washed over with thin cement, and thus the whole exterior is brought to an even colour, so that the monolithic effect is produced. It looks as if the whole were modelled in clay and dried in one piece. In fact, the design of the house was modelled in wax before it was built, and this model has been preserved. It has been cast in bronze from the model by the *cire perdu* process, and is now used as a jewel casket. The inside of the terrace parapets are completely covered with sculpture, partly in inserted terra-cotta, where relief was desired, and the rest modelled in wet cement. The tables and benches on the terraces are also combinations of terra-cotta and concrete."

This kind of thing is interesting once in a way, but we should be sorry to see architecture in general following these eccentric lines. The New University Club, in Chicago, on which there is an article with numerous illustrations, seems a rather remarkable building, of a size and sumptuosity of interior treatment which no London Club can rival.

The principal illustrations in the *Architektonische Rundschau* are of no particular interest, but it contains a long illustrated article "Züricher Raumkunst"—the art of decorating and furnishing interiors; from this it would seem that Zürich taste in these matters is very simple and good; and another on Churchyard Art ("Friedhofskunst") in Bremen, illustrated by a number of photographs of decoratively-treated grave-stones, which show great variety of design, and some of which are quite charming.

In the *Berliner Architekturwelt* the Town Hall for Barmen, a design by Herr Froelich, exhibited at the Berlin Art Exhibition of this year, shows an effective and dignified building, on ⌐¬ plan, with arcaded loggias in the ground story. By the same architect is a design for the Reformation monument

Digitized by Google



Design for the Geneva Reformation Monument. By Herr Froelich.
(From the *Berliner-Architekturwelt.*)

at Geneva, also from the Art Exhibition, of which we give an illustration.

The *Reliquary* (quarterly) contains an article by Mr. Le Blanc Smith on "Widdecombe Church and the great storm"; the latter was a tremendous thunderstorm of October 21, 1638, which seems to have played havoc with the church and killed several people and frightened the others out of their wits, and left a bundle of legends behind it. "The Church House, Widdecombe," with its lean-to loggia on wooden pillars, and the church tower rising behind, makes a most picturesque group of building. "Notes on some Roman objects found in Wiltshire" are contributed by Mr. E. H. Goddard, and an article on "Some ancient churches in South Pembrokeshire" by Mr. W. B. Ball. One of these is that "most interesting building," as he justly calls it, the church of Mænor Pyrr, now called Manorbier. Minwear Church, which we do not know, seems to be as curious and interesting a building as Manorbier. There is a photograph of a circular rubble pillar with an abacus, which looks as if it dated back to a very early period. It is a very small church, with the small square west-end tower with a long slit in the upper portion, and a corbelled out parapet, which is the usual character of the smaller church towers of the district.

The *Antiquary* contains a very interesting article by Mr. W. G. Collingwood on "Aldingham Mote"—Aldingham in Furness, where there is both a "mote" and a "moat"; the first representing a hill (Norman-French *motte*, Anglo-Saxon *munt*), and not by any means to be confounded with the Anglo-Saxon *gemót*, whence English *moot*, a meeting or assemblage. The "moat" at Aldingham is a ditch on a square plan, supposed to have once surrounded a timber house, of which all vestiges have disappeared. Mr. F. Cartwright contributes a short article on Haccombe Chapel, a very small XIVth century church nearly hidden from the passer-by among trees. Mr. Cartwright's article is likely to induce some to visit a small monument which seems to be more worthy of inspection than is generally supposed.

The *Illuminating Engineer* continues the article by Mr. Trotter, on the "Distribution and Measurement of Illumination," and contains an article by Mr. C. C. Paterson on the important subject of "A Unit of International Candle-power." Mr. Thos. Holgate contributes the first of a series of articles on "High-duty Gas Lighting," commencing with the subject of the high-pressure gas inverted incandescent light. He selects the Keith, recently installed in Fleet Street, of which he remarks:—

"Could the lamps have been placed on refuges in the middle of the roadway full advantage of the splendid distribution properties could have been taken. As it is the lanterns are fixed upon brackets which enable the footway to be clear of obstructions, and also avoid any shadows under the lamp. Every increase in distance from the dark surface of the buildings is advantageous in utilising the light, and is therefore to be sought for, and, if need be, obtained by the use of longer brackets. The colour of the light betokens high temperature, and with it a comparatively high efficiency in light radiation, but it is without the dazzling effect that would be injurious to the eye, and that would require toning down by frosted glass or opal screens."

The *Contemporary Review* contains an important article by Professor Stanley Jevons on "The Causes of Unemployment"; the sub-heading being "Trade-unionism and over-supply of unskilled labour." In giving a lucid exposition of the way in which demand and supply operate on wages where there are no restrictions, Professor Jevons observes:—

"The demand for any kind of labour depends upon what a few additional men would be worth to an employer if added to the staff already engaged in his works. If by employing a little more labour of any grade, whether by taking on additional men, or by working his present staff overtime, the employer can add to his total revenue a certain amount, say 10*l.* a week, after covering all additional expenses except the wages of the men, he will be ready to pay any sum less than 10*l.* for employing such additional labour, for out of the difference he would make a profit.

There are two causes which alter the money value of extra labour to the employer, both tending to make it decrease. In the first place, it depends upon the price which the manufacturer obtains when selling the finished commodity, after he has subtracted the cost of the raw material which enters into it. An increased demand by the public for the goods will raise their price and enable the employer to pay higher wages and employ more men, provided the cost of the raw materials has not advanced. Secondly, the money value of additional men to the employer may be very greatly affected by improvements in machinery. A boot manufacturer, for instance, who found it worth his while to employ twenty men "cutting out" by hand would probably find that six or eight men would be sufficient with machine cutters."

Coming subsequently to the subject of the Influence of Trades-Unionism, he takes the baker's trade as an example, and supposes the case in which a bakers' Union has succeeded in practically enforcing a higher wage, so that the masters must (apparently) concede it to avoid ruin. What is the ultimate result? Professor Jevons puts it thus:—

"The higher wage being established and agreed to for some fixed period of time by both parties, the masters must recoup themselves for the extra expense of labour by raising the price of bread, . . . and this increase of price will soon reduce the quantity of bread consumed. The new equilibrium price will be the minimum which will yield profits just sufficient to induce to remain in the business such number of master bakers as provides producing power sufficient to meet the demand for bread at that price. When the price is raised the reduced sales adversely affect the profits of all the employers, and a readjustment has to come about. Those whose businesses for some reason or other, such as deficient managing ability, situation in wrong locality, or bad construction of the bakehouse, are on the margin of efficiency, either retire on their savings, take to some other business, or struggle on and fail. In one way or another they are eliminated from competition with the other bakers who are cleverer or more happily circumstanced. A number of men are thus thrown out of employment, and it is not usually the case that the business of those remaining in the trade is so much increased that many of these men are taken on by them."

These are unpalatable truths, no doubt, to many, but that is the more reason they should be told.

Scribner, under "The Field of Art," gives an article by Mr. W. Walton on Mr. Van Ingen's decorative frescoes in the Post Office and the Court House buildings in Chicago, with some small and rather inadequate illustrations from the paintings illustrating "The Divine Law" in the Court House. These seem to be a good deal in the old-fashioned "Bible picture" style. There are some good remarks in the course of the article, on what decorative painting should aim at:—

"A protest may be lodged against the fear of demolishing the building by too positive painting on the wall. While real "realistic" art, so called, has no place in mural decoration, the appearance of realism, what may be called truthfulness, should be maintained; the landscape should be painted, not with all its varying distances and perspectives, but as it would appear if its realism were brought up to a flat plane. The quality of distance can be given without deceiving the eye, or trying to do so, which is unnecessary."

The same number contains an article on "Unfrequented Châteaux near Fontainebleau" (Vaux-le-Vicomte, Courances, and others), by Mr. Peixotto, illustrated by a number of perfectly charming sketches by the author.

In the *Century* the article on "Romantic Germany" (No. 9) deals with Rothenburg, which is one of the best illustrated of the series; the illustrations are from etchings by Mr. O. F. Probst. Mr. Timothy Cole contributes one of his beautiful wood-engravings of "French Masters," after a portrait by Mignard.

Harper contains an article by Mr. W. E. Geil, F.R.G.S., "Along the Great Wall of China," with some illustrations, which may be interesting at a time when some fresh attention has been turned towards this curious monument of Chinese military incompetence, which has long been so much forgotten as to have become almost a mere name.

Digitized by Google

Printed for the Proprietors of "THE BUILDER" by HORACE COX at Windsor House Printing Works, Bream's-buildings, E.C., and

THE BUILDER

VOL. XCVII.—No. 3468. JULY 24, 1909.

Contents.

	PAGE
Old and New Rome	87
The Hampstead Garden Suburb	89
Notes	90
School of Architecture, Liverpool University	91
The Architectural Association Sketch-book	92
The Bede House, Higham Ferrers, Northants	92
The Royal Sanitary Congress, Leeds	93
Association of Teachers in Technical Institutions	96
The Architects' Technical Bureau	96
Westmorland Home for Advanced Consumption	97
The London County Council	97
Lanercost Priory	99
Architectural Societies	99
Meetings	100
Fifty Years Ago	100
Illustrations:—	
A Plate from the Architectural Association Sketch-book	100
"Meulenborg," Elsinore	100
Lythe Church, Yorkshire	100
Design for a Fountain	100
An Eminent Contractor on the Budget	101
Applications under the London Building Acts, 1894 to 1908	101
Engineering Societies	101
Legal Column	102
Books Received	103
Competition News	103
Master Builders' Associations, etc.	103
London County Council Education Committee	103
Projected New Buildings in the Provinces	103
Metropolitan Asylums Board	104
Sanitary State of Enfield	104
Metropolitan Water Board	104
Court of Common Council	104
London and District Borough Councils	105
Obituary	105
General Building News	105
Stained Glass and Decoration	106
Appointment	106
Sanitary and Engineering News	106
Miscellaneous	106
Law Reports:—	
Action by Contractors against the Crown	108
Case under the London Building Acts, 1894 to 1908: Access to Roof	108
Contractors' Claim against Architect	108
List of Competitions, Contracts, etc., Open	109
Patents	111
Some Recent Sales	112
Prices Current	112
Tenders	113

Illustrations.

The Mosque of Sultan Suleiman. Drawn by Mr. R. A. Henderson (from the Architectural Association Sketch-book).

"Meulenborg," Elsinore: Denmark. Mr. W. D. Carôe, F.R.I.B.A., Architect.

Lythe Church, Yorkshire (Exterior and Interior Views). Mr. Walter J. Tapper, A.R.I.B.A., Architect.

Design for a Fountain for a Public Park: Extra Prize Drawing. By Mr. William Friskin.

Illustrations in Text.

	PAGE
The Lethbridge Viaduct, Canadian-Pacific Railway	90
The Bede House, Higham Ferrers	93
Westmorland Home for Advanced Consumption. Mr. John Hutton, Architect	97
Ditto. First and Ground Floor Plans	97
Lanercost Priory, Cumberland	99
Lythe Church, Yorkshire. Plan	100

Old and New Rome.

IN 1911 Rome is to be the centre of the celebration of the fiftieth anniversary of the proclamation of the Italian Kingdom, and the Olympic Games are also to be held there.

It is intended that an archæological exhibition of reproductions, models, plans, photographs, etc., of the monuments of Italy and of the Roman Empire shall be held in the Baths of Diocletian, the parts of the ruins which are in private ownership being expropriated and the modern additions demolished. The Baths were in a far better state of preservation in the XVIth century, and there are many views of them, both drawings and engravings, belonging to that period. The study of these has been undertaken as an indispensable preliminary by the Department of Antiquities; and it will also be necessary to provide the church of S. Maria degli Angeli with a façade better than the mean and unsatisfactory one which it now possesses, and which only dates from 1749, when the axis of the church was changed by Vanvitelli from that established by Michelangelo, who had in 1564 converted the Tepidarium of the baths into a church, and made this great hall the nave. Vanvitelli made the entrance through the circular Sudatorium on the south side, which had hitherto served as a side chapel, and by changing the axis, turned the original nave into the two transepts, thus much spoiling the effect.

The work of demolition of the modern buildings and additions, with which a certain amount of reconstruction will probably be necessary, has not yet commenced; and it is to be hoped that the delay which has occurred will not prevent the realisation of the scheme in time for the projected exhibition.

Another important piece of work, on the other hand, which has long been projected, has now been commenced in view of this anniversary—the systematisation of the so-called Zona monumentale or Zona archeologica, which is to extend from the Palatine to the Aurelian walls, including the curved south-east end of the Circus Maximus (the rest of the area of it is occupied by gasworks, which have destroyed probably the *spina* or central line of the circus, dividing the two sides of the course, which was still fairly well preserved in the XVIth century), the site of the Septizonium, destroyed by Pope Sixtus V. in 1585, and of the Porta Capena, and a large area, full of tombs, between, and on each side of, the Via Appia and the Via Latina, which diverge not far beyond the Baths of Caracalla. The scheme comprehends the formation of an avenue 100 yards in width, the portion not required for traffic being occupied either by the ruins already discovered or which will be brought to light, or by gardens. Undoubtedly the quiet, picturesque appearance of this now almost uninhabited quarter will in large measure be sacrificed. The Porta Latina and the Porta Metronia will be reopened, and will be used to give access to new quarters, which are already beginning to rise outside the walls. The work of demolition of the modern houses and buildings which occupy the site has already been commenced—demolition always proceeds quickly in Rome, where it seems to be in especial favour. It is to be hoped that proper respect will be shown to the remains of the Mediæval and Renaissance buildings that may be met with, and that the construction and systematisation of the new avenue will be carefully watched by the archæological members of the Commission which presides over it. There is otherwise a danger that the new works may lead to the destruction of some remains of antiquity which may be situated on the line which has been projected for it, and that others may be either buried without proper excavation or damaged by the necessary drains, etc., which will run beneath it. If the work is in any measure or sense to be completed by 1911 it does not seem that proper time has been allowed for the careful exploration of the site, which should be an indispensable preliminary to any works of a permanent character. One of the Italian papers very wisely says "to give, for 1911, a fitting arrangement to the Zona, but without destroying anything ancient and without compromising systematic explorations, this is the formula, which, in our opinion, may meet with universal approval" (*Giornale d'Italia*, June 24). It is only to be hoped that such counsels of prudence may prevail.

The site for the Stadium for the Olympic Games of 1911 has not yet been decided upon. There has been much discussion of the question: some talked of removing the gasworks which occupy the valley of the Circus Maximus, and constructing it there; others of making use of the Circus of Maxentius on the Via Appia, and building up the missing parts (the seats, etc.) in woodwork. But it is now proposed to build a permanent structure to the north of Rome, on the slopes of the Monti Parioli, to the right of the Via Flaminia.

The international exhibition of modern art is to be held in a gallery now under construction between the Villa Borghese and the Villa Papa Giulio—on the same side of the Via Flaminia, but rather nearer to Rome. Not far off will be the site devoted to the exhibition of modern architecture, a part of which will also find place on the opposite side of the river, near the Ethnographical and Artistic

Digitized by Google

Exhibition in which the various portions of Italy will take part. Architects, both Italian and foreign, will be invited to construct houses of various kinds, both for the rich and for the working classes.

There is no hope that the enormous monument to Victor Emmanuel II., which occupies the north and east sides of the Capitoline Hill, will be completed in 1911. It was begun in 1880, but, after the financial crisis of 1889, work on it was suspended for many years, and has only been recently resumed. In order to render it more visible, and to clear the area in front of it, it will be necessary to demolish the so-called Palazzetto di Venezia, an addition to the Palazzo di Venezia, dating from the XVth century; this will, however, be reconstructed on the other side of the Piazza di San Marco, on a site which has already been cleared. A magnificent monograph on the Palazzo and Palazzetto, by Dr. Hermann Egger and others, has just been published by the Austrian Government, to which, as heir of the Republic of Venice, the palace belongs, serving as the residence of the Austrian Ambassador to the Vatican.

Turning to the excavations of the Roman Forum, we may notice that Comm. Boni's activity has recently been transferred to a small building on the right of the prolongation of the Sacra Via from the Arch of Titus to the Colosseum, just beyond the foundations of the temple of Jupiter Stator, as reconstructed under the Empire, and, therefore, beyond the limits of the Forum proper.

This building is of curious plan, being rectangular, with an apse at each end. By some archæologists it has been associated with the baths of Elagabalus (218-222), by others identified with the Church of S. Cesareo in Palatio. The latter identification has been disproved only recently, since the Villa Mills on the Palatine passed into the possession of the Government, by the discovery, in a small rectangular room on the ground floor, of Christian frescoes of the Vth century A.D. The walls of the room are of brickwork of the end of the Ist century A.D., and it formed originally a part of the residential portion of the palace of Augustus (Domus Augustana) as restored after the fire of Nero by the Flavian Emperors.

In the building by the Sacra Via, Comm. Boni has recently discovered a staircase, contemporary with the rest of the building, but leading down to a well of the Republican period. The water of this well was evidently, from the objects found there, believed to possess healing properties even in the Middle Ages—as was also the case with the fountain of Juturna, in which numerous mediæval jugs were found.

The excavations on the Janiculum have proceeded a good deal further since the last account, which appeared in the *Builder* (March 6, 1909).

Remains of the earlier temple—no doubt that built by Gaionas himself—have come to light at a lower level and a different orientation. It has been found that the axes (the *cardo* and *decumanus*) of this temple were delimited by a kind of path, on one side of which were round-bellied amphorae laid sideways, and, on the other long narrow amphorae placed endways. The sacred spring lay on the line of the *cardo*, and its water was conducted in terracotta pipes through the sacred area; an inspection shaft for the conduit is still preserved.

One of the thresholds of this building has a tile bearing a stamp of the period of Commodus, which fixes the date accurately. To this building belong also some mosaic pavements with rough black-and-white cubes, and a channel for the ritual ablutions necessary in connexion with the cult.

The recent excavations at the Church of S. Crisogono, on the right bank of the Tiber, have led to the discovery of interesting remains of the older church of the IVth or Vth century A.D., which was situated on the west side of the present building (which itself dates from the XIIth century), the apse falling under the modern sacristy. It is at a considerably lower level, having been built, as is the case with S. Cecilia and other churches, into the remains of the actual house inhabited by the saint; brick walls of the Roman period belonging to this may still be seen.

So far the apse, which lies at the north end, has alone been excavated, with the *confessio* or crypt containing orginally the tomb of the saint. In the corridor leading to the window (fenestella) which gave a view into this crypt from the passage which follows the curve of the apse under the original floor level,* are some paintings, perhaps belonging to the VIIIth century: one panel represents two male saints, one youthful, the other older (probably S. Chrysogonus and S. Rufinianus) standing between two twisted columns, while in the next is a female saint, with her robe decorated with stars, perhaps S. Anastasia. Three steps ascend from this passage to the level of the church, and close to the head of them are some fragments of the perforated marble screen or *transenna*.

On the wall of the apse to the left are more paintings, of a decorative character, imitating, it would seem, the marble and mother-of-pearl inlay, which once decorated the walls of such a church as SS. Cosma e Damiano in the Roman Forum, and may still be seen in the Cathedral of Parenzo. One circle looks as though it had served as a model to the designers of the "Cosmatesque" pavement of the upper church. A small "Cosmatesque" tabernacle has indeed been found in the lower church.

On the right of the apse is a chapel with marble pavement of the VIth (?) century A.D., with disks of porphyry set in smaller pieces of marble. This was used as a place of burial, and several sarcophagi were found in it—one marble one with a group of Nereids on the front in relief and the bust of the deceased in a shell in the centre, and others in terra-cotta.

An important fragment of the "Servian" walls, already known to archæologists, has recently been rendered visible for a greater extent by the demolition of the Villa Spithoever on the Quirinal Hill. It is built, not of the usual blocks of red or brown tufa two feet in height, but of smaller, almost slab-like blocks, about a foot or a foot and a quarter high, of the green-gray tufa known as *capellaccio*. This material is found in various buildings which may be attributed to the Vth century B.C., such as the foundations of the original temples of Castor and Pollux, of Saturn, and of Apollo, in the lowest foundations of the shrine of Venus Cloacina, in the lowest pavement of the Lacus Curtius, etc.

Remains of similar walling have also been found in connexion with other parts of the Servian wall, and may belong to its original form; while the parts constructed of blocks 2 ft. in height would then belong to a later date, possibly to a reconstruction after the sack of Rome by the Gauls in 390 B.C.

One of the most important artistic events of recent years in Rome was the opening in April of the new picture gallery of the Vatican. It occupies seven large, well-lighted rooms on the ground floor, with vaulted ceilings decorated with white stucco, and walls lined with an olive-green fabric, with a simple wood window frame and dado. The windows are on the east side and look on to the Cortile di Belvedere, but the gallery is approached from the road leading to the Museum of Sculpture, and comprises not only the contents of the former Vatican gallery, but the best of the older pictures from the Lateran (the modern works having been left there), a considerable number of works (especially of the so-called "primitives")* from the Christian museum of the Vatican and from the library, and from the Pope's private apartments, and, finally, several pictures, discovered in storerooms or elsewhere, which were hitherto entirely unknown. It is a pity that the pictures of Giotto and the angels of Melozzo da Forlì from the sacristy of S. Peter's have not been added to the collection; and it may be hoped that it will not be long before this is done. Certainly, however, it will be some while before the centre piece of the old apse of the Church of SS. Apostoli, to which these angels also belong, comes from the Quirinal Palace to join them. It has also been truly remarked that when space was scarce it was a pity to sacrifice a large room in the centre of the line by turning it into an entrance hall, when the smaller room at the end, devoted to foreign painters, would have done just as well, and have obviated the necessity of returning through the first four rooms to reach the last three.

The first room contains the primitives, among which are serveral novelties; the second the works of the XVth century (the most remarkable of which is Melozzo da Forlì's fresco representing the foundation of the Vatican library by Sixtus IV., now placed in a far more favourable light than in the old gallery); the third the school of Umbria and the Marches, among which are several new works, notably a Madonna by Francesco, the son of Gentile da Fabriano, of whom only one other work is known; the fourth the works of Raphael, his father Giovanni Santi, and his master Perugino, containing entirely works already well known, but better arranged and lighted than they were in the old gallery.

*In the walls of this curving passage some small holes may be seen, which probably served to contain the lamps of visitors.

*The collection of Byzantine pictures from the library, a considerable number of which appeared in the exhibition at Grottaferrata (see the *Builder* of June 3, 1905), will be placed in an eighth room which is not yet arranged.

Digitized by Google

The fifth room is devoted to the Venetian school (one of the most important of the new pictures is Paris Bordone's St. George and the Dragon); the sixth to the artists of the XVIIth century (including some important novelties); and the last to the artists of foreign schools, containing a curious mixture of works—a fine and hitherto unknown Pietà of Lucas Cranach, Murillo's Marriage of S. Catherine, and Sir Thomas Lawrence's portrait of George IV.

THE HAMPSTEAD GARDEN SUBURB.

WE reported in our last issue the proceedings at the first of a series of Lectures in the Institute building in connexion with the Hampstead Garden Suburb, of which the most important item was a fine and eloquent paper by Professor Beresford Pite on "Town Planning."

In the Institute and in a temporary room adjoining it is an exhibition of town plans, estate plans, and plans and designs of houses, some of them already built on the Hampstead Suburb estate, others intended to be built there or elsewhere. The plans of towns, exhibited mostly in the Institute room, do not convey any very special lesson, nor did they appear to be selected with any special object, beyond that of adding to the general interest of the occasion; they serve chiefly to show that there has hitherto been no such thing carried out as town planning on any system, if we except the older portion of Carlsruhe, with its well-known radiating street lines. Wren's plan for rebuilding London after the fire is exhibited; but the practical interest of this has vanished; it belongs to the realm of things that might have been.

The opportunity of deliberately planning a town of any size, according to a pre-conceived scheme, is hardly likely to occur in the Old World; the only opportunity for such attempts is furnished by new suburbs, such as the one under consideration, or the laying out of building estates on land which is all under one ownership. Plans of some such estates are among the exhibits, but they do not show in general any attempt at wnat may be called a systematic laying out of land in a decorative manner and on a centralised plan. The Glyn-Cory Garden Suburb shows a somewhat definite plan in which the secondary roads are laid out in nearly concentric curves; in this case the plan comes so near symmetry that it might have been better to carry this out completely. The plan of Alkrington Hall estate, irregular in its main lines, shows the important feature of emphasising the junctions of main roads by expanding them into a square or what the French call a *rond-point*, which has always a good effect, and gives opportunity also for placing important buildings at those points. Beyond this, the idea of laying out an estate does not generally seem to get beyond that of providing a sufficiency of main roads and cross-roads, with care in some instances for arranging the houses so that as many of them as possible should have a healthful aspect. The plan of the Hampstead Garden Suburb is entirely accidental in appearance; but whether this is the result of deliberate intention or of following existing lines of lanes or other landmarks on the property, we do not know. If the road lines are deliberately laid out, it is bad planning, not only in an æsthetic sense, but even in a practical sense, as some of the lines of road are inconvenient for access from one part to another, and necessitate a circuitous route. There is however provision, in more than one place, for the formation of squares with symmetrical architectural effect. One of these, the quadrangle opening out of Hampstead Way, with one side open to the road, is already completed and looks very pleasant and attractive; the design is by Mr. Geoffrey Lucas.

It will always, probably, be a debated question whether it is worth while to lay out an estate on strictly architectural lines, or whether this does not lead to a monotony of effect which is better avoided. There is something to be said on either side. But there is nothing to be said for a wriggling plan; there should be some kind of backbone in the planning of an estate, and in Hampstead Garden Suburb there is none; it is the wriggling plan in its most immature form. It is the same at Letchworth Garden City, though this does not wriggle quite as much as Hampstead. If this way of laying out is adopted because it is thought more picturesque than a more formal plan, that is a fallacy; the *made* picturesque generally betrays itself.

There is something of this artificial picturesque, too in the general treatment of the houses. It is very pleasing in a way, no doubt; those who have not been to the site since the operations began will be surprised to find what a large hamlet of cottage dwellings, with occasional larger ones, has sprung up, and what a pleasant appearance the houses mostly have. But we should have felt a little more sympathy with the scheme, and a more decided belief in its future, if there had been a rather less conscious effort at producing houses of the sort which the present generation has agreed to regard as picturesque; houses with high tiled roofs and small windows with small panes. We think these picturesque now, but will they be thought so fifty years or even twenty-five years hence; or will they not rather be seen to be archaic—deliberately archaic? They have got an exceedingly nice-toned tile for the roofs—red, but not too red; and with the rough-cast walls, in some cases toned slightly, these make a very pleasing harmony. But high pitched roofs are not the best way of building; they mean either upper rooms with awkwardly shaped ceilings, or they mean large waste spaces which no one gets at; they were not thought picturesque by the country builders who built them two or three centuries ago; they were built so because it was the simplest construction for the village carpenter; we only think them picturesque now because they are not the modern way of building, and they have an association with old times. Another generation may think differently, and then where will the picturesque be? Houses with sensible modern roofs of flatter pitch would have been much more to the purpose. And generally speaking there is too much of the "hut" order of architecture about these houses; they do not look very solid. Mr. Geoffrey Lucas's "Proposed Block of Houses in Rotherwick-road," with its solid-looking brickwork, is more to the purpose, though even here there is a little too much of the high roof.

It is curious that some of these designers of picturesque houses seem to be very much out or very neglectful in regard to some important practical points. As we have before observed, in the small cottage with two rooms on the ground floor, the water-closet or earth-closet (the latter especially) should always be reached through an outside door; no small cottage can be quite nice if this convenience opens from a narrow little lobby *within* the house. The door may be quite close to the scullery exit door, so as to leave as little exposure to weather as possible; but it should not open into the house. This necessary precaution is quite lost sight of in many of the exhibited plans. In the houses in the square in Hampstead Way, before referred to, the closets have been very well planned; kept outside and with a trellis at the back to screen them. But we went into several of these houses—which are of rather larger type, four rooms to the ground floor—and in each case found that the kitchen range was placed at the farthest corner from the window, and with the window to the right hand of it; the most inconvenient position for lighting that it could be placed in. It is curious to find that architects who can design such pleasing-looking houses are ignorant on a point like this, which every cook and housekeeper knows.

Among the drawings exhibited are some interesting ones by Mr. Lutyens, one of them a plan and drawing of Central Square, as intended, with a church on one side and a chapel of we forget what community on the other side, each with its own marked architectural character. His elevation of the church is a remarkable drawing, and represents a fine piece of solid and characteristic brick architecture.

Among the house plans one by Mr. Baillie Scott, for three houses on plots 160, 161, 162, is quite delightful in its ingenious and effective arrangement, and merely as a plan and nothing else, is one of the most interesting drawings in the room. A large model is exhibited in the room of a Liverpool insanitary building, with narrow courts closed at one end; but if this is intended as a special indictment of Liverpool it is hardly fair, as we know that the Liverpool Corporation are active and energetic in their endeavour to do away with all such property, and replace it by better designed houses.

However, the Hampstead Garden Suburb may be regarded as a very successful undertaking; if we should have liked it better for being less archaic in general style, we fully admit that it has probably saved the neighbourhood from the overcrowding and ugliness of the speculative builder's enterprises. It has been a good idea, too, to give certain groups of building over to one architect, and others to another, so that there may be a kind of collective variety of manner arising from the individual taste of each architect. There seems to be an idea, too, that the suburb is to promote a certain kind of social as well as building

Digitized by Google

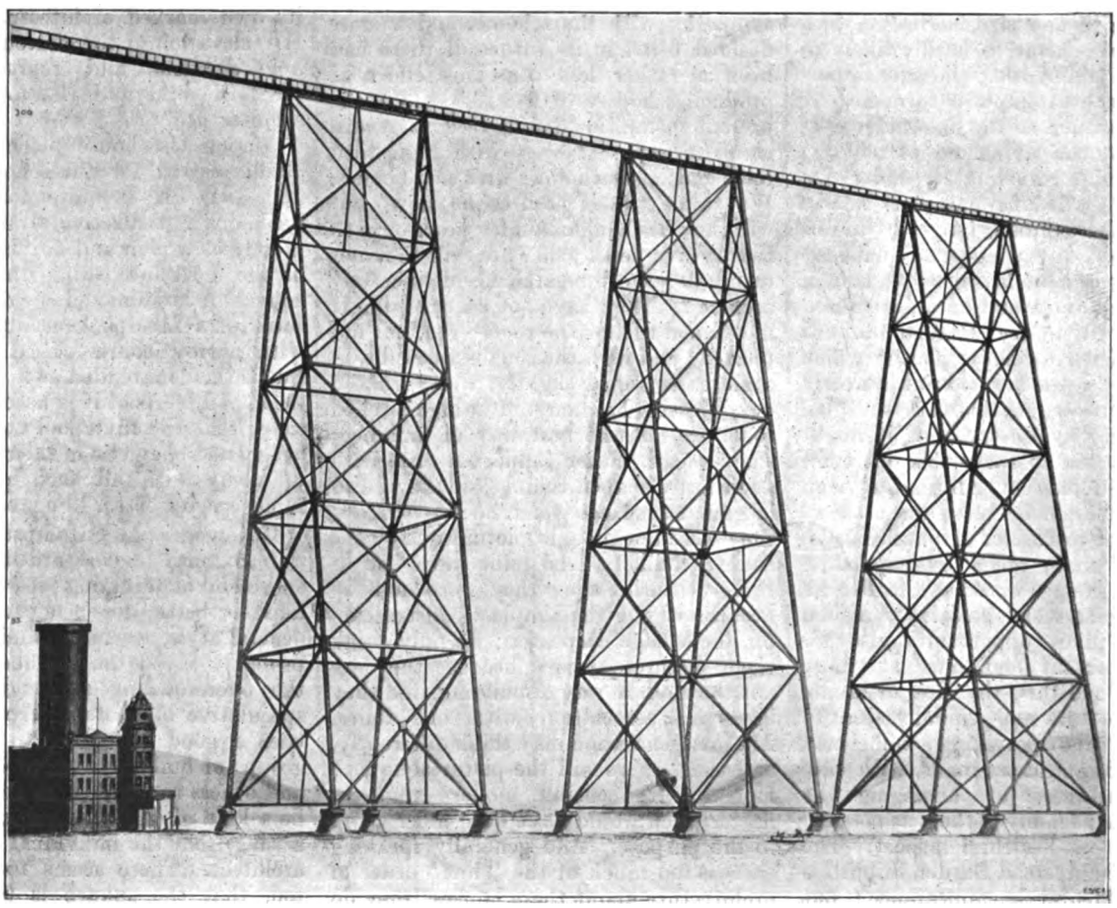
reform; at least, we overheard it explained to a visitor that "this was to be a place of social fellowship; not like the ordinary London suburb where you live next a man for twelve or fourteen years and do not know him and do not want to know him." Whether that idea would be regarded in the light of an advantage incident to residence there may be a question.

NOTES.

The Land Taxes. THE Chancellor of the Exchequer received last week a most important deputation from the British Constitutional Association. That deputation was representative of those entitled to speak with authority on the subject of the proposed taxation of land—architects, building associations, land companies, surveyors, were all represented, and the representatives, speaking from experience, brought forward arguments and reasons certainly requiring consideration by the Chancellor of the Exchequer. The restriction of building, the hindrance to land development, the injury likely to be caused the investor, were all brought before the Chancellor, but two-thirds of his reply was taken up with an objection to the form and manner in which the deputation had approached him, and the remaining one-third only amounted to a vague assurance that any facts brought before him would receive consideration. The facts have been brought before the Chancellor over and over again, both in Parliament and outside, and his attitude towards this influential deputation must be a cause of deep dissatisfaction. The description applied by Mr. Lloyd George to the arguments addressed to him was that they amounted to "cheap and superficial political sophistry," according to the report of his speech in the *Times*. Ministers introducing revolutionary measures should not be too thin-skinned as to the manner in which they are approached by those whose material interests are seriously affected; but in this case many of the classes represented, for instance the surveyors, were taking a wholly disinterested and public-spirited action on behalf of the public.

Street Lighting in London. THE Committee of the Corporation of London who recently visited various Continental cities in order to inspect the systems employed for public lighting have now issued their report. Apparently they were most favourably impressed with the system of gas lighting employed in Berlin. The largest type of "Graetzin" high-pressure inverted lamps which are fitted with three inverted burners per lantern produce an illumination of over 4,000 candle-power at an expenditure of only 85 cubic feet of gas per hour. The municipal authorities in Berlin have decided to replace all existing gas and electric lamps by these burners at an estimated expenditure of 350,000*l*. The deputation have therefore been led to think that "high-pressure incandescent gas lamps with inverted burners" should, wherever possible, be adopted for street lighting. They also recommend that centrally-hung lamps with lowering gear should always be used. We are surprised at the sweeping nature of the conclusions at which the deputation has arrived. Perhaps the amount of the money expended in experimental lighting of the City during the last ten years has something to do with the obvious anxiety to have the whole question settled once for all. Unfortunately difficult questions in engineering cannot be answered so easily. We learn from a note attached to the report that gas in Berlin is manufactured by the municipality and that electricity is purchased in bulk from a private company. Whilst ordinary consumers have to pay 3s. 6d. per 1,000 cubic feet, the charge for the public street lighting is only 1s. 4½d. Under these circumstances street electric lighting is obviously handicapped in Berlin in a way that it is not in London, and it is rash to draw hasty conclusions. High-pressure gas systems of lighting are well-known in this country, but the effects produced on the normal eye are disappointing after that produced by flame arc lamps. Careful tests prove that there is very little to choose so far as economy is concerned between high-pressure gas and flame arcs in Berlin. Personally we prefer the latter.

The New Lethbridge Viaduct, Canada. THERE is now under construction for the Canadian Pacific Railway one of the longest and most lofty bridges in the world. Crossing the valley of the River Bolly, this structure will be 5,327 ft. long and will provide the clear headway of 307 ft. above mean water level. Apart from its unparalleled length and great height the viaduct is not particularly remarkable. The girders carrying the railway are supported by steel towers somewhat after the style of the movable trestles used in some railway-stations for the maintenance of electric lamps. The towers are all of the same pattern and vary only in respect of height. The only



The Lethbridge Viaduct, Canadian-Pacific Railway.

Digitized by Google

thing to be urged in favour of the design is that it probably represents the most economical method of constructing the viaduct. That, of course, is a sufficient justification for an engineering structure, professing nothing but its capacity for the performance of a self-evident duty. It is worthy of note that the only bridge approaching the Lethbridge Viaduct in length is the Alexandrowski Bridge over the Volga, that structure being 4,871 ft. long, and that only the Victoria Falls Bridge has advantage over it in height.

Manhattan Bridge.

YET another important bridge between New York and Brooklyn is nearing completion. This structure will constitute the fourth means of communication over the East River and the third longest span suspension bridge in the world. The foundations were laid as far back as 1904, the first wire of the cables was carried across in June, 1908, and the four main cables were completed before the end of the same year. In April last, the stiffening girders, between which will be the main decking, were connected from end to end, the upper deck is now well advanced, and it is hoped that the approaches will be completed during November. This great work includes some 37,000 tons of steel, and the fact that 8,000 tons have been used for the cables alone gives a very good idea of its magnitude.

The Height of Reinforced Concrete Buildings.

A RECENT hearing by the New York Board of Aldermen on the Building Code Revision was largely occupied by evidence relative to the limitations of height proposed for reinforced concrete buildings in the new regulations as drafted. As might be expected, there was a general consensus of opinion against any such restrictions. Mr. Rudolph P. Miller, on behalf of the Allied Real Estate Associations and the Association of Architectural Engineers, urged that sufficient restriction as to height was provided by requirements as to strength and safe working stresses. Mr. R. F. Tucker, representing the Building Trades Employers' Association and the Concrete Association of America, considered the proposed restrictions to be unnecessary, and pointed out that the column stresses defined in the code would in themselves conduce to reasonable height limits. Mr. R. L. Humphrey, Engineer of the Geological Survey Structural Materials Testing Laboratory, thought that the arbitrary definition of height would handicap the use of a very excellent material. Professor Ira H. Woolson, of Columbia University, also protested against the code objecting to the limitations of height, on the ground that the design entirely controls the height of buildings. Similar evidence was given by Mr. H. W. Hodge and other witnesses possessing undoubted qualifications to speak with authority. In the face of the opposition thus made clear, we imagine the Board of Aldermen will scarcely persist in their proposals.

Water Purification by Ozone.

PRACTICAL experience in the sterilisation of water supplies by means of ozone is afforded by the plant installed at Chartres, a town of about 25,000 inhabitants. Water drawn from the river is pumped into settling reservoirs, and after clarification it passes through filters to the ozone plant, which is in duplicate, so that one set is always available. Trickling downwards through four layers of pebbles with the aggregate depth of 14 ft., the water meets a stream of ozonised air delivered through perforations in the floor of the sterilising tower. The ozone generator is a very simple affair, consisting of a glass cell 6 ft. long by 3 ft. wide by 6 ft. deep, inside which are several sets of cast iron plates in groups of three, and separated by glass plates covered with tinfoil. The middle plate of each set is connected with electrical machinery, furnishing alternating current at the pressure of 20,000 volts, and the two outer plates are connected to earth. Ozone is generated by electrical discharges, and escapes through perforations through the outer plates, being thereafter carried by a current of air under pressure into the purifying tower. About 117 grains of ozone are required per 1,000 gallons of water, the economy of the process being suggested by the fact that the charges for water remain the same as they were before adoption of the new system.

Bentley Priory Estates, Middlesex.

THIS property, covering some 775 acres in the high lands between Stanmore and Harrow Weald, has been sold at auction for 275,050*l*. It embraces the Bentley Priory, Stanmore Park, Manor House, and Woodlands estates, which yield a rental of nearly 10,000*l*. per annum. Bentley Priory, having a park of 300 acres thickly wooded with oak, elm, chestnut, and cedar-trees, with Italian gardens and long shrubberies of firs, rhododendrons, and evergreens, lies 450 ft. above sea-level. It occupies the site of a house of Augustinian Canons which at the time of the Suppression belonged to the monks of Lanfranc's Hospital of St. Gregory in Canterbury. Cranmer exchanged the revenues for lands in Wimbledon and elsewhere to Henry VIII, who shortly before his death granted Benethley to William Sacheverell and Henry Needham. James Duberly, an army clothier and contractor, sold it to James, first Marquis of Abercorn, in 1790. The mansion, as rebuilt by Sir John Soane, became the Holland House of the Tory party, and in 1848-9 was the home of Queen Adelaide. Sir John Kelk, contractor, bought it from the Hamiltons in 1852; he added the Italian campanile and the conservatories. About twenty-five years ago the house was enlarged with an annexe, and converted for purposes of a "residential hotel"; it has latterly been used as a private school.

Somersby, and the Tennyson Centenary.

A SUGGESTION is made that the restoration, at an estimated outlay of 2,000*l*., of the XIIIth—XIVth century churches of Somersby and Bag Enderby, in east Lincolnshire, would form an appropriate mode of locally celebrating the first centenary of the late Lord Tennyson's birth. The latter church is closed, being in an unsound condition, the tower has the date "1407," with the name of the builder Alwin, of Enderby, on his memorial slab; the low square tower of Somersby, of green sandstone, is shorn of its belfry stories, and much needs repair. In the churchyard is a cross having a gabled tabernacle, with the Virgin and Child and the Passion. Dr. Tennyson was Rector of Somersby where his three sons were born and passed their early manhood. The present owner has put the rectory house into a state suitable for its occupation by a tenant, and has made liberal arrangements for the reception of visitors. Upon the property stand Bag Enderby Hall, and the Manor House designed reputedly by Vanbrugh—the "lonely moated grange," the "dreamy house" of the dirge of "Mariana." The quaint Gothic hall which the rector made for his children, the attic in the roof a favourite retreat of the two poet-brothers, the garden—all have suffered but little change. There are the lawn, the gardener's cottage, and the brook, and landscape within "the circle of the hills," having many an association enshrined in familiar lines of Tennyson's "In Memoriam," his "Ode to Memory," and his other earlier reflective poems.

SCHOOL OF ARCHITECTURE, LIVERPOOL UNIVERSITY.

THE annual exhibition of students' work was held in the Tate Library of the University on July 9, 10, and 11. The work shown naturally falls into three groups:—Firstly, diploma and scholarship work, representing the work of students in their third and fourth years, who are already draughtsmen in offices; secondly, the work of students who have taken the degree or certificate in architecture this year, which is second-year work; and thirdly, the drawings of various first-year students who will be taking the degree or certificate next year.

According to the present arrangements the degree students (B.A. with honours in architecture) and the certificate students both take a course of two years in the studio; they then enter offices as draughtsmen and take the diploma course, which extends over another two years, and comprises work done chiefly in the evenings. By the new arrangments, however, which come into force next year, the degree of Bachelor of Architecture will not be conferred until after the two years of diploma work, which, including a preliminary year devoted to purely academic studies, will give the course a duration of five years.

Among the diploma work we noticed an interesting design for an ambassador's villa by the sea, delicately coloured. The scholarship measured drawings included a fine set of the Gran Guardia Vecchia at Verona, fully rendered in lamp-black, and the Palazzo Pompeii at Verona, both by San Micheli; the Gran Guardia is sometimes attributed to an otherwise unknown architect, Curtoni.

The most interesting and important section of the exhibition is that of the second-year work of students who are leaving the school. In this case each student had arranged his drawings in one bay of the library, and it was thus possible to compare the merits of different treatments of the same subject. The survey, also, of one of these bays gives a good idea of the amount of architectural knowledge which a student has absorbed during his two years' course in the studio, and the standard required in order to take a degree or certificate. In general the degree work appeared to be of higher standard than the certificate (although many of the subjects were taken by both), and it contained one important piece of work which the certificate students were not required to take—that is to say, a design done as an examination during one month, each student working in a separate room. The subject set this year was "A Villa Situated on a Sloping Site Surrounded by Woods." It

Digitized by Google

was supposed to serve as a leisured retreat for a wealthy man, and was to include a terraced garden. One of the designs had a suggestion of French feeling in it—another had evidence of Greek influence, while a third with flat-pitched pantile roof showed a leaning towards certain Italian examples. The drawings were fully coloured, and the green background of woods was very effective in throwing up the white buildings. It was interesting to notice in these and in the other designs done in the studio, the various individualities of the students showing themselves in the character of their work. One evinces a consistent predilection for Greek work of a severe but not dry type; another is evidently influenced by late Georgian work, of which there are large quantities in Liverpool, and which is measured up frequently by students in their first year. Another student has come under the influence of certain modern American work; and there is also the Palladian and the Wren manner visible in others. In a word, though the whole school shows a general trend or body of opinion in the direction of large simple and monumental architecture, there is plenty of variety—no feeling that individuality is stamped out in order to conform to an arbitrary standard of taste. If there is any definite bias noticeable it is perhaps towards Greek rather than Italian, as though the influence of Cockerell were still felt in Liverpool.

The studio work of these second-year students appeared to fall into two types of subjects; simple domestic designs worked out for the sake of construction as much as for the design, with working ½-in. drawings and full-sized details—the notes and figuring on them comprising practically a specification. A block of almshouses, a country inn, a moderate-sized town house, were typical subjects in this class of design. The students do not draw out elaborate constructional diagrams irrespective of their position in a building, but these constructional subjects are selected so as to include the greater part of the problems of constructional design, of a simple nature, such as an architect may be called upon to solve.

The other subjects resemble the "concours sur projets rendus" of the Beaux Arts—they are exercises in composition and design, and they are studies in large monumental types of architecture. A Campo Santo, as a magnificent monument to great architects, was one subject which produced some of the best designs. A large open central space laid out in a simple way with one or more large monuments and surrounded by colonnades with an entrance at one end and a mortuary chapel at the other: this was the subject, and it gave plenty of scope for dignified grouping and the handling of large masses. A ball-room as an addition to a country house was a subject for interior treatment, and an art gallery to be situated on one side of a public square was a good exercise for a public building. Another subject was an entrance to a public park, comprising a carriage gateway flanked by colonnaded screen walls. The echo of existing work was naturally perceptible in many of these designs. The suggestion of San Micheli as one of the architects to be enshrined in the Campo Santo had caused reminiscences of the Porta Palio at Verona; one of the art galleries faintly recalled Messrs McKim, Meade, & White's architectural school at Harvard, and Hyde Park Corner had undoubtedly influenced one of the park entrances. We are in agreement with this wholesome assimilation of fine work—the only true method of building up originality. "The greatest natural genius," says Sir Joshua Reynolds in his sixth discourse, "cannot subsist on its own stock; he who resolves never to ransack any mind but his own, will be soon reduced, from mere barrenness, to the poorest of all imitations; he will be obliged to imitate himself, and to repeat what he has before often repeated."

The measured work in which the Liverpool school has always been particularly strong, is this year distinctly interesting. The Liverpool Customs' House, a colossal Greek building by Foster (an associate of Cockerell's), we have not seen illustrated before; and Seaforth Hall, another Greek building of great delicacy and refinement, has been wisely measured up before its destruction in order to make way for dock extensions. Both Oxford and Cambridge, those storehouses of fine classical work, have been drawn upon—Vanbrugh's Clarendon Press and Wren's Queen's Library from the former, and Gibbs's Buildings at King's College and Wren's magnificent Library at Trinity from the latter.

The work of the first-year students was arranged into groups of subjects and not according to the work of individual students; it illustrated in a general way the work done during the first year at the school. There were a group of designs for workmen's cottages to cost 300*l*., shown as complete working drawings; a series of simple studies in the use of the orders—an open loggia against a garden wall and a small mausoleum, the latter a most valuable exercise, teaching the simultaneous consideration of interior and exterior.

One of the most interesting features of the exhibition was a series of compositions in the Orders, done presumably by students before beginning any large classical designs. These compositions, some of which were completed, others only in pencil, consist of different examples of the orders from definite buildings, Greek or Roman, arranged on a sheet with a small elevation or view of the building from which the order is taken in the middle distance and a landscape background. Various details, such as vases, steles, and pieces of enrichment are introduced, and the whole arranged so as to form a picture, partly in perspective and partly in elevation, without incongruity. These compositions are completely coloured so as to give as nearly as possible the effect of the bright light and dark contrasts of foliage of Italy or Greece.

This use of colour in purely architectural drawings appears elsewhere in the exhibition, and is, we hope, a sign of a future revolution of architectural drawing in this country. Sketch plans, takingly coloured in order to catch the eye of a client, have always been used by English architects desirous of appealing to the average man's colour sense; but a kind of frigid self-restraint has made us keep our completed drawings unnecessarily severe. The French and Americans (under French influence) have for years past made use of all the allurements of colour and setting that they can command to take off from the deadly dulness of architectural drawings, and they consider anything permissible which can give an effect of reality to their architectural conception. One of their most effective methods is to give a perspective setting to an elevation, and there are several examples of this in the exhibition of the Liverpool School. The colouring we allude to means more than the mere indication of different materials by tints—it consists in combining the building and its setting into a single picture which contains a certain degree of the illusion of reality.

THE ARCHITECTURAL ASSOCIATION SKETCH-BOOK.

THE latest issue of the Architectural Association Sketch-Book commences with a subject not very frequent in its pages—the measured drawings of a Norman Castle (that of Hedingham), the keep, at least, by Mr. Cecil C. Brewer. We see the usual characteristics of the Norman keep; the outer door reached by an external stair; the walls 12 ft. thick, with small chambers in them; the circular staircase at one angle. The first and second floors have been arched over in the centre with one large arch springing from a wall shaft; the upper arch is intact, of the lower one only the haunches remain. The object was apparently only to assist in carrying the floor beams. We presume the floors shown in the section are modern.

Mr. Coombs (student of the Royal College of Art) contributes a very complete set of measured drawings of Christ Church, Hants, a monument which has been frequently illustrated; and Mr. Colin Macdonald a set of Greenwich Hospital, including a sheet of mouldings, which are of value. Hampton Court Palace follows, as another very old friend, illustrated with measured drawings by Mr. A. E. Poley. A subject which we do not remember to have seen illustrated before, is the Courtroom of the College of Arms in Queen Victoria-street, dating from 1683, of which the wood carvings are curious and interesting; Mr. James M. Scott furnishes the drawings.

Renaissance is more drawn upon of late years than Gothic, but we welcome two fine sheets of geometric drawing of the noble relic of Pershore Abbey, by Mr. F. C. Mears.

Somewhat more out of the way is Mr. Martin's contribution of a sheet of sketches of details from old houses in Dordrecht, one of which, a wall panel (apparently bas-relief), shows a rude representation of old London Bridge as seen by a Dutch visitor, and dated 1617. After this we come to something more like the old days of the Sketch-Book, in Mr. Wontner Smith's fine perspective drawings of Caudebec, evidently done from drawings shaded with brush-work, and exceedingly broad and effective. We used to have more of this style of drawing in the Sketch-Book; and though we admit that measured drawings are more useful, it is refreshing to come now and then on a piece of powerful pictorial drawing. And in the case of Caudebec, Mr. Martin furnishes the measured elevation and section of one bay of the nave.

Italy is more largely represented than any other foreign country. Among the most interesting illustrations are those by Mr. Lionel U. Grace, of the Church of Sta. Maria, Toscanella; and Mr. Arthur R. H. Jackson gives a rather unusual subject, more pictorial than architectural—two of Raphael's ceilings in the Vatican. These are full of suggestion in a decorative sense, and form an agreeable variety from the purely architectural subjects.

Lastly, we may mention especially the three fine perspective studies which Mr. E. H. Henderson has contributed: an interior of S. Sophia, and an interior and exterior view of the Mosque of Sultan Suleiman. The interior view of this latter building we have reproduced among our plates this week, as an example of the contents of the Sketch-Book.

A reproduction of a pencil sketch by Professor Blomfield, of a piece of Renaissance detail at Fontainebleau, forms a very effective title-page.

It is a good point in the Sketch-Book that all the illustrations of ancient buildings are dated, which increases its usefulness in a historical sense.

THE BEDE HOUSE, HIGHAM FERRERS, NORTHANTS.

THIS institution was established on the site of an earlier building, by Henry Chichele, in 1423, for twelve men and one woman, all to be not less than fifty years of age; the senior bedesman being termed the prior.

The founder, a man of humble birth and a native of Higham Ferrers, became Archbishop of Canterbury in 1414, and his monument may be seen in England's premier cathedral.

The Bede House forms a parallelogram measuring internally 65 ft. 8 in. by 23 ft. 10½ in. The western portion was originally divided into sleeping cabins for the inmates, and thus served for hall and dormitory, the chapel being at the east end. This arrangement is found in many old almshouses, and it appears to owe its origin to the old monastic infirmaries; the idea being to allow the sick and bedridden to join in Divine

Digitized by Google

Service, an open screen only dividing chapel from hall.

Externally, the building has a peculiar striped appearance, from the alternate courses of red and white stone of which the walls are constructed. The west front consists of a large five-light window, the arched head being four-centred and slightly ogeed, and the hood-mould crocketted. The moulded details are very good, while the heads forming the hood-mould terminations are similar to those on the windows of the college; another of the archbishop's gifts to his native place. The doorway beneath the window is also ogee-headed in the hood-mould, which is crocketted. The bell-cot on the apex of the gable is modern. The north and south fronts are divided by buttresses into six bays, in two of which is a two-light square-headed window, with cinquefoil tracery. One bay on each front has a four-centred arched doorway. The chapel has been much restored, and the east window is quite modern.

Internally, the hall has a fine oak roof of six bays, the trusses of which spring from corbels of oak. The arch between hall and chapel is four-centred, with an embattled capital at the springing. The south side of the hall has a large original fireplace. The indication of a building earlier than Chichele's by more than a century, consists of the south-west window of this hall where the trefoiled and soffit-cusped tracery below the transom proclaims it as early Decorated in date. Two entries in the Lincoln registers of presentations to the wardenship of the hospital in 1258 and 1265, respectively, confirm the evidence as to the earlier foundation, which, no doubt, formed the basis for Chichele's fine building. The hospital and the large estates adjoining are the property of Earl Fitzwilliam. SIDNEY HEATH.

THE ROYAL SANITARY CONGRESS, LEEDS.

INSTEAD of holding their usual Congress this year, the Royal Sanitary Institute have co-operated with the Royal Institute of Public Health and the Corporation and University of Leeds in holding a conference at Leeds. The Congress was very largely attended by delegates from county councils, municipal corporations, and other local authorities,

Digitized by Google

whilst the following amongst other societies were officially represented:—Architectural Association, Birmingham Architectural Association, British Association, Water Engineers, Civil and Mechanical Engineers' Society, Geological Society of London, Institute of Civil Engineers of Ireland, Local Government Board for Scotland, Local Government Board for Ireland, Metropolitan Asylums Board, National Registration of Plumbers, Royal Institute of British Architects, Rural Housing and Sanitation Association, Sanitary Inspectors' Association, Society of Architects, Society of Engineers, Surveyors' Institution, etc.

PRESIDENTIAL ADDRESS.

On Saturday the delegates were received by the Lord Mayor, and Colonel T.W. Harding (President of the Congress), delivered his presidential address, in the course of which he remarked that Leeds was an example of that rapid industrial development which had brought so many difficulties in its train. In 1750 the population was estimated at 25,000; in 1851 it was 172,000, whilst to-day it was over 480,000. Those who had known Leeds a generation ago would be able to appreciate the great improvements which had taken place since the removal of the slums, the widened streets, the open spaces, the increased hospital accommodation for infectious diseases, the efficient removal of domestic refuse, the universal adoption of the water-closet system, and the extension of the admirable water supply, which was one of the purest and most abundant in the country. Forty years ago the huge ash-pits and privies were common to a large number of back-to-back houses, they were rarely emptied, and the approaches were indescribably filthy. Those conditions happily had long ago passed away, and their removal explained the reduction of the death-rate. Three-quarters of a million had been spent by the Corporation of Leeds in clearing away these insanitary areas, while the substitution of water-closets, and the frequent removal of domestic refuse, had made the remaining old streets tolerable. There was a great and justifiable objection to back-to-back houses of the old type, and in his mind one of their worst features was that sanitary conveniences were common to a number of houses. But those who are interested in this feature of the housing question would do well to see a type of back-to-back house, which, he believed, was peculiar to Leeds, and which some of them thought is too good to come under the condemnation of the new Town Planning Bill; for these houses are roomy and convenient, have a small garden in front, and separate conveniences to each house, at a rental within the means of a single family.

Treatment of Sewage.

On Monday the Engineering and Architectural Section commenced its sittings. The President of the Section was Councillor G. F. Bowman (Chairman of the Unhealthy Areas and Housing Committee of the Leeds City Council), and the Vice-Presidents were Messrs. W. Nisbet Blair (President of the Institution of County and Municipal Engineers), G. A. Hart (Sewage Engineer, Leeds), E. T. Hall, F.R.I.B.A., C. G. Henzell (Waterworks Engineer, Leeds), E. Purnell Holley, W. T. Lancashire (City Engineer, Leeds), P. Robinson, F.R.I.B.A. (Chairman of the Leeds Architectural Society), and H. D. Searles-Wood, F.R.I.B.A. Messrs. A. J. Martin and E. J. Silcock acted as secretaries of the Section. Colonel T. W. Harding presided at the first sitting.

Rothwell Sewage Works.

Mr. E. J. Silcock, M.Inst.C.E., described the Rothwell Sewage Works, and said the works had been selected for description because of the order in which the various steps in the purification process takes place. Briefly described, the system is as follows:—On arrival at the sewage works the sewage is passed through a small grit and screening tank, and is then pumped to a special revolving screen with a fine mesh. After passing the screen the liquid with all the suspended solids other than those which have been removed by the grit tank and screens is taken direct to deep percolating bacteria beds constructed with very large medium and designed to allow a free passage to the solid matter. The effluent from these bacteria beds is subsequently passed through ordinary sand filters, which are worked as mechanical strainers only, exactly like an ordinary waterworks filter, and by them the suspended matter is arrested. The filtered effluent is discharged into a small water course connecting directly with the River Aire. The sand filters are constructed of such an area as to permit of some being dried whilst others are at work. It is found that the material arrested by the sand filters quickly dries to a consistency which can be skimmed off the surface of the sand with spades, and, when removed, it soon falls to powder. Analyses of the deposit on the sand filters show that it has an earthy odour and a slightly alkaline reaction; it contains about 58 per cent. of moisture and the dried sludge loses about 25 per cent. on ignition. A microscopic examination reveals sandy and dark brown particles, some vegetable debris, unicellular algae, a few diatoms and nemetode worms. The works have been in operation since September, 1906, and the resulting effluent has been satisfactory to the West Riding Rivers Board. Mr. Silcock submitted that under certain conditions it may be desirable to adopt this system of purification which has the following advantages:—(1) The sewage is treated fresh and consequently there is no danger of smells arising from putrefaction. (2) The solid matter by being passed through the oxidising beds is rendered inocuous, and is subsequently easily dealt with.

Preliminary Processes of Sewage Treatment.

Mr. A. J. Martin, M.Inst.C.E., in a paper on this subject, stated that the Royal Commission on Sewage Disposal has recently issued its fifth report. The Commissioners consider that some form of preliminary treatment is generally desirable. Sedimentation, chemical precipitation and septic tank treatment are recognised as suitable processes. Precipitation has been wrongly regarded as obsolete, but it is highly efficient for the removal of suspended matter, and is in other respects advantageous: The Commissioners confirm Mr. Cameron's observation that a septic tank may be either closed or open. They also confirm very closely the figures given in his Leeds paper as to the amount of sludge which is digested in a septic tank. His estimate that a tank might be run for twelve months without cleansing has in some cases been greatly exceeded. The Commissioners consider that the choice of a mode of preliminary treatment at a given place should depend upon local circumstances: Precipitation is probably better for very strong water-closet domestic sewage, or for sewage containing brewery or tannery waste. For weak sewages septic or sedimentation tanks would usually have the advantage, and for very strong domestic sewages consisting chiefly of slop-water, septic tanks are preferable. Estimates are given of the cost of works on various systems to deal with a hypothetical case. Septic tanks with contact beds are most expensive, and quiescent flow settlement with trickling filters least costly. The Commissioners repeatedly insist that these figures cannot be applied generally, and they point out that they are based on certain assumptions, among others that a fall of 15 ft. or 16 ft. is obtainable. Wide differences, moreover, are assumed between the percentage purifications effected by the various preliminary processes, and the amounts of suspended matter left by each; but the actual results cited show little difference in the latter respect, the average amounts of suspended matter in twenty-six cases reported on being 7, 11 and 15 parts per 100,000, for precipitation, septic treatment and sedimentation respectively. The Commissioners indicate various means of freeing a tank effluent from suspended matter including roughing filters, Dortmund tanks and precipitation with lime. Other methods are also described. It would generally be more economical to adopt one of these than to double the filter capacity in order to deal with a bad tank effluent.

The Commissioners do not discuss Scott-Moncrieff's cultivation tanks, Dibdin's coarse contact beds and slate beds, or Travis's hydrolytic tank. In each of these the clear spaces in a precipitation tank or septic tank are replaced by the interstices in a mass of coarse material. The paper refers to the relative merits of free space and interstitial space. Ten years ago the organic colloidal matter in sewage was mentioned in evidence before the Commissioners, and of late years considerable attention has been given thereto. Travis, in the "Hampton Doctrine," contends that the purification process is essentially a physical operation. He has introduced the "hydrolytic tank," which is virtually a combination of a sedimentation tank, a septic tank and an upward flow cultivation tank.

The author has adopted agricultural drain-pipes (circular or octagonal) as a filling material to intercept suspended and colloidal matter. In one recent case he allowed ⅓ sq. ft. of surface per gallon of daily dry weather flow, the cost per acre being about 40*l*. In conclusion the author says:—

"The fifth report has been received in many quarters with keen disappointment. It could hardly have been otherwise in view of the expectation which had been formed of it. On the one hand, those who have pinned their faith to particular methods of preliminary treatment or to certain modes of filtration, are naturally chagrined to find that their views meet with but scanty support at the hands of the Commissioners. On the other hand, there is a large and important section which was not wedded to any particular system, but which ardently hoped for some short and simple formula which should be applicable in all cases. These two have found little ground for satisfaction in the outcome of the Commissioners' work. The report, however, is gratifying to those who have consistently urged that every case ought to be treated on its own merits. It nowhere tells us that one method is 'opposed to nature,' or 'wrong in principle'; or that another is the best, and the only one which should be adopted in all cases. It is, indeed, characterised throughout by a striking absence of sweeping and dogmatic assertion: The Commissioners merely say that a particular method is or is not well adapted for use in certain specified cases. Such opinions are based, not on preconceived views or a prior reasoning, but on a wide and well considered survey of the experience gained in well-nigh every important sewage works in the country. The Commissioners have, in a word, done much towards removing the art and practice of sewage disposal from the region of speculation and experiment, and placing it on a broad basis of experience and fact.

They have given us a common-sense method whereby any two processes or combination of processes may be compared on an equal footing with due regard to all the facts which bear on the case. It is doubtless unfortunate that this method should have required to be illustrated by the aid of a concrete example, for, although the Commissioners themselves lay stress on the need for regard to local conditions, point out again and again that their comparison applies only to a particular hypothetical case, and emphasise the fact that their tables are based on a number of assumptions which as a whole can necessarily hold good only in a very limited number of instances, there is reason to fear that their tables will be regarded and treated in many quarters as final and authoritative statements of fact, and the conclusions based on them as of general applicability. Valuable

Digitized by Google

as the report undoubtedly is to the engineers and others who are professionally engaged in the purification of sewage, it will be a most dangerous document in the hands of those who lack either the time or the patience to make themselves thoroughly acquainted with its contents.

The chief service, however, which the Commissioners have rendered the community is in connexion with the question of rules. They have in the first place swept away that fabric of 'unofficial' but well-recognised rules which has done so much of late years to stereotype practice in sewage disposal regardless of differences in local circumstances and in the composition and strength of the sewage. They have in particular put a stop to the indiscriminate insistence upon land treatment, and to that wholesale waste of public money on storm filters which went on year after year under the old regulations. But they have at the same time rescued the question of sewage disposal from the domination of rules and formulæ, and placed it on its proper footing as a task which demands, now as ever, the ripest experience and the soundest judgment which can be brought to bear on it."

Mr. G. A. Hart (Sewage Engineer, Leeds) also dealt with the fifth report of the Sewage Commission, and pointed out that as the result of the recommendations the Local Government Board had revised its regulations which local authorities were compelled to undertake when seeking borrowing powers to raise loans for sewage works. The Royal Commission considered that the previous regulations had not been sufficiently elastic and that experience had demonstrated that special storm water filters used for purification of storm water only were not efficient. They also considered that the injury which arose to rivers by the discharge into them of large volumes of storm sewage, was chiefly caused by the excessive amounts of suspended solids which such sewage contained, and believed that these solids could be very rapidly removed from the storm sewage by a simple process of settlement. Discussing the recommendations of the Commission, the speaker said that engineering experience through the country demonstrated the fact that in proportion as sewage areas became more and more of an urban character, it became correspondingly more and more difficult to retain any form of separate or even partially separate sewage systems, and it was, therefore, with districts sewaged upon the combined system that they were more particularly interested. There was, however, practically no information of a reliable character on a comprehensive scale yet compiled which showed the relationship of the volumes of rainfall which had passed over storm overflows in the case of combined systems of sewage so as to determine the amount of rainfall which ought to be treated. The Commission had, therefore, formulated a recommendation that each local authority should so arrange its sewage system as to prevent unpurified sewage from passing into a river or stream to an extent likely to cause nuisance. He felt that there were few if any instances of local authorities with a combined system who had any storm overflows constructed upon them which could possibly see any prospect of complying with the conditions of the case, nor could he see how any authority could arrange to prevent unpurified sewage from passing into a river unless the storm overflows were dispensed with—a contingency which was altogether impractical at the present time. An engineering expedient which he thought might be more widely adopted was to arrange settlement tanks so that they might take the excess storm flow which came on the works in the day, and let it out in the night when the flow was low.

The Chairman said he had always considered the treatment described by Mr. Silcock as affording considerable attraction, but the difficulty they met with at Leeds was the tremendous growth of fungi on the surface of the filters which caused choking, and the result was that they decided to get rid of the larger portion of the suspended matter before they passed the sewage on to the filter at all. Mr. Martin had made reference to the slate beds of Mr. Dibdin, but he believed that those who expected that by such means they would digest and do away with almost all sludge would be disappointed. They could not expect the whole of the suspended matter to be liquefied or gasefied; but, on the other hand, the slate bed did offer considerable advantages, for the spreading out of the suspended matter upon a multitude of shelves was more likely to give good and rapid oxidisation then if it were laid in one solid mass in the tank. Touching on the question of the purification of streams the Chairman said probably some disappointment would be felt that they had not done more, but a great deal of delay had occurred in settling points of law. He admitted that they were ashamed of their river at Leeds, but believed that when broad streets would be made on either side, noble buildings would arise, and they would have a small replica of the Thames Embankment in London.

Dr. Gilbert Fowler (Manchester) considered that what was known as the Leeds filter was one of the best and cleanest modes of purifying sewage, and there was a further improvement in regard to what might be termed the purely aerobic treatment of sewage in that they gave a chance for the higher organisms to do their work of purifying. He asked with reference to storm overflows whither it would not be possible in many cases to connect up a number of storm overflow sewers and put some system of catch pits or detritus tanks which would at any rate remove the heavier matters, and which they knew when admitted to rivers formed permanent banks.

Dr. Wilson expressed his pleasure that others took the view which he had held for some time that purely septic tank treatment for sewage was a mistake. In the first place great nuisance might be caused by such treatment; secondly, there had been much exaggeration as to the lessening of the amount of sludge produced; thirdly, the difficulty of dealing with the sludge was greater than in the case of sedimentation tanks; and, fourthly, septic tank effluent was not so easily dealt with in the following filtration.

Mr. P. C. Cowan (Irish Local Government Board) said the question of solid matters had been referred by his Board to the Royal Commission, and the experts gave an interesting report to the effect that the slate bed action was equivalent to ordinary sedimentation, but was not equal to sedimentation with the aid of chemicals.

Dr. Rideal pointed out that the difficulty with sludge was the grease, and the aerobic treatment was one in which the grease was decomposed without any oxygen. It was the hydrolosis of grease. In the Dibden beds and in some aerobic processes they had the worms and other higher organisms which absorbed the grease.

Mr. A. J. Martin agreed with Mr. Hart that it was urgently necessary that engineers and managers of sewage works should as rapidly as possible acquire experience of the actual amount of storm water which reached the works in the course of the day, because it would be a great pity if they went on spending money in laying down filters to deal with six volumes if they had only half that amount.

Mr. Hart did not think it practical to form any system [of connecting their culverts together and receiving the suspended matter. He had not the slightest faith in scum boards or baffling plates for dealing with paper and such substances, for directly there was a rush of storm water a vortex was created in front of the board.

Standards of Purification for Sewage Effluents.

Mr. J. T. Thomson, in the course of a paper on this subject, said that after some years of controversy, it is now generally admitted that the standard of purification required of any town must be fixed with due regard to local conditions. Admitting this, two significant propositions present themselves for consideration:—1. What are the most suitable tests to adopt as standards for judging the purity of sewage effluents? 2. Of whom should the authority consist that will be most capable of estimating the various local factors in order to fix the standard of purification required of each community in an equitable manner? (1) The first proposition he dealt with in two parts:—

(*a*) *Non-potable Streams.*

He argued that a bacteriological standard for effluents is unnecessary in this case, first because such streams already abound in putrefactive bacteria from other contaminating sources, and secondly because the decrease in the number of bacteria used as indicators does not harmonise sufficiently well with the purification registered by chemical tests, tabular results are given illustrating this point. The chemical standard should be based on tests, which are as simple as possible, to avoid conflicting results, which involve the least possible expenditure of time and labour, and which accurately indicate the state of oxidisation of the effluent. The provisional standard suggested by the Royal Commission (5th Report, p. 221) is on the right lines, but should be simplified before the tests are legally defined. Much importance is attached to the removal of suspended solids from effluents; for the majority of places three parts per 100,000 may be an attainable standard, but it would be very costly for some towns to comply. The colloids in sewage have an important bearing on the question; especially where the sewage contains much trade effluents and iron salts, suspended matter is liable to separate out of true and colloidal solution on standing; tabulated results of the percipation process at Leeds confirm these statements, hence the official tests for suspended solids should be carried out immediately or within a short specified time after sampling. With regard to an "aeration test," he suggested that the amount of dissolved oxygen absorbed by a sample of the effluent in twenty-four hours after saturation would be a useful provisional standard. The Royal Commission recommend such a standard for 1, 2, to 5 days, but this renders the test too complex, and it is extremely unlikely that an effluent that passed the test for twenty-four hours would infringe it after five days. The author also criticised the contention that suspended matter should be removed from the effluent before the aeration test. With regard to (*b*) *potable streams*, or principle streams receiving sewage, effluents should not be used for potable purposes, but where this is still necessary such effluents should be passed through sand filters on suitable land and should attain a higher standard. A simple bacteriological standard, such as the number of B Coli, would be of value. He contended that the proposed new central authority should not only determine what tests should be adopted as standards, but should fix the standard to which the effluent discharged by each community must attain.

Value of Intercepting Traps on House Drains.

At the sitting of the Sanitary Inspectors on Monday Mr. A. E. Hudson (Sanitary Inspector of Cheltenham) contributed a paper on this subject, of which the following is an abstract:—"The modern intercepting trap was introduced into the model bye-laws of the Local Government Board in 1877, so that these traps may be said to have been in recognised official use for the last thirty-two years. During recent years objections have been urged against their use, and it has been proposed to remove them in order to ventilate the sewers by the soil pipes. Intercepting traps have been objected to on the grounds:—

(1) That they are practically cesspools for manufacturing sewage gas. (2) That they

Digitized by Google

impede the free flow of sewage: (3) That they frequently cause the drains to block. (4) That they do not effect their supposed object of being a safeguard to the house. (5) That the air inlets to the drains are frequently a nuisance or injurious to health. (6) That they make safe and effectual ventilation of drains and sewers impossible. (7) That they cause a great waste of water.

Provided the traps are judiciously selected and properly fixed they bear no relation to cesspools. Many interceptors are improperly fixed, of bad shape, and much too large for the work they have to perform. Many of the 6-in. traps in use not infrequently contain as much as three to four gallons of water, and one can readily understand that such a trap cannot possibly be cleared with a discharge from a 2-gallon flushing cistern. A good type of 4-in. trap with a 2-in. seal and a 3-in. cascade action will be found to contain only 3½ pints of water. Long experience of these traps has proved their efficiency, and, when properly fixed, they fulfil their purpose well. It is said that the interceptor is frequently the cause of stoppages in the drain. This statement is not borne out by actual working experience. There are some ten thousand interceptors in use in the town of Cheltenham, and not more than 2 per cent. of the stoppages in drains are found to be caused by the interceptor. The cause of most stoppages in interceptors will be found to be due to:—(1) Excessive size and bad make of traps. (2) Improper and careless fixing. (3) Drain laid at improper levels causing accumulation of sewage. (4) The cap on cleansing arm being insecurely fixed, with the result that it is found to have been blown out, and fallen down into throat of trap. (5) Insufficient and irregular flushing of water-closets. (6) A good trap being choked with foreign matter which ought not to have found access to the drains.

The conclusions to be drawn from the foregoing are:—(1) that the disadvantages of the trap have been greatly exaggerated. (2) That interceptors of suitable size and shape, properly fixed, are of great value in preventing sewer gases passing into the house drains. (3) In most cases when the trap causes trouble, it is due to conditions which have no right to exist. (4) The ventilation of sewers through private house drains is too dangerous an expedient for general recommendation, and is not the proper mode of ventilating sewers. (5) The abolition of the trap is not called for on account of blocking of drains.

In the discussion which followed, Mr. White (Bradford) expressed his opinion that the abolition of the intercepting trap would be a retrograde movement and a stumbling-block in the progress of sanitation. He considered that the intercepting trap was specially designed and adapted to checkmate the evil doings of jerry builders and botch-plumbers in rendering premises secure against the impregnation of sewer gas.

Cow Sheds.

Mr. W. Burgess Walker (Leeds) discussed the question of "Cow Sheds; New and Old," in the same section, in the course of which he remarked that in 1880, when he became inspector, Leeds had 350 cow sheds, most of them bad. Of 137 occupied cow sheds within the city at the present time, sixty-three were new, forty-four were rebuilt, and the remainder had at least 600 cubic ft. of air space per cow. This was a minimum for all, but their new sheds had generally 800. The usual dimensions were:—18 ft. from front to back, 4 ft. for front passage, 7 ft. for cow, 2½ ft. for grip, and 4½ ft. for back passage. Windows were made of plain glass to open hopper wise. Air grates, back and front, and ridge ventilators. Floors of brick on edge, laid in cement. Walls smooth and impervious, and end windows also where possible.

Sanitary Inspection of Towns and Dwellings.

Discussing the subject, Mr. R. W. Cass (Surveyor and Inspector, Farnham) said that sanitary inspection must be something more than mere drain inspection. A suggestive ideal was to regard the town as one large dwelling. Just as a house had its various parts and offices requiring different degrees of attention, so had a town its parts needing special treatment. For example, in some districts the intercepting trap might be an absolute necessity; in others it might be a thing to avoid. In some places drains might require constant flushing with water; in others, in spite of the best system of ventilation, they might need frequent flushing with air. Such different conditions proved that the sanitary inspector required to exercise considerable skill and judgment in his daily work. If he distinguished between essentials and non-essentials he would find a few books, if well-kept, sufficient for his purpose. He would find it useful to keep an ordnance map of his district, divide it into equal squares of, say, 1 in. to the acre, and mark each square with the number of houses on each area. By a rough calculation he could thus tell at a glance (*a*) the population per acre, and (*b*) the class of people and property occupying the area. With such data he was reminded at sight of districts likely to require extra scavenging, and where overcrowding or insanitary conditions were likely to arise. A little skilful colouring of this map would also show the position of schools, factories, slaughter-houses, and of places generally where food was stored, prepared and sold. The sanitary inspector did well to remember that the poorer people spend much of their time in the streets and highways, and he should never rest until the congested quarters are the best paved and cleansed. In connexion with the inspection of dwellings, the sanitary inspector required a broad and comprehensive outlook. He must not regard his work from a plumber's point of view, for in that case he might report exhaustively on pipes and drains and yet overlook sanitary defects of a glaring character.

[Our report will be continued next week.]

ASSOCIATION OF TEACHERS IN TECHNICAL INSTITUTIONS.

THE London Arts and Crafts Section of the "Association of Teachers in Technical Institutions" have drawn up the following resolutions embodying the points which they consider of importance in reference to the training of boys in trades and crafts. We print these resolutions in full, merely observing for the present that the suggestions made in them seem in the main to be so sensible and so important that they merit the careful attention of all who are interested in the subject:—

"SUMMARY OF RESOLUTIONS AGREED TO BY THE LONDON ARTS AND CRAFTS SECTION OF THE ASSOCIATION OF TEACHERS IN TECHNICAL INSTITUTIONS.

1.—*General.*

If the standard of English craftsmanship is to be maintained, it is imperative that boys should be trained in the principles and practice of the crafts. At present this type of training is non-existent. The London Artistic Trade and Craft Teachers therefore strongly urge:—

(*a*) That national and local education authorities should provide this training;

(*b*) That the establishment of Day Trade Schools is the only satisfactory method of accomplishing this work.

They further urge that boys trained to some craft have better opportunities of becoming good citizens than boys who are not trained.

The interests of the employers, the craftsmen, and the crafts would be promoted by a constant supply of well-trained youths; the highly-skilled craftsman meets with no opposition on account of his skill from either employer or fellow-craftsman.

2.—*Concerning Apprenticeship and the Need for Trade Schools.*

(*a*) Apprenticeship in London in the artistic trade and crafts has almost ceased to exist, and where it does exist there is no guarantee that boys will be properly taught the trade at which they are working.

(*b*) For reasons of economy masters generally train a 'one-process' boy, and such training is held to satisfy their legal obligations.

(*c*) The Section is of opinion that parents, guardians, apprenticeship societies, etc., fail to appreciate these facts, and it is therefore most desirable that definite information from the trades concerned should be available for their use.

(*d*) The training of boys under the present industrial conditions would be better carried on in Day Trade Schools than in shops.

(*e*) The Trade Schools would discover the boy's natural bent, and by directing it and giving the boy a definite purpose in life, would prevent wastage.

(*f*) The Section is of opinion that time spent in the schools should count as part of apprenticeship, or be accepted in place of apprenticeship, the boy going into the craft as an 'improver.'

3.—*Concerning Opportunities.*

Every parent should have the opportunity of providing a training at a Day Trade School for his children should he desire it. To accomplish this it is necessary (*a*) that there should be established an increased number of Day Trade Schools; and (*b*) that there should be a generous provision of scholarships and free places in Day Trade Schools.

4.—*Concerning the Curriculum in the Schools.*

All the theoretical and practical principles of the craft should be taught in the schools, as far as the age of the boy will allow; public money should not be spent in training a 'one-process' boy.

5.—*Concerning the Teachers.*

It is strongly urged:—

(*a*) That all teachers in Trade Schools should have had workshop experience.

(*b*) That the want of academic or technical certificates should not be a bar to the appointment of a good teacher.

(*c*) That to maintain the supply of craftsmen teachers to give opportunities for training in teaching, and to ensure efficient teaching, assistants should be appointed where classes are large.

(*d*) That heads of Trade Schools and heads of departments should be men of reputation in some trade or profession other than the teaching profession.

6.—*Concerning Committees of Management.*

The Section strongly urges the desirability of appointing Advisory Committees (where such are not in existence) to each Trade School, such Committees to include representatives of employers and craftsmen.

7.—*Concerning Evening Trade Classes.*

Evening Trade Classes have done, and are doing, valuable work, though often at the sacrifice of necessary recreation and sometimes of health. The Section therefore urges the establishment of earlier evening classes for the younger boys, pending the establishment on a large scale of day courses of instruction. At these evening classes there should be adequate provision in the way of scholarships and free places.

(Signed) J. WILSON, President of the A.T.T.I.
P. ABBOTT, Hon. Sec. of the A.T.T.I.
P. A. WELLS, Chairman, London Arts and Crafts Section.
E. J. MINIHANE, Hon. Sec., London Arts and Crafts Section."

THE ARCHITECTS' TECHNICAL BUREAU.

(COMMUNICATED.)

"THE attention of the subscribers to the Bureau, who now number 1,250, is invited to the benefits they may receive in the following matters:—

Inquiries other than those as to building materials and specialities, or for estimates for work in hand, can be made with regard to:—(1) the local capabilities of any neighbourhood for supply of labour, materials, etc., the Bureau having special facilities for rendering these particulars; (2) information *re* builders in any district; (3) the possibility of seeing samples of particular goods and fittings at the Bureau offices, thus avoiding the accumulation of materials at one's office, and also the following up by manufacturers when samples are thus sent, which is often unnecessary.

The Bureau invite inquiries on all subjects, technical or otherwise, and in this matter are desirous that subscribers should avail themselves to the full of its services, no limit

Digitized by Google

being placed on the number of inquiries made, the annual subscription covering this service.

Several interesting new specialities were recently considered by the Selection Committee, amongst them being patent traps for lavatories and baths which, by means of a removable seal, are easily cleansed without having the usual cleaning eye; padlocks of exceptional strength; a new patent fastening for pairs of doors and casements, intended to obviate the usual top and bottom bolts; patent mortise locks and furniture, claimed to do away with the possibility of furniture working loose on the spindle; new patent reinforced concrete slab partition of great strength; a ventilating grate for schools, etc., to supply additional hot air to the rooms; a range combining all the latest improvements, etc."

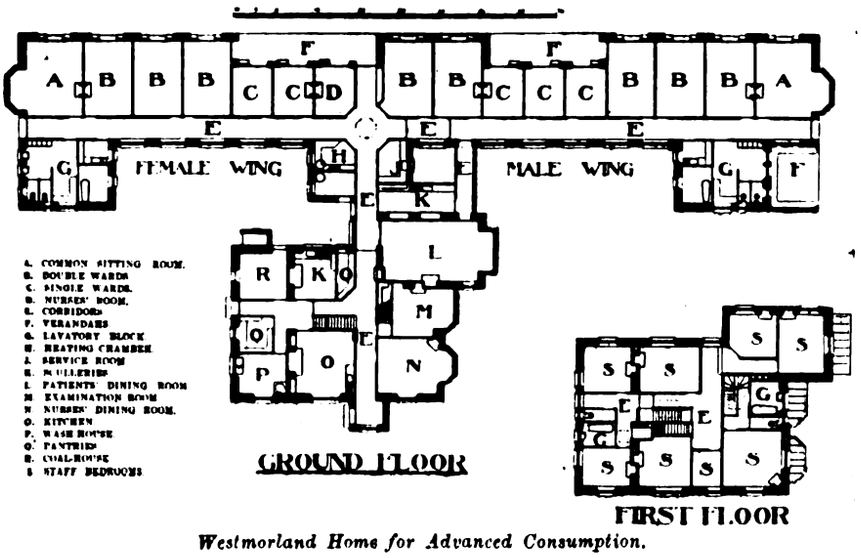
WESTMORLAND HOME FOR ADVANCED CONSUMPTION.

THIS Home is now in course of construction at Meathop, Grange-over-Sands, and will accommodate twenty-one patients, the administrative block being made large enough for future extensions to the wards.

It is built on a site of 25 acres of coppice wood, and the wards face due south with a view over Morecambe Bay; the building material is limestone quarried out of the site, slated with Westmorland slates, and glass roofs to verandahs.

There are thirteen wards, eight for two beds each, and five for single beds, the larger wards 18 ft. 6 in. by 12 ft., and the smaller 12 ft. by 10 ft. A different feature from ordinary hospital planning has been adopted, as in advanced consumption it has been found best to use single or double bedded wards. The wards have been arranged so that they will take at one time thirteen men and eight women, or twelve women and nine men, by placing screen doors across the corridors and doors to wards as shown, and still be entirely separating the sexes. Separate corridors are provided for male and female patients to enter dining-hall.

The ceilings of the wards are 12 ft. high, and the windows are carried up to the level of the ceilings and form dormers in the roof, covered with lead. The doors are a part of the large windows hung folding, and open from each ward out on to verandah or terrace.



Westmorland Home for Advanced Consumption.

Common rooms, 18½ ft. by 14 ft., for each sex are placed at each end of ward block next the entrances.

The walls are finished in Keen's cement and painted, the floors of doloment or other similar substance, the heating is low-pressure, by hot-water radiators (some wards and common-rooms have fireplaces in addition); ventilation by inlets and extractors on roofs.

The contractor for the work is Mr. Wm. Till, of Grange-over-Sands; and the architect, Mr. John Hutton, of Kendal. The cost of the building is about 5,000*l.*

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—Sanction was given to the borrowing by Hampstead Borough Council of 6,670*l.* for paving works, and to Lambeth Borough Council to borrowing 493*l.* and 3,388*l.* for paving works. It was agreed also to lend St. Marylebone Borough Council 14,214*l.* for erection of buildings at depôt, and Shoreditch Borough Council 5,965*l.* for paving and sewerage works.

National Town Planning Congress.—It was agreed that Viscount Duncannon, Lord Alexander Thynne, and Mr. P. A. Harris be authorised to attend as delegates of the Council the Town Planning Congress to be held in August, 1909, on the understanding that the Council is in no way committed as to its future policy with regard to the subject.

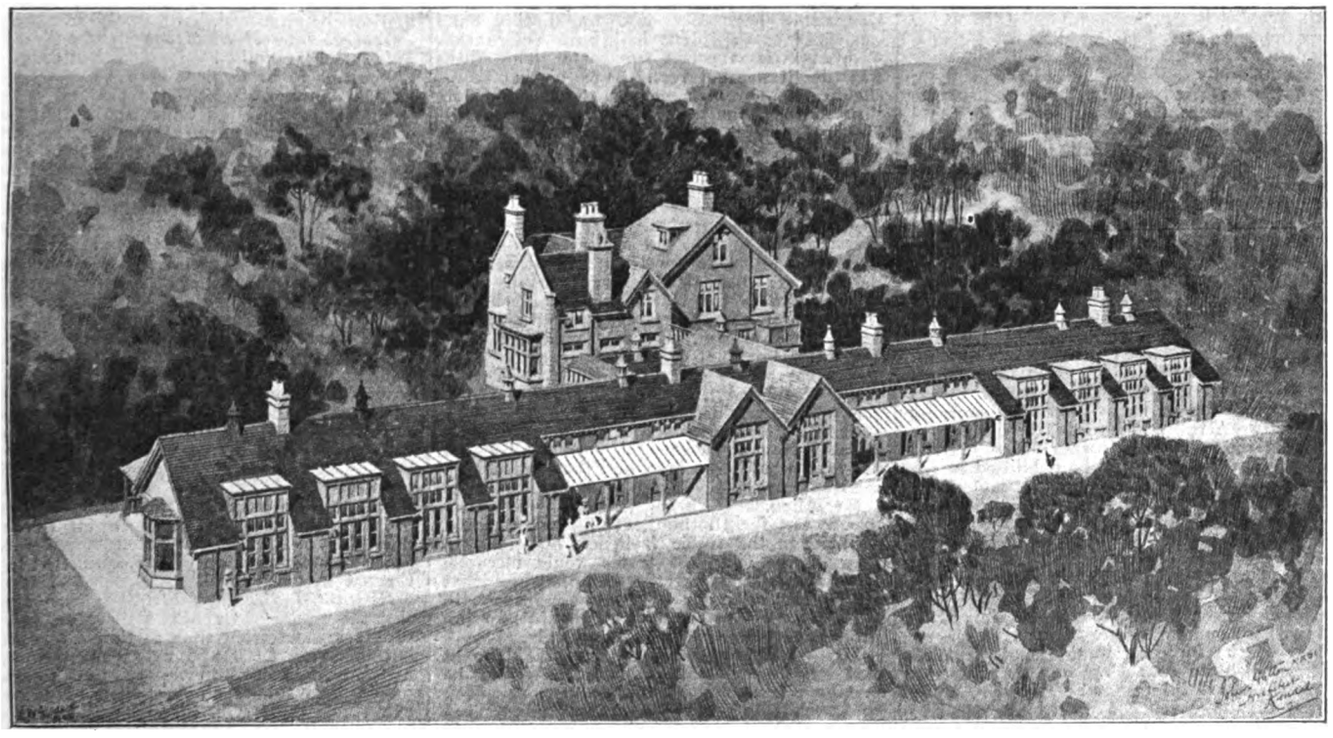
Schools.—It was agreed that the estimates of expenditure on capital account, amounting to 17,486*l.*, and the estimate of expenditure on maintenance account of 737*l.* for the financial year, 1910-11, under standing order No. 359, submitted by the Finance Committee in respect of the erection of higher schools on the Morpeth-street (Bethnal Green, N.E.) and the "Reay" (Brixton) sites be approved.

That the estimate of expenditure on capital account of 3,186*l.*, submitted by the Finance Committee in respect of the erection of manual training, laundry, and housewifery centres on the Berner-street site (St. George-in-the-East), be approved.

That the supplemental estimate of expenditure on capital account of 150*l.*, submitted by the Finance Committee in respect of the formation and paving of Stainton-road, adjoining the "Catford" site (Lewisham), be approved.

That the estimate of expenditure on capital account of 450*l.*, submitted by the Finance Committee in respect of the provision of residential accommodation for the caretaker at the London County Council School of Engineering and Navigation (Poplar), be approved.

That the resolutions Nos. 6, approving an estimate and sanctioning expenditure on



Westmorland Home for Advanced Consumption. Mr. John Hutton, Architect.

Digitized by Google

maintenance account of 2,685*l.*, in respect of the provision of additional exit and stairway accommodation at fifteen Council schools, be rescinded.

That the estimate of expenditure on capital account of 1,255*l.*, submitted by the Finance Committee in respect of the provision of additional exit and stairway accommodation at twelve Council schools, be approved.

That the estimate of expenditure on capital account of 250*l.*, submitted by the Finance Committee in respect of a system of surface-water drainage in connexion with the lower playground at the Bolingbroke-road school (Battersea), be approved.

That twenty clerks of works be employed at the rate of pay of 3*l.* 3*s.* a week each—fifteen for five weeks each, and five for a period not exceeding eight weeks each—to supervise painting works and structural alterations, respectively at Council schools.

Theatres, etc.—Applications relating to the following were agreed to:—

A drawing, submitted by Messrs. F. Matcham & Co., of a cinematograph-box proposed to be constructed at the rear of the gallery at the Camberwell Palace of Varieties, Denmark-hill.

Drawings, submitted by Messrs. F. Matcham & Co., showing the arrangements proposed to be adopted in the erection of a music-hall, to be known as the Finsbury Park Empire, and to be situated at the junction of St. Thomas's-road and Prah-road, Finsbury Park.

Drawings, submitted by Messrs. F. Matcham & Co., showing proposals for the reconstruction of the Hammersmith Palace of Varieties, King-street, Hammersmith.

Drawings and a specification, submitted by the secretary, Marble Rinks, Ltd., with regard to alterations to be made to premises, situate at No. 143A, Clapham-road, consisting of a large and small hall and grounds, for which it is intended to apply for a music and dancing licence.

Drawings showing a proposal to adapt, for use as a concert-hall, premises in John-street and Durham House-street, Adelphi. Amended drawings showing an improved scheme have been submitted by Messrs. Hayward & Maynard.

Drawing of a skating-rink proposed to be erected at Tulse-hill, Brixton. Amended drawings have been submitted by Mr. A. J. Archer.

Drawings, submitted by Mr. B. Crewe, of a theatre proposed to be erected on the eastern side of Shaftesbury-avenue, and the northern side of Broad-street.

Drawings, submitted by Mr. J. G. Buckle, of alterations, consisting of the enlargement of the auditorium, the provision of tea-rooms, alteration to exits, etc., proposed to be executed at the St Gerge's Hall, Langham-place.

Drawings, submitted by Mr. F. A. Tugwell, showing alterations proposed to be executed at the Shaftesbury Theatre, Shaftesbury-avenue.

Drawings, submitted by Messrs. Whitelock & Storr, showing certain alterations proposed to be made to the Windsor Castle Hall, Maxey-road, Woolwich, it being intended to apply for a music and dancing licence for the premises.

New County Hall. The Establishment Committee reported as follows:—

"It has been suggested to us that it would be desirable, in connexion with the construction of the new County Hall, to set back the footway on the Westminster Bridge-road frontage, so as to allow room for a line of traffic between the tramway and the kerb, and the Highways Committee have informed us that they think it essential such a width should be provided for the whole length of the south frontage of the new County Hall. At present under Parliamentary direction the distance between rail and kerb is 2 ft. 6 in. As hitherto proposed, the south-east corner of the new County Hall will be on the existing line of buildings, which are 19 ft. from the nearest tram rail; but the rest of the new frontage will be set back so as to give an increasing space between rail and building amounting to 58 ft. at the south-west corner. The cartoon which we have directed to be exhibited in the Council-chamber makes this clear, and shows that the present facilities for traffic will be in no way impaired by the line adopted for the new building. We have carefully considered whether it is possible to give effect to the expressed wish of the Highways Committee, but we find that the alterations of the plan and building area involved in obtaining the required amount of space at the south-east corner of the building would result in difficulties which we do not see our way to overcome. We have informed the Highways Committee of the conclusion to which we have come.

The award of the arbitrator appointed in the matter of the claim of the Lambeth Borough Council, for the acquisition of its property on the site for the new County Hall, has been issued. The total amount of the claim was 179,138*l.*, and the figure given in the evidence on behalf of the Borough Council amounted 103,000*l.*, approximately. The amount of the award is 81,342*l.* as purchase-money and compensation in respect of the whole estate and interest of the Borough Council.—We recommend that the award of the arbitrator in respect of the claim of the Lambeth Metropolitan Borough Council be referred to the Finance Committee with a view to payment."

Mr. Lewin Sharp suggested that the County Hall should be set back 3 ft. 6 in. towards Holloway's in order that the road might be widened. To his mind it was imperative that there should be a greater distance between the tram lines and the kerb, for, it was to be remembered, the County Hall was to be a monumental building, and it was not wise that it should be cramped in the way proposed. Something would be lost in land, but only a little. The Highways Committee had sent a strong memorandum urging the advisability of increasing the distance between the tram rails and the kerb. The statutory distance was 9 ft. 6 in., and the Council, as the tramway authority, should not allow a lesser distance outside its own County Hall. Elsewhere the Council had spent thousands of pounds to secure an adequate margin between the tram lines and the kerbs, and the statutory distance ought certainly to be maintained in this case. It ought not to be that outside the new County Hall there should only be a distance between the trams and kerb of 2 ft. 6 in. They were building not for the next ten years, but for all time, and once the building was erected it would be seen that an error of judgment had been committed, and posterity would never be able to remedy the evil. Surely it would be better now to sacrifice the additional space of 3 ft. 6 in. No municipality abroad would permit a fine hall to be built in such a narrow space between the kerb and the trams. He proposed that the report be not received.

Mr. Gilbert seconded.

Mr. Norman, Chairman of the Committee, said they were all anxious that the new County Hall should be a monument worthy of London, but there were great difficulties in the way of altering the present arrangements. True there was plenty of room on the site, but to move the building towards Holloway's would be almost impossible now, in view of the progress which had been made with the river dam. The only other alternative was to put the Westminster Bridge-road frontage askew. Indeed, when Mr. Knott made his plan, the river corner was set nearer the road, whilst the Belvedere-road corner was set further back. The assessors, however, strongly objected to this, and used their endeavours to persuade the architect that that was wrong architecturally. They succeeded in convincing Mr. Knott that it would be wrong to have the building askew. The point of view of the Highways Committee was that it was essential that there should be room for a row of traffic in between the kerb and the trams. It was strange that the Highways Committee had only just found this out, especially as the plans had been before the Committee for the last two years. The truth was that it was not really essential that there should be a greater margin. They were not "worsening" the traffic facilities in any way. The only point where the new County Hall touched the Westminster Bridge-road building line was at the point at the corner of Belvedere-road. Hence there had been no infringement, whilst the frontage receded from the building line gradually. If it were necessary there would be no difficulty in setting back the kerb near the river so that vehicles desirous of going to the County Hall could proceed inside the trams and the kerb and turn beneath the central arch into the courtyard. In this case, he would point out that the trams were not close to the kerb because the street was narrow, but because Parliament considered that the trams going across the bridge would best be on the near side instead of in the centre. In putting the Westminster frontage askew the entrance beneath the arch would be askew, and that would be a mistake.

Mr. Allen, M.P., urged that as the new Hall was to last for all time, that attention should be paid to the traffic facilities, especially, in view of the fact that traffic would increase, especially down Belvedere-road, when that thoroughfare became used as an approach to Waterloo. Hence the Council should now improve the traffic conditions if possible.

Mr. White, the Vice-Chairman, said he at first suggested that the difficulty should be met by placing the building askew, and even the architects' objection failed to convince him that that was not the wisest course to adopt.

Mr. Shirley Benn remarked that, from the tramway standpoint, the manager had stated that no more space was needed for the trams.

The proposal not to receive the report was lost; and so the report, as quoted, was subsequently adopted.

London Work for London Men.—Another debate took place with reference to the question of inserting in contracts a suggestion that so far as possible London work should be reserved for London men. Last week the Council decided that there should be a preference in favour of London unskilled and casual labourers, but now it was proposed that the preference should be extended so as to embrace skilled men as well.

Mr. Dew said there should be some preference for skilled men, for there was, if anything, more unemployment of the skilled trades than there was of the unskilled trades. The latest Board of Trade returns showed 17 per cent of London plumbers and 13 per cent. of joiners were out of work.

Mr. Cooper said if the principle of preference were right for unskilled men, it should be applied also to skilled workmen.

Mr. White, Vice-Chairman, pointed out the difficulties in demanding preference. Builders had regular men, and ought not to be asked to dismiss them in order to employ others, of whom they knew nothing.

Mr. Sanders urged that carpenters and joiners were "casual" workmen just as much as unskilled labourers, and therefore it was only right that they should be included. But there was another point. Who was to decide the distinction between what was skilled and unskilled work?

Mr. C. Jackson complained that it was not fair to contractors that such conditions should be imposed upon them at the last moment.

Mr. Jessop complained that there was doubt as to who London men were. He had spoken to some unskilled men classified as Londoners, and was astonished at their accent. Clearly they had not been in London long. It was a mere electioneering dodge which made the moderates vote for restricting unskilled labour for London men.

After further debate it was decided that the preference should be, as far as possible, for "casual and unskilled men," and not skilled men.

Duke of York's School.—In reply to a question, Mr. G. Alexander stated that the Parks Committee had opened negotiations with H.M. Office of Works to ascertain the details respecting the Duke of York's School, which stood in 10¼ acres of land, and which was now advertised for sale.

Hungerford House.—It was decided that expenditure not exceeding 200*l.* be sanctioned for installing a scheme of mechanical ventilation, and for certain minor alterations at Hungerford House.

New Fire-station in Brunswick-road, Bromley-by-Bow.—It was agreed that the supplemental estimate of expenditure on capital account of 300*l.*, submitted by the Finance Committee in respect of preliminary expenses in connexion with the erection of the proposed new fire-station in Brunswick-road, Bromley-by-Bow, be approved.

General Line of Buildings on the Northern Side of Pentonville-road.—The Building Act Committee reported as follows:—

"On January 29, 1907, the Council decided to appeal to the High Court against an order of the Tribunal of Appeal varying the certificate of the Superintending Architect of Metropolitan Buildings defining the general line of buildings on the northern side of Pentonville-road, between Southampton-street and North-street. On December 17, 1907, we reported that a Divisional Court had reversed the Tribunal's decision; that Lilley & Skinner, Ltd., and Mr. T. Lilley, the owners of Nos. 190 to 208 (even numbers only, inclusive), Pentonville-road, had taken the case to the Court of Appeal, and that the Court of Appeal had upheld the decision of the Divisional Court. The case has since been taken to the House of Lords, who dismissed the appeal, with costs. An arrangement has been entered into with the appellants whereby the Council has received 40*l.* in respect of its costs at the hearing before the Tribunal of Appeal. Since the decision of the House of Lords was given an application has been submitted for consent to the erection of buildings to an advanced line. The matter is now under consideration, and a recommendation will be submitted to the Council in due course."

Hydrant Indicator Tablets.—It was agreed that the tender of Griffiths & Browett, Ltd., to supply and fix from time to time as required not less than 1,000 and not more than 3,000 hydrant indicator tablets at the following prices, viz., square single tablets, 11d. each; oval single tablets, 1s. 1d. each; and double or corner tablets, 1s. 4d. each, the price in each case including wooden blocks, iron stays, etc., as required, be accepted.

Digitized by Google

New Buildings, Colney Hatch Asylum.—The Asylums Committee reported as follows:—

"In connexion with the new buildings which have been recently erected at Colney Hatch Asylum for the accommodation of 314 patients, it is desirable that a shelter should be erected in one of the airing courts. The estimated cost of a shelter similar to those which have been erected at Long Grove Asylum is 170*l.*, and we propose to erect such a shelter, charging the cost to the vote of 62,000*l.* for the erection and equipment of the new buildings."

After transacting other business, the Council adjourned.

LANERCOST PRIORY.

THE Priory of Lanercost is situated about two miles to the north of Haworth Castle, in what was once known as the Barony of Gilsland. The barony was granted to Hubert de Vallibus, or de Vaux, in 1156, by Henry II. This priory of Austin Canons was founded by Robert de Vallibus (son of Hubert), and consecrated in 1169 by Christian, Bishop of Canddia Casa. It very probably took about ninety years to build—1169 to 1260—the choir, now in ruins, being the oldest portion.

The west front, of red sandstone, has a very noble appearance, although the design is so simple; but everything is in harmony. The pointed doorway is almost perfect; and it is curious to note that it is not in the centre, the arch mouldings are formed on a square order and spring from circular caps. Above the doorway are thirteen niches; these no doubt at one time contained statues of our Saviour and His twelve apostles. In the gable above the lofty lancet windows within a recessed niche is a finely-sculptured effigy of Mary Magdalen, carrying an alabaster box; and kneeling before her is a small sculptured effigy of a monk in a supplicating manner.

Inserted upon either side of this niche is a coat-of-arms. The priory is cruciform in shape, and has only one aisle in the nave.

H. SCOTT-SAWYER.

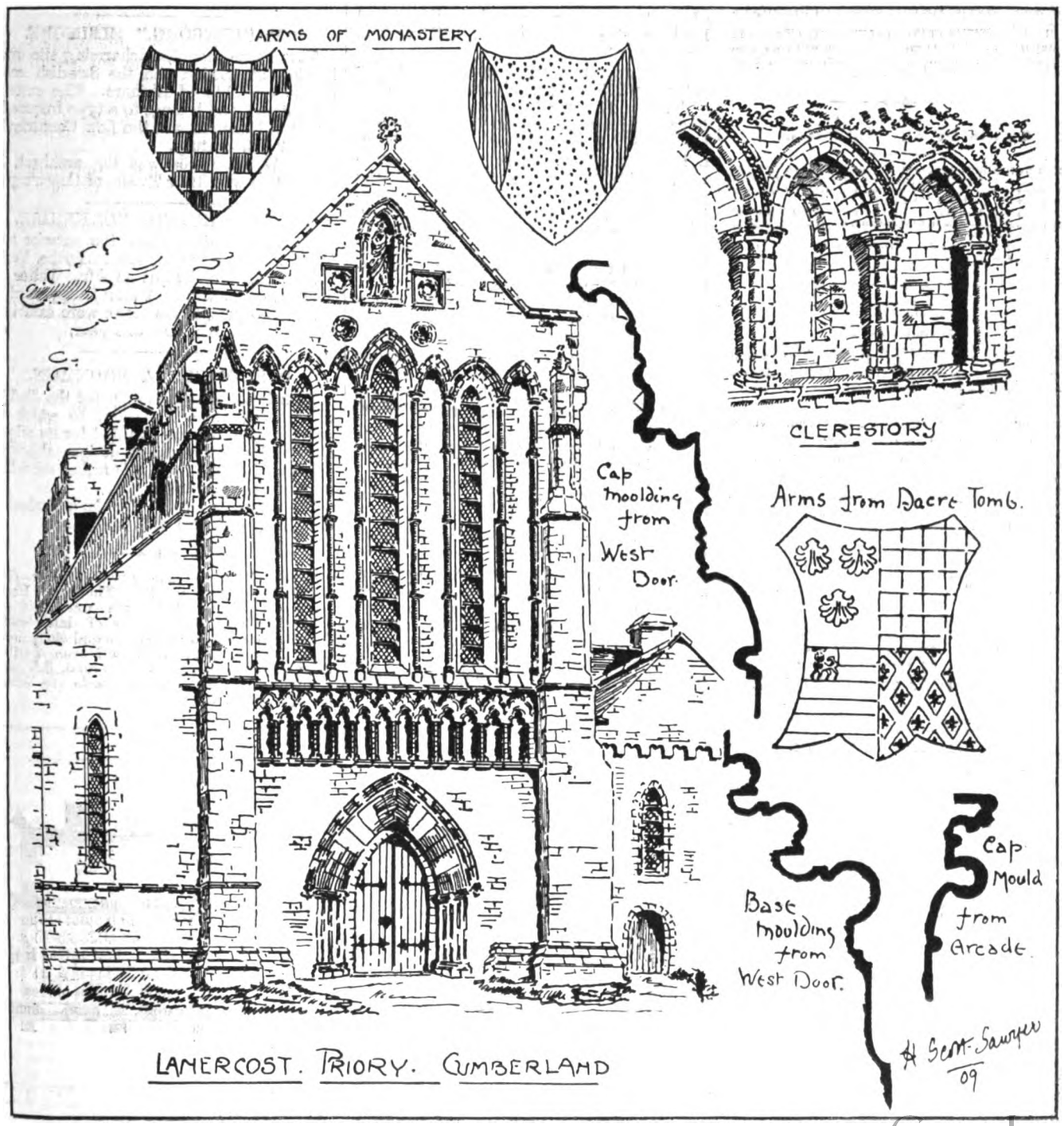
Architectural Societies.

NORTHERN ARCHITECTURAL ASSOCIATION.

The members of the Association held their annual excursion on Wednesday, July 14, when a visit was paid to Selby and the neighbourhood. Among those present were Mr. G. T. Brown, President; Mr. H. C. Charlewood, Mr. C. S. Errington, Mr. J. Oswald, Mr. J. Bruce, Mr. W. Milburn, Mr. J. Hall, Mr. F. E. Dotchin, and Mr. J. B. Cubey. The party proceeded to Selby Abbey, where they were welcomed by the Vicar, the Rev. M. Parkin, who conducted them over the building. Mr. Searle (clerk of works) explained in detail the progress made in the restoration necessitated by the lamentable fire of 1906. Driving to Hemingbrough, the party was met by the Rev. W. P. Wright, who gave a description of the church, which is one of the most interesting in Yorkshire.

PAROCHIAL BUILDINGS, NORTHAMPTON.—Parochial buildings are being erected at Northampton to serve the needs of St. Lawrence's parish. The building will be of Gayton bricks and Bath stone, and will comprise a basement, a kitchen, a large hall, 62 ft. by 37 ft., classrooms, etc. The architect is Mr. M. H. Holding, and the builders Messrs. E. D. Sharman & Son.

PROPOSED POLICE-STATION, SOUTHAMPTON.—The Watch Committee of the Southampton Town Council have received eleven tenders for the erection of a police-station and coroner's court at Payne's-road, Freemantle, and on the Committee's recommendation the Council have resolved to accept that of Mr. William Buck, jun., for 1,118*l.* The work is to be carried out according to the plans and specifications of the Borough Engineer.



Digitized by Google

THE BUILDER

JULY 24, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, JULY 24.

Architectural Association.—Third summer visit, to Ardenrun, near Lingfield. (A House by Mr. Ernest Newton.) The party will travel from Victoria (L.B. & S.C. Rly.) by the 2.25 p.m. train.

MONDAY, JULY 26.

Builders' Benevolent Institution. — Annual general meeting, Bedford-street, W.C. 4.30 p.m.

TUESDAY, JULY 27, AND WEDNESDAY, JULY 28.

The Institution of Mechanical Engineers (Liverpool Meeting, in the Lecture Hall of the Municipal Central Technical School).—Papers as follows to be read: "Locomotives Designed and Built at Horwich, with Some Results," by Mr. George Hughes; "The Advance of Marine Engineering in the Early Twentieth Century," by Mr. Arthur J. Maginnis; "Reinforced Concrete," by Mr. Arthur C. Auden; "Indicating of Gas-Engines," by Professor F. W. Burstall; "The Electrical Operation of Textile Factories," by Mr. Herbert W. Wilson. 10 a.m.

Fifty Years Ago.

FROM THE *Builder* OF JULY 30, 1859.

ARCHITECTURAL COPYISM.

HOLLOWAY AND WEYMOUTH.

SIR,—In the interests of art and honesty, I should like to be informed how it happens that St. Luke's Church, Holloway, by Mr. Lee, not yet quite finished, is so exactly like, externally at any rate, St. John's Church, Radipole, Weymouth, that I should conclude they had been erected from the same drawings. The latter church was built in 1850, and is attributed to Mr. Talbot Bury. I enclose you the means of judging as to the correctness of my assertion. TOO BAD.

*** We had occasion to note a similar case a few months ago, in connexion with a design we had published, not knowing it to be practically a copy of another. At the present time the establishment of architectural copyright seems likely to interferes with this form of sport.—ED.

Illustrations.

A PLATE FROM THE ARCHITECTURAL ASSOCIATION SKETCH-BOOK.

AS noted in another column, we have reproduced this drawing of the Mosque of Sultan Suleiman at Constantinople as an example of the contents of the last volume of the Architectural Association Sketch-Book. Mr. E. A. Henderson, the author of the drawing, sends us the following notes in regard to it:—

"The Mosque of Sultan Suleiman the Magnificent is the largest and, in many ways, the finest erected by Sinan the architect. It stands on the northern summit, and at the edge of, the "third hill" in Stamboul, now seen between the two bridges across the Golden Horn.

Its noble outline cuts the sky-line when viewed from far-way Scutari, nearer Pera and Galata, and also from the Bosphorus, the Golden Horn and the sweet waters of Europe. So, conversely, the vista from the terrace of the mosque is exceptionally fine. I have seen from the Bosphorus the sun sinking directly behind the dome, its beams piercing the windows and making a most glorious picture.

Sinan seems to have appreciated the raising of the floor of the mosque above the ground level to give height to his building and dignity to the entrances.

The interior is nearly a square, measuring externally 225 ft. by 205 ft., and is more full of design and beauty than the earlier mosques. Four massive piers support the main arches, the dome, and superstructure. To the east, a large semi-dome extends to the eastern wall, which is flat on the interior and buttressed on the exterior, and a corresponding semi-dome spreads to the west, as seen on the drawing, but the western wall is deeply panelled and arched on the interior, making this end of the mosque much more interesting architecturally than that facing it.

There are no semi-domes to the north and south, their place being taken by tympana pierced by windows. Three large arches support each tympanum; these again spring from the piers and are supported by two splendid red granite columns; other arches spring from these over the aisles, supporting Turkish pendentives and domes. The central bay is much the larger, and those on either side are curiously hidden away behind the great piers, while other domes cover the four salient angles of the building.

The great granite shafts are about 28 ft. in height. They are said to have come from the Church of St. Euphemia, at Chalcedon, situated on the northern shore of the Marmora, not far from Constantinople, and yet again these were stripped from the Great Gymnasium at Ephesus, where several broken shafts still remain, and others adorn the ruined mosque of Isa Bey, which was built of the spoils of the Diana Temple and Justinian's Cathedral of St. John.

These in the mosque are bound top and bottom by bronze annulets; the capitals are of the usual beautiful Turkish type picked out in gold.

A fine bold cornice supported by brackets and carrying an iron balustrade surrounds the interior at the springing of the main arches and domes. This gives a noble finish to the piers and walls below. The whole of the interior, excepting the marble and granite work, is coloured and has toned down to a mellow hue. Generally it is pleasing to the eye if it were not for the florid painting on the central dome.

The Suleimanejeh is always compared with Sancta Sophia, and justly so, but in making the comparison it must be remembered that the last-named is of two stories, while this building has only need of one; certainly at the western end there are balconies arranged between the large internal buttresses, but these cannot be compared with the great galleries of Sancta Sophia. This makes it a very interesting comparison, for while Sinan gives great height to his arches and aisles he loses most of the poetry and mystery of the earlier building. But it still compares most favourably with any church built since the period when it was erected, and would justify the close scrutiny of modern designers."

"MEULENBORG," ELSINORE.

THIS house occupies a charming site overlooking The Sound and the Swedish coast in the township of Elsinore. The exterior is plastered, and belongs to a type frequently found in Denmark and the Low Countries in the XVIIth century.

Mr. W. D. Caröe was the architect, in association with Herr Tvede, of Copenhagen.

LYTHE CHURCH, YORKSHIRE.

THE illustrations show the exterior and interior of a small church at Lythe, Yorkshire, from the designs of Mr. Walter J. Tapper, of London. A plan is appended.

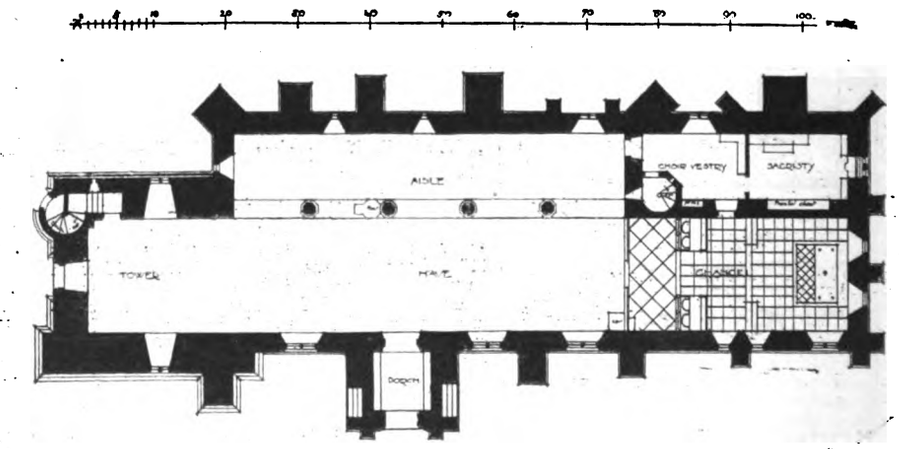
The two perspective views were exhibited at the Royal Academy this year.

DESIGN FOR A FOUNTAIN.

THIS is the design sent in for the *Builder* competition for a Fountain, to which an extra prize of 5*l.* was awarded for its originality and effectiveness of design, although, as we said at the time, it is rather more like a tower than fountain.

The author is Mr. W. Friskin, a Student of the Glasgow School of Architecture.

NEW CHURCH, THORNTON HEATH.—The foundation-stones of the Thornton Heath Spurgeon Memorial Church were laid on July 19. The building is of late Gothic design, with red brick facings and stone dressings. The contract is let to Messrs. Battley, Sons, & Holness, of Old Kent-road, S.E., and amounts to 3,215*l.* The architects are Messrs. George Baines & Son.



Lythe Church, Yorkshire. Plan.

Digitized by Google

AN EMINENT CONTRACTOR ON THE BUDGET.

WE take the following remarks by Mr. Howard Colls, on the occasion of the meeting held at Queen's Hall last week, from the report given of his speech in the *City Press*. As representing the opinion of one of the leading men in the building trade they are of some importance, and Mr. Colls has expressed himself with force and decision. He said that:—

"The building trade was by far the largest individual trade that existed in the country. That being so, it was obvious that anything that promoted unemployment affected the building trade very seriously. The effects of the threats of the Chancellor of the Exchequer were very serious on more than a few trades, and they at once had an enormous effect upon the building trade. People were alarmed, and he could give no end of instances, not only of work abandoned which had practically been started, but of people who were contemplating building, who at once said they would have nothing to do with it. That was some time ago, and now that the Budget had actually been put into black and white still more unemployment had occurred, and the result was absolutely appalling. Of course, the building trade was more or less a precarious one, and at certain times there had been a good many unemployed, but never in his life had there been so much unemployment of good men; splendid bricklayers and joiners—men he would be glad to employ—were walking the streets in order to find a job. That was a most serious matter. There must be a certain margin of unemployment, and the weak and idle men must drift away and cause chronic unemployment; but at this moment there were splendid, industrious, and honest men unemployed in huge numbers, and how they stood it was really wonderful. He believed they were beginning to see the cause, and what he wanted to impress upon everyone present was to try and convince the working man of this particular effect of the Budget. If the Government had come into power with a mandate to so frame their measures as to produce unemployment, they could scarcely have done more than to propose the Budget. Builders would suffer individually, no doubt, and all present would suffer, but they would still have the wherewithal to live; whereas the men to whom he referred lacked bread. It was, indeed, a strange irony that a Government, always talking about improving the social conditions of the workers, should at once proceed to do their best to ruin those workers."

It is desirable that such decisive language as this should not be overlooked, as many people do not seem to realise what the effect may be on the building trade of a Budget which frightens people away from the expenditure of money. Our correspondent, "Alpha," who wished to collect evidence of the abandonment of building schemes on account of the Budget, has had hardly any replies, though we think it probable the evidence exists.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Deptford.—An addition at the rear of No. 112, High-road, Lewisham, to abut upon the eastern side of Malpas-road (Mr. J. Webster for Mr. W. Bindon).—Consent.

Paddington, North.—A porch in front of No. 194, Sutherland-avenue, Paddington (Messrs. G. Prees & Son).—Consent.

Paddington, North.—The reconstruction of a shop front at No. 215, Edgware-road, Paddington (Mr. F. W. Jacques).—Consent.

Wandsworth.—The retention of a wooden cycle-shed in the garden of "Lingmell," Putney heath, Wandsworth (Mr. J. Henry).—Consent.

Strand.†—Two illuminated signs on the shelter in front of the Criterion Restaurant, Piccadilly-circus (Mr. F. Legg for Spiers & Pond, Ltd.).—Refused.

Width of Way.

Bethnal Green, North-east.—A deviation from the plans approved for the erection of buildings on a site abutting upon Cambridge-circus, Minerva-street, Centre-street, and Felix-street, Bethnal Green, so far as relates to an amendment of certain dimensions (Mr. W. E. Wallis for the Governors of the Peabody Donation Fund).—Consent.

Width of Way and Lines of Frontage.

Camberwell, North.—A one-story shop at No. 363, Old Kent-road, Camberwell, to abut upon the north-western side of Charlotte-street (Mr. H. Falkner).—Consent.

Lewisham.—The retention of a stable building at the rear of No. 261, High-street, Lewisham, abutting upon Hither Green-lane (Mr. F. W. Loasby for Mr. F. W. Essex.—Consent.

Marylebone, East.—The retention of an addition to a porch at No. 18, Sussex-place, Regent's Park (Mr. A. Pope for Mr. F. A. Lindsay Smith).—Consent.

Westminster.†—An office building on the site of Nos. 36 and 38, Queen Anne's-gate, Westminster, at less than the prescribed distance from the centres of the roadways of Queen Anne's-gate and the street leading from Birdcage-walk to Queen Anne's-gate (Messrs. E. Runtz & Ford for the Anglo-American Oil Company, Ltd.).—Consent.

Line of Frontage, Projection, and Construction.

Westminster.—A covered way in front of, and an iron staircase at the rear of, No. 86, Knightsbridge (Robersons, Ltd.).—Consent.

Width of Way, Frontage, and Space at Rear.

Rotherhithe.—Buildings on the southern side of Albion-street, Rotherhithe, to abut also upon the western side of Swan-lane (Mr. J. J. Freeland for Mr. A. E. Cast).—Refused.

Height of Buildings and Construction.

Strand.—An iron and glass studio on the roof of a building on the south-eastern side of New Martletts-court, Strand (Mr. W. E. Clifton).—Consent.

Deviation from Certified Plans.

Camberwell, North.—Deviations from the plan certified, so far as relates to the proposed erection of a two-story dwelling-house upon the site of a stable building known as No. 39A, Odell-street, Old Kent-road, Camberwell (Messrs. Field, Sons, & Glasier for Mr. J. Bibbey).—Consent.

Chelsea.—A deviation from the plans approved for the rebuilding of No. 185 and 186, Sloane-street, Chelsea, so far as relates to the erection of an additional story).—Consent.

Formation of Streets.

Lewisham.—A deviation from the plans approved for the formation or laying out of three new streets for carriage traffic on the Crofton-park estate, out of the south-eastern side of Bexhill-road, Lewisham, so far as relates to an alteration in the gradient of Quarry Hill-road (Mr. J. W. Webb).—Consent.

Norwood.—That an order be issued to Messrs. R. Ellis & Son sanctioning the formation or laying out of a new street for carriage traffic to lead out of the north-western side of Denmark-hill, Norwood (Mr. R. A. Sanders).—Consent.

Norwood.—That an order be issued to Mr. Eiloart, sanctioning the formation or laying out of a new street for carriage traffic to lead out of the eastern side of Knight's Hill-road, Norwood, and a new street for carriage traffic to lead out of the northern side of Crownhill.—Two applications: Consent and refusal.

Buildings for the Supply of Electricity.

Norwood.—A water-cooling tower at the premises of the South London Electric Supply Corporation, Ltd., Bengeworth-road, Norwood (Balcke & Co., Ltd., for the South London Electric Supply Corporation, Ltd.).—Consent.

Working-class Dwellings.

Walworth.—Dwelling-houses to be inhabited by persons of the working class, and proposed to be erected, not abutting upon a street, on a site on the north-western side of Date-street, Walworth (Messrs Cluttons for the Ecclesiastical Commissioners)—Consent.

Cubical Extent.

Kensington, South.—An addition to Imperial Court-buildings, Brompton-road, and Basil-street, Kensington, whereby such building will exceed in extent 250,000 cubic ft. (Mr. G. D. Martin).—Consent.

Uniting of Buildings.

City of London.—Formation of two openings at the first-floor level between Nos. 116 and 117, Chancery-lane, City (Messrs. Moss & Jameson for Jordan & Sons, Ltd.).—Consent.

Hammersmith.—The retention of an opening(uniting Nos. 5 and 7, Bridge-road, Hammersmith, at the first-floor level (Mr. C. Johnson for Mr. A. I. Jones).—Consent.

Lambeth, North.—The uniting of Nos. 227 and 229, Westminster Bridge-road, Lambeth (Lockharts, Ltd.).—Consent.

Marylebone, West.—The formation of openings on the sub-ground floor in the party wall between the eastern and western blocks of Manor House, Marylebone-road, St. Marylebone (Messrs. Gordon & Gunton).—Consent.

Marylebone, East.—The uniting of Nos. 294 and 296, Regent-street, St. Marylebone, at the first and third floor levels (Mr. J. J. S. Naylor for Messrs. Lane & Newby).—Consent.

Southwark, West.—The uniting of Nos. 26 and 27, Great Suffolk-street, Southwark (Mr. W. H. Rogers for Mr. W. H. Syers).—Consent.

Dwelling-houses on Low-lying Land.

Newington, West.—Rebuilding of Nos. 100, 102, and 104, Falmouth-road, Southwark, which stand on low-lying land (Messrs. Colman & Knight for the Trustees of the will of G. Broad).—Consent.

The recommendations marked † are contrary to the views of the local authorities concerned.

Engineering Societies.

SOCIETY OF ENGINEERS.

The third vacation visit of the present Session took place on Wednesday, July 14th., 1909, when facilities were given for a party of Members and Associates of the Society, with their friends, to inspect the Greenwich Generating Station, which is situated on the South Bank of the Thames, and occupies a site about 3¾ acres in extent with a river frontage of 240 ft.

Buildings.—The buildings consist of a boiler house and engine room, each 445 ft. long by 80 ft. wide, and auxiliary buildings adjoining. The foundation is a concrete raft 6 ft. thick extending over the whole site, with concrete retaining walls, and the superstructure consists of a steel framework, having an external casing of brickwork with Portland stone dressings.

Chimneys.—There are four chimney shafts, two 180 ft. high and two 250 ft. high above the firing floor, each chimney having an internal diameter of 14 ft.

Pier.—A large pier, T-shaped on plan, projects 118 ft. beyond the river wall and has a river frontage of 200 ft., the width being 40 ft. 6 in. Three electric jib cranes unload coal from the steamers into trucks, and the latter pass over weigh-bridges before discharging into the outside coal bunker of 2,000 tons capacity. From the outside bunker two lines of coal conveyors, each of 40 tons per hour capacity, carry coal to the main bunkers (each holding 200 tons) placed over the boilers. In returning, the conveyors pass under the boilers and carry the ashes to a storage hopper under the pier.

Boilers.—The boiler house contains twenty-four Stirling boilers, each evaporating 16,300 lb. of water per hour, and twenty-four Babcock and Wilcox boilers, each evaporating 18,200 lb. of water per hour. All the boilers are fitted with chain grate stokers and self-contained superheaters, and the working pressure is 180 lb. per square inch. CO_2 recorders can be connected to any boiler. The usual working draught is equal to about ¾ in. of water at full load to ½ in. at half load.

Economisers.—Each pair of boilers has an economiser of 360 tubes. The temperature of the chimney gasses is 280° to 300° Fahr., and of the feed water 230° to 250° Fahr.

Boiler Feed.—The boiler feed is effected by twelve horizontal three-ram pumps driven by direct current motors through worm gearing. Each will deliver 8,000 to 9,000 gallons per hour, the suction and delivery pipes being in duplicate. Two voltages of supply give two speeds to the motors. Make-up water is obtained from an artesian well 8½ in. bore and 350 ft. deep, and is treated in a Harris-Anderson water softener.

Pipework.—The steam pipes are of lap-welded steel, arranged with a fall to the engine separators, giving natural drainage.

Generating Plant.—This consists of four vertical-horizontal reciprocating sets, each of 3,500 K.W. capacity, running at 94 r.p.m., and four turbines (two of the reaction type and two of the impulse type) each of 5,000 K.W capacity, running at 750 r.p.m. Separate surface condensers are provided to each

Digitized by Google

set, the circulating water being drawn from the Thames.

Switchgear. — Of electrically operated remote control type. The main bus-bars can be divided into two portions. There are eight sets of sectional bus-bars to each of which four substation feeders are connected. The eight generators can be run all in parallel, and in two groups of four, or each independently on its own four feeders, or any set or sets may be run separately and the remainder in parallel.

Legal Column

WORKMEN'S COMPENSATION.

THE House of Lords have decided a question under the Workmen's Compensation Act in the case, United Collieries, Ltd., *v.* Simpson, which has been decided differently in the Irish Court of Appeal and the English Court of Appeal. The point was shortly whether a claim can be maintained by the executor of a deceased workman (killed by accident), when the dependant has died before any claim has been made. The majority of the House of Lords has accepted the view of the English Court of Appeal, and decided that the claim survives to the executor, but the House recognised that the result was somewhat anomalous, seeing that there can be do doubt that the intention of the Act was only to save dependants from loss by being deprived of support by the death of the bread-winner. Lord Dunedin dissented from the judgment, and it is a pity his view could not prevail, since he tersely summarised the effect of the judgment of the majority as follows: "It gives a windfall to those who never suffered, at the expense of those who were never intended to make a contribution to such a class." This is the more apparent when it is remembered that the class intended to benefit is expressly and exhaustively defined, and that dependants even include illegitimate offspring. In ordinary cases the executor may represent persons who have in fact suffered loss, but under the Workmen's Compensation Act the absence of any dependant, as in this case, proves that there is no one whose claim was intended to be recognised by the Legislature. It is very unfortunate that the wording of the Act should place on employers burdens never intended, and possibly after the expression of opinion in the House of Lords the Act may be amended.

WATER RIGHTS.

Some interesting points in connexion with water rights were raised in the recent case The Attorney-General *v.* the Grand Junction Canal Company. The action was brought by the Attorney-General at the relation of the Rugby Urban District Council, which was the water authority of the district against the Canal Company for diverting more water from certain streams running into the River Avon than they were entitled to under the Acts of Parliament under which they held their undertaking. The facts are somewhat complicated, and we do not intend to go into them in detail; for the purposes of the present note it is sufficient to say that the predecessors of the defendants took their powers under a local Act of the year 1810, the general scheme of which was that the Canal Company should only take the excess of water in times of flood, and that the streams in question should not be reduced below their average levels, and the Act provided machinery for carrying out these provisions. The works made in pursuance of the scheme were constructed at various dates between 1813 and 1837. The undertaking was transferred to the present defendants in 1894, by another private Act, which contained a recital that the works had been duly constructed in accordance with the Acts, and the transfer was to be subject to "performing and fulfilling all continuing" obligations and liabilities attaching to the original company. The plaintiffs alleged that the reservoirs and works were not made in accordance with the Acts of Parliament, and that in consequence more water passed into the Canal than the Canal Company were entitled to. The Court held that even were this contention made out, as the Urban District Council and their predecessors, as riparian proprietors, owning one or two mills on the banks of the Avon, could waive or grant rights, and as no complaint had been made previous to this action, and the works had been in existence more than sixty years, the defendants must be deemed to have acquired by lapse of time an indefeasible right to the use and benefit of the water taken into the canal, and therefore that as regards the claim of the District Council the action failed.

Then, as to the claim by the Attorney-General suing at the relation of the Council as representing the public the Court decided that where the claim was for an injunction, and especially a mandatory injunction, the Court, where there has been delay, should exercise a discretion, and having regard to the long time that had elapsed since these costly works had been constructed, and the statutory transfer, etc., the judge held that an injunction should not be granted.

THE SMALL HOLDINGS ACT.

One of the first cases under the Small Holdings and Allotments Act, 1908, to reach the Courts has recently been reported—*ex parte* Ringer. The applicant was seeking to have an order made by the County Council of Norfolk set aside. Notice of objection to the order had been made to the Board of Agriculture, and the Board had caused an inquiry to be held, and had confirmed the order. Section 39 (3) provides that an order "when so confirmed shall become final and have effect as if enacted in this Act, and the confirmation by the Board shall be conclusive evidence that the requirements of this Act have been complied with, and that the order has been duly made, and is within the powers of this Act." The applicant was seeking to have the order quashed on the grounds that due consideration had not been given to the provisions of Section 41 (2), *i.e.*, that an undue amount of land should not be taken from any one owner, and the character of the buildings used in connexion with the land taken but not acquired with it should be taken into consideration. The Divisional Court decided that section 39 (3) ousted any jurisdiction the Courts possessed, placing the Government Department in a position of absolute supremacy, and making their order of the same force as an Act of Parliament. The remarks of the judges are peculiarly apposite at a time when the Legislature is tending to set up Government Departments in all directions, and notably under the Finance Bill, as absolutely supreme. The public should carefully consider whether they approve of such a course, especially where, as in the case of taxation, the Government has a direct interest itself, as against the individual in the matters to be decided.

GAS COMPANIES AND TRAMWAY COMPANIES.

In the case of Bristol Gas Company and Bristol Tramways and Carriage Company some questions under the Tramways Act, 1870, had to be decided by the Court on a case stated by the referee, who under the Act is appointed by the Board of Trade to settle differences arising in such connexion between the parties. The Gas Company, under sect. 32, subsect. 5, were claiming additional expenses incurred in relation to the following matters by reason of the existence of the tramway:—(1) Laying a new service-pipe and connecting the same for the first time since the construction of the tramway with a main laid before the construction of the tramway. (2) Repairing altering, or removing a service-pipe laid since the tramway was constructed, the main having been laid before the tramway was constructed. (3) Repairing, altering, or removing a service-pipe or a main laid before the tramway was constructed.

In the first place it was argued that subsect. 5, which gives the company power to recover the additional expenditure, was limited by subsect. 2 to cases where there had been an interruption of traffic. The Court negatived this contention, but held that causing the traffic to be diverted to one line and causing the tramways to slow down or stop would amount to an "interruption of traffic." Then as to the heads of claim set out above, the Court held that the Gas Company were not entitled to claim additional expense for laying new service-pipes, but could claim for connecting them with the existing mains. As regards 2, that the claim could not be made, but that under 3 the claim was good. The judgment appears to proceed on the principle that the claim should be confined to the Gas Company's system as it existed at the time the tramway was constructed, alterations in the system in connexion with houses already supplied being within the section, but that an extension by feeders or service-pipes to new houses or houses of an altered character would not be within the Act.

The point which caused the Court the most difficulty was whether drilling the main laid before the tramway was constructed in order to connect a new service-pipe, *i.e.*, a service-pipe laid for the first time, was an alteration of the main, but the judge held that the section would include this also.

AGENTS AND BY-LAWS.

A curious point arose in the case Kershaw *v.* Brooks (current *Law Reports*). The respondent, who was a plumber, was summoned for causing a waste-pipe from a sink to discharge into the hopper head of a rain-water pipe in breach of certain by-laws made by the London County Council under the Metropolis Management Act, 1855, also for having altered certain pipes communicating with a sewer without depositing plans according to another by-law.

The respondent had been employed to do the work by the owner of the house, who happened to be a builder. The magistrate held that the work had been done for the owner by his order, and that the information should have been laid against the owner and the Divisional Court, as there was nothing in the case to show that the respondent did anything more than carry out the orders given to him by the building owner, confirmed this decision.

The by-laws in question speak of "any person who shall construct or reconstruct," and "every person" who shall reconstruct or alter; but the Court, on the evidence that the respondent was only carrying out the orders of the building owner, held that there was nothing in the by-laws to render him liable. The by-laws imposing such obligations under penalty on mere agents, the Court said, would have to be explicit.

MINERALS.

Somewhat opportunely a case has again come before the Courts (George Skey & Co., Ltd. *v.* Parsons) which illustrates the difficulty of ascertaining what is intended by the word "minerals"; but, as in the generality of the cases, the meaning of the word had to be determined in connexion with a conveyance of property. The plaintiffs were mine owners who held a certain coal mine, and the conveyance from the defendants contained the words "also all other mines, veins, beds, or strata of coal, ironstone, and pot pipe and fireclay, and all other mines and minerals lying and being under" the defendants' land. The defendants in carrying on certain building operations had dug foundations in the clay and sandstone and had displaced clay and stone in making a road, and the plaintiffs were applying for an injunction to restrain them from removing clay or rock and stone as being "minerals" comprised in the conveyance. Mr. Justice

Digitized by Google

Swinfen Eady, who reviewed all the decided cases, found that the clay was not brick earth commercially workable; it was of inferior quality and mixed with stones and pebbles, the removal of which if effected would prevent it being worked at a profit. The stone was unfit for building purposes. The clay formed part of the surface, that being a circumstance applied as a test in some of the cases. In these circumstances he held that neither the clay nor the stone passed with the grant of "mines and minerals." The learned judge remarked that the difficulty lay not in defining what the law was, but in applying it. The Legislature in the Finance Bill are forcing this difficult question upon those who come within its provisions in an even more acute form, for although there are decided cases which form some guide as to what is included in the term "minerals" in connexion with conveyances and certain statutes, it does not follow that the same meaning would attach to the word in connexion with an assessment for fiscal purposes. The Commissioners who are created the authority under the Bill would seek to give the word its very widest interpretation, and the above case shows that in certain circumstances clay and stone would be deemed to be "minerals." If these substances are minerals nearly every owner of land may find himself liable to a tax on minerals, and the modifications promised in the Bill will be looked for with anxiety.

HOUSE REFUSE.

The question of what is "trade refuse" and what is "house refuse" within the meaning of the Public Health (London) Act, 1891, has been again before the Courts in the recent case, J. Lyons & Co. *v.* Mayor, etc., of London. The Divisional Court found some difficulty in determining this question in the case, Mayor, etc., of Westminster *v.* Gordon Hotels (see the *Builder*, April 14, 1906), and gave leave to appeal from their decision, as in that case there was a cross summons by the local authority under sect. 33 of the Act, raising the question whether or not the refuse was trade refuse. The Court of Appeal held, however, that there was no appeal on this point (see the *Builder*, May 11, 1907), and the House of Lords affirmed that decision (the *Builder*, March 14, 1908). The result is that the decision of the point rests with the Divisional Court, a fact deplored by the judges who form that Court. In Lyons' case the refuse in question was similar to that in the Gordon Hotels case—ashes, clinkers, coffee grounds, a little newspaper, some cabbage leaves, tea leaves, potato parings, etc., but not scraps of food, as these were given away. In the Gordon Hotel case some doubt was expressed by the Lord Chief Justice as to whether the Court would have decided that this was "house refuse" if it had come from a restaurant where there was no living accommodation, and apparently relying upon this distinction, the Alderman had held this not to be "house refuse," as no person slept on the premises in question occupied by the appellants, which were simply used as a restaurant or tea rooms. The Divisional Court decided that he had misdirected himself, as on the decided cases it could not be held that refuse produced solely in carrying on a trade must necessarily be "trade refuse." The refuse in question being "house refuse" in character, the case was sent back with a direction to convict the sanitary authority under sect. 30 of the Act.

BOOKS RECEIVED.

VISITORS GUIDE TO WESTMINSTER ABBEY. By Francis Bond. Pp. 86. (Henry Frowde. 1s.)

BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND. By R. W. Billings. Part XIV. (Edinburgh; T. N. Foulis. 1s.)

PORTLAND CEMENT. By A. C. Davis. Second Edition, revised and enlarged. (Woodford Fawcett & Co. 15s.)

Competition News.

HOUSES FOR THE WORKING CLASSES.

In the competition recently invited by the Atby Urban District Council for designs of houses under the Housing of the Working Classes Act, Mr. James F. Reade, A.M.Inst.C.E., of London, was awarded first premium in the three classes.

MOSAIC PANELS, OLD KENT ROAD LIBRARY, S.E.

The Southwark Public Libraries and Museums Committee report the receipt from Mr. T. A. Cook, Upper Manor (the artist whose designs were placed first in the recent competition), of the full-size cartoons for the two panels at the Old Kent-road Library, from which the mosaics will be fixed up, and have approved same. The Committee have also considered an estimate from Mr. Cook, amounting to 35*l.* each panel for translating the cartoons into mosaic. Mr. Claude Batley, A.R.I.B.A., the architect for the library, advised the Committee that the estimate was a reasonable one, and that the subjects are likely to be treated with more sympathy and care by Mr. Cook than would be the case if the panels were placed in the hands of a firm who had no interest in the subject. Mr. Cook's estimate has accordingly been accepted.

Master Builders' Associations, etc.

LEEDS MASTER BUILDERS' ASSOCIATION.

The Leeds Master Builders' Association, at a recent meeting, considered the provisions of the Housing, Town Planning, etc., Bill prohibiting the erection of back-to-back houses. There was a general expression of opinion that the strictures upon such erections which have been made in many quarters are not applicable to the style and character of the houses erected in Leeds, and that the opponents of such houses do not appreciate the high standard and complete sanitary arrangements which such property affords. Several members pointed out that it would be disastrous if any hindrance to the erection of dwellings at a reasonable cost was imposed in towns where land is freehold, as rents are necessarily based on the capital invested in the purchase of land as well as in the erection of the buildings. Any increase in rents would have an important bearing on the housing question, and would be calculated either to increase the burden or decrease the comfort of the working classes. The members felt that the matter had received full consideration at the hands of the Leeds Corporation, and from their practical knowledge, as builders, bore testimony to the fact that they were not aware of any town in England where the working classes are so cheaply and efficiently housed as in Leeds. A hope was expressed that the Corporation would be entirely successful in their efforts to obtain either a substantial amendment or absolute withdrawal of the provisions of the Bill on this matter, and it was unanimously agreed to give assistance in any way which the Corporation might deem expedient or helpful.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Playground Site.—A month ago 5,000*l.* was voted for the acquisition of land, south of the Thames, to enlarge a school playground. Now it was decided to acquire a smaller area at a cost of 1,650*l.*

The Furzedown Site, Wandsworth.—A supplemental vote of 160*l.* was passed, in addition to the 730*l.*, for the quantities, etc., *re* erection of new training college for 264 women, and a hostel for forty-eight students, and the adaption of existing house for fifty-two students. In connexion with the erection on the site of a secondary school for 456 girls, and the acceptance of the tender of 32,767*l.* of Messrs. J. & C. Bowyer, the Buildings Committee now reported:—"From an examination of the tender and quantities submitted by Messrs. Holliday & Greenwood, Ltd., whose tender, based on the use of Portland stone for doorways, etc., is next to that of Messrs. J. & C. Bowyer, Ltd., it has been found that their alternative estimate providing for the use of terra-cotta is lower than that of Messrs. Bowyer for that material. The quantities submitted by Messrs. Holliday & Greenwood, Ltd., have been examined, and the errors against the Council and the contractors amount to 61*l.* 2s. 9d. and 5*l.* 8s. 5d. respectively. The amount of the tender as corrected by the deduction of the net errors in the quantities, viz., 55*l.* 18s. 4d., is 32,475*l.* 1s. 8d. In addition to the amount of the tender, provision must be made as follow:—Possible extras (2½ per cent.), 811*l.*; clerk of works (2 per cent.), 649*l.*; quantities and lithography, 47*l.* 8s. 5d.; furniture, 998*l.* The total expenditure involved is, therefore, 35,404*l.* 10s. 1d. The cost per place, calculated on the builders' tender, is 71*l.* 4s. 4d., and the total cost per place, including possible extras, supervision charges, etc., is 77*l.* 12s. 10d."

Messrs. Holliday & Greenwood's tender was therefore now recommended for acceptance.

Garden-street, Stepney.—School premises are to be adapted, at a cost not exceeding 237*l.*, as temporary accommodation for ninety-five physically defective children.

Heating Works.—Tenders as follows were accepted:—

Fulham: Halford-road.—Wenham & Waters, Ltd.	£237 0 0
Lewisham: Holbeach-road.—Brightside Foundry and Engineering Co.	207 0 0
Islington: Upper Hornsey-road.—C. Kite & Co.	335 0 0
Vittoria-place.—Comyn Ching & Co.	165 15 0
Buckingham-street.—L. Norden	97 10 0
Stepney: Trafalgar-square.—J. Yetton & Co.	79 15 0

Repairs to Heating Apparatus.—New tenders were invited for the schools in Bermondsey, Clapham, Rotherhithe, and Wandsworth, that of Tilley Brothers, on the schedule prices, less 6 per cent., being recommended.

Marylebone Grammar School.—For repairs and painting, the tender of H. & E. Lea, 290*l.* (estimate 305*l.*), was recommended.

Painting School Exteriors.—The subjoined tenders were accepted:—

Paddington: Droop-street.—Bristow & Eatwell	£258 0 0
Bermondsey: The "Paragon."—H. Bragg & Sons, Ltd.	124 10 0
Riley-street.—W. Prior & Co.	169 0 0
Bethnal Green, S.W.: Abbey-street.—R. Woollaston & Co.	58 10 0
Deptford: Lucas-street.—Kirk & Randall	145 0 0
Fulham: North End-road.—E. Triggs	198 0 0
Greenwich: The "Lombard Wall."—Thomas & Edge	139 0 0
Hackney, S.: Homerton Residential (Deaf) and College-lane (P.D. and Deaf).—J. Haydon & Sons	106 0 0
The "London Fields."—J. Haydon & Sons	124 18 0
Haggerston: Maldstone-street.—G. Butters	109 13 0
Shap-street.—G. Butters	132 0 0
Islington, E.: Drayton Park.—Marchant & Hirst	48 0 0
Islington, N.: Upper Hornsey-road.—C. P. Roberts & Co.	128 10 0
Norwood: Rosendale-road.—E. Orpin	112 10 0
Peckham: Ruby-street.—Lapthorne & Co.	108 0 0
Poplar: Bromley Hall-road.—R. Woollaston & Co.	51 0 0
Rotherhithe: Fair-street.—W. Prior & Co.	125 0 0
St. Pancras, E.: The "Stanley" (junior boys).—H. & E. Lea	91 0 0
St. Pancras, S.: Prospect-terrace.—H. & E. Lea	99 0 0
Southwark, W.: Pocock-street.—J. R. Sims	107 0 0
Walworth: Surrey-square.—H. Bragg & Sons, Ltd.	126 10 0
Westmoreland-road.—Lapthorne & Co.	106 0 0
Whitechapel: Hanbury-street.—Vigor & Co.	45 10 0

Detmold-road, Hackney.—For dividing rooms, etc., the tender of W. Silk & Son, 423*l.*, was accepted. Architect's estimate, 445*l.*

Withdrawn Tenders.—Mr. H. W. Langsford withdrew his tenders for painting, etc., at Yerbury-road school, Islington, and Acland school, St. Pancras. For the present no further action is to be taken on the tenders received respecting the work at the schools. In the case of heating works at Gopsall-street, Haggerston, Messrs. Cook & Co. withdrew their tender of 151*l.*, saying the amount should have been 185*l.* The next tender, that of Messrs. Comyn Ching & Co., 191*l.* 10s., was now accepted.

Iron Staircases.—The tender of Messrs. Pierson & Co. was accepted for iron staircases at Waller-road, Deptford, 57*l.* 10s.; Winchester-street, Finsbury, 78*l.*; and Jessop-road, Norwood, 45*l.*

Camden School of Art.—Messrs. Lapthorne & Co.'s tender of 84*l.* accepted *re* dilapidations.

Site Settlements.—Settlements as follows were arranged:—32, Haverstock-hill, freehold, Mrs. R. Cates, 875*l.*; 48, Canterbury-road, Deptford, freehold, J. J. Elliott's executors, 131*l.*

PROJECTED NEW BUILDINGS IN THE PROVINCES.

BARNET.—County school (5,993*l.*). Messrs. J. Parren & Son, builders, Earith, Huntingdonshire.

Bedlinog.—New school (7,000*l.*). County Architect, Mr. D. Pugh Jones, Charles-street, Cardiff.

Carshalton.—The District Council have passed plans for six houses, Blakehall-road, for Messrs. Clements & Hotter.

Chillington.—Additions to St. James's Church. Mr. W. D. Caroe, architect, 3, Great College-street, London, S.W.

Digitized by Google

Clevedon.—Swimming-bath. Mr. H. Taylor, architect, 16, Lower Queen's-road, Clevedon.

Coombe Hay.—Girls' school. Mr. W. F. Bird, architect, Midsomer Norton; Messrs. Cole Brothers, builders, Pleasedown, St. John, Bath.

Cornwall.—County school, St. Burgan. Mr. Sampson Hill, architect, Green-lane, Redruth.

Devonport.—Sunday-school (St. Mark's). Messrs. Hine, Odgers, & May, architects, 23, Lockyer-street, Plymouth; Mr. F. J. Stansbury, builder, Devonport.

Digby.—Enlarging St. Thomas à Becket Church. Mr. W. Bond, architect, Grantham.

Folkestone.—Plans have been passed for rebuilding 8, High-street, for Mr. D. Marx, builder, 73, Penfold-road, Folkestone.

Great Oakley.—Enlarging All Saints' Church. Messrs. Chancellor & Sons, Duke-street, Chelmsford.

Heavitree.—County school and cookery centre. Mr. P. Morris, architect, 1, Richmond-road, Exeter.

Heston and Isleworth.—School, Twickenham-road. Mr. H. J. Baker, Secretary, Heston and Isleworth Education Committee.

Honington.—Additions to All Saints' Church. Mr. T. D. Atkinson, architect, Trumpington-street, Cambridge.

Ilford.—The District Council has passed the following plans:—Five houses, Auckland-road, Mr. H. Hollins; four houses, Mortlake-road, Mr. E. Partridge; two houses, Ashgrove-road, Mr. E. T. Dunn; two workshops and sheds, Lavender Mount Works, Uphall-road, Messrs. Howard & Sons, Ltd.

Lichfield.—Extensions to St. Andrew's Church, Great Ness. Messrs. A. E. Lloyd & Swell, architects, Dana-chambers, Shrewsbury.

Lowestoft. — Extension to administrative block at Sanatorium (1,786*l.*). Mr. A. G. Beckett, builder, Lowestoft. The Town Council has passed the following plans:—Two houses, Bird's-lane, Mr. H. Grimble; six houses, Mayroad, Mr. A. E. Clarke; warehouse, Till-road, Messrs. Steward & Patteson; five houses, Wilde's Score for the Trustees, Wilde's Charity.

Milton.—Mission buildings (600*l.*). Rev. J. Fowler, St. Cuthbert's, Milton.

Minworth.—Mission hall, St. George. Rev. L. Mitchell, Curdworth, Birmingham.

Newport.—The Town Council has passed the following plans:—Business premises, Clarence-place, Mr. A. Swash; three houses, Bryngwyn-road, Messrs. Habershon, Fawckner, & Co.; additions to St. Mary's Lodge, Fields-road, Mr. H. J. Griggs; nine houses, Hamilton-street, Mr. C. J. Fox; three houses, Hawthorn-avenue, and two houses, Linden-road, Messrs. Newland, Davies, & Hunt; six houses, Blenheim-road, and sixteen houses, Warwick-road and Kenilworth-road, also four houses and two shops, Mr. H. Budgen; warehouse, etc., Watchhouse-parade, Mr. W. Gardner.

Salford.—Battery-house and alterations to existing buildings at Frederick-road electricity works (719*l.*). Messrs. Cleworth & Robinson, builders, Salford.

Southampton. — Police-station, Freemantle (1,118*l.*). Mr. William Buck, jun., builder. The Town Council has passed the following plans:—Six houses, Winchester-road, Messrs. Weston & Burnett; four houses, Lumsden-avenue, Messrs. Jurd & Sanders; eighteen houses, Harborough-road, Mr. W. B. Hill; additions to the Royal South Hants and Southampton Hospital, Fenshawe-street, Messrs. Stevens & Co.

Stoke-upon-Trent.—Sunday-school (St. Barnabas), Frederick-street, Rev. H. V. Stuart; skating-rink, Wharf-street, for the Skating Rink Syndicate; three houses, Hartshill-road, Mr. F. Frost; five pairs semi-detached villas, Mr. G. Evans.

Stretford. — The District Council has approved the following plans:—Alterations to houses, Poplar-road, Messrs. W. & T. Lowe, Stretford: ten houses, Reynolds-road, Mr. Thomas Emery: three shops, King-street, Mr. Myer Kersh; infant school, Seymour-grove, for the Stretford Education Committee.

Twickenham.—Mission church (All Saints), Upper Twickenham (1,000*l.*). Rev. G. D. Castledon, Vicar of Holy Trinity Church, Twickenham.

METROPOLITAN ASYLUMS BOARD.

THE following matters were dealt with at the fortnightly sitting of the Metropolitan Asylums Board on Saturday last week:—

Northern Hospital.—Sanction was received from the Local Government Board of the plans for the provision of additional lavatory accommodation at the Northern Hospital, and it was agreed to ask the sanction of the Local Government Board to the plans for the repairs to the skittle-alley, and the erection of a shelter over it.

Eastern Hospital.—It was agreed to ask the sanction of the Local Government Board to the execution by the Euboeolith Patent Flooring Company, of 3, Victoria-street, S.W., of the flooring repairs at this hospital without tenders being invited.—It was further agreed to appoint Messrs. W. T. Farthing & Son to take out the quantities in connexion with the provision of isolation accommodation in Temperance Ward of the hospital at a commission of 2½ per cent. on the amount of the accepted tender.

Children's Infirmary.—A return was submitted showing that the total cost of laying out the Infirmary grounds was 1,769*l.* 2s. 5d.

SANITARY STATE OF ENFIELD.

DR. S. W. WHEATON'S Report to the Local Government Board on diphtheria in the Enfield Urban District leaves it somewhat doubtful whether the disease has been due to defective drainage or to other causes, the evidence of facts being somewhat conflicting. There seems no doubt, however, that there is much room for improvement in drainage and in other matters connected with the health of dwellings. The following passages are extracts from Dr. Wheaton's Report:—

"In the central and eastern portions of the urban district the majority of the working-class dwellings are arranged in rows with yards or gardens in the rear. About half these houses were built from twenty to thirty years ago, when there was a great era of speculative building. The condition of a large proportion of the older houses well illustrates the evil results of uncontrolled speculative building. Hundreds of houses are composed of sandy bricks, which are crumbling away, and absorb and hold the damp and moisture. The material between the bricks contains little, if any, lime; it can be picked out, and crumbles away with the touch, so that the whole house could be picked to pieces with ease. . . . Frequently the down pipes reach only to about 8 ft. or 10 ft. from the ground, and the rainwater is discharged on to the house wall. Cracks from settlement in house walls are not infrequent. Owing to these conditions dampness of houses is very pronounced, especially of the back rooms and the back kitchens or sculleries. Frequently the paper peels off the walls in the bedrooms, and in the back kitchens and sculleries the walls are often streaming with damp and covered with mould. Wet rot in boarded floors and dampness of brick or tiled floors are common."

"In some parts of the district the street sewers are very defective, and not self-cleansing. All the sewers are hand flushed, and no automatic flush tanks are provided on them. As to the ventilation of the sewers, covers with open gratings were originally provided as air inlets, or exits, at the manholes, but these have been closed up by iron discs. Ventilation shafts have been provided in places to serve for exits to foul air. If the sewers were self-cleansing and had properly constructed manholes these would probably be sufficient. Inspection of the sewers is provided for by manholes. Unfortunately these have been very badly constructed in many instances. Their bottoms are often flat, or, if there is a channel, it is of rough cement only; frequently tiled or smooth cemented inverts are not provided. In the absence of sufficient fall and flow for self-cleansing purposes filth is held back by the rough channels and floors, and accumulates in the manholes, so that many are merely catchpits containing decomposing filth. . . . The house drains are constructed of socketed pipes, but in many instances in the older houses clay only has been used for the joints, so that filth escapes from the drain into the subsoil. Frequently the drain passes under the house. . . . In many cases the drains have not a proper fall, nor is there any means for inspecting their condition. They are connected directly to the sewer without intercepting trap or inspecting manhole. . . . The house refuse is chiefly collected in movable receptacles. Galvanised bins are supposed to be provided for this purpose, but in many instances in the poorer parts of the district these have been broken or destroyed, and the refuse is thrown about in heaps in the yards. In many places the inhabitants are so careless that they will not trouble to throw refuse in the bin, but toss it out anywhere about the house, where it accumulates, and causes much nuisance."

It will be seen that there is enough in these statements to account for the fact, as stated on the front page of the Report, that "this district has not a good record as regards the prevalence of infectious disease."

METROPOLITAN WATER BOARD.

AT the fortnightly sitting of the Metropolitan Water Board on Friday last week the following, amongst other matters, were dealt with:—

Beachcroft Reservoir.—The adjourned report of the Works Committee, recommending an expenditure of 5,000*l.* for the necessary works for the connexion of the lower portion of the Beachcroft Reservoir at Honor Oak with the system of low-pressure distributing mains in Rye-lane, Peckham, was agreed to.

Mechanical Filters.—The Water Examination Committee reported having accepted four tenders from different firms for mechanical filter apparatus, and it was stated that these would be installed at Hampton, and it was hoped that experiments would be commenced in the course of a month or two.

Lee Valley Drainage.—A lengthy report was submitted by the Works and Stores Committee relative to the question of the Board meeting the cost of providing additional sewage works at Sawbridgworth and Harlow. The matter was first debated in June of 1906, when the Board decided to inform the Local Government Board that, subject to the consideration of special circumstances in any particular case, the general view of the Board was that if local authorities efficiently maintained and carried on such works of sewage purification as are usually required by the Local Government Board when sanctioning loans under the Public Health Act, 1875, no additional means of purification would be required by the Water Board from those local authorities. The Sawbridgeworth District Council are now asking the Board to contribute 618*l.* towards the cost of the scheme which they hold were made more costly by the Local Government Board having in view the fact that the effluent would go into the river above the intakes of the Water Board. The Works Committee consider, however, that there is no circumstance in the Sawbridgeworth case which should lead the Board to depart from their declared policy in June, 1906.—It was agreed to reaffirm the declared policy.

Reinstatements of Roads.—The same Committee reported having considered the requests of numerous local authorities that they should be permitted to undertake the reinstatement of trenches broken by the Board, and recommended:—"(*a*) That in future the Board do deal with the reinstatement of roadways strictly in accordance with the statutory powers contained in the Metropolis Management Act, 1855, and the Waterworks Clauses Act, 1847, and that the authorities be informed accordingly; (*b*) that an agreement on the lines approved by the Works and Stores Committee on March 4, 1907, containing an approved schedule of prices applicable to the reinstatement of roadways, be entered into with such of the extra-metropolitan authorities as have expressed their willingness to adopt this course; (*c*) that with regard to such of the extra-metropolitan authorities as are unwilling to enter into an agreement as outlined in the foregoing resolution, the Works and Stores Committee be instructed to obtain and submit tenders for carrying out the work by contractors on behalf of the Board; (*d*) that the Deputy Chief Engineer be instructed to report to the Works and Stores Committee upon the cases of those extra-metropolitan authorities where in his opinion the arrangements with regard to the reinstatement of roadways within their areas are satisfactory."—The recommendations were agreed to.

Work at Southgate.—It was agreed to approve of an estimate of 3,163*l.* for the laying of mains at Southgate to provide for the growth of the district.

Office Alterations.—Expenditure of 400*l.* was sanctioned for alterations and repairs at the Pimlico offices, Commercial-road.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Repair to Offices.—It was agreed to clean and repair the various offices of the Public Health Department during the recess, at an estimated cost of 200*l.*

Improvement of Bishopsgate-street.—The Improvements and Finance Committee submitted a plan for widening Bishopsgate-street at its junction with Cornhill, and for kanting the corner thereat, on the rebuilding of No. 61, Cornhill. It was agreed to approve the plan and to refer the matter back to the Committee to negotiate for setting back the premises to the said line of improvement, and to report.

Proposed New Bridge.—The report of the Bridge House Estates Committee on the subject of the reduction of the gradients of Southwark Bridge, at a cost of 230,000*l.*, and the building of a new bridge, at an expenditure of 1,646,983*l.*, was presented. Mr. Deputy Algar, the Chairman of the Committee, in moving the adoption of the report, said that the need for some additional artery was shown by the use to which the bridges were at present put. The number of vehicles daily crossing the Tower Bridge was about 14,000; London Bridge, 19,000; Southwark Bridge, 4,000; and Blackfriars Bridge, from 18,000 to 19,000. It was evident, therefore, that the three bridges with a northern outlet required relief. The report of the Traffic Commission indicated the desirability of constructing a new north and south thoroughfare. The success of the schemes set out in the report was dependent on the northern approach. With regard to Southwark Bridge, the present proposal was to improve the gradients on the north and south sides. Any improvement of that bridge would have the result of throwing additional traffic into the neighbourhood of Mansion House Station, and this would not

Digitized by Google

meet with the approval of the Commissioner of City Police. The wards of Vintry, Dowgate, and Queenhithe had considered the report, and passed resolutions, expressing the opinion that the widening of Southwark Bridge should be to a not less width than Queen Street-place, and that the reduction of gradients should be proceeded with at once, adding that the larger question of the new bridge should be left for further information. The cost of complying with their first resolution would be, Mr. Mott advised him, an extra 30,000*l.* When the matter came before Parliament no doubt the London County Council would seek powers to run trams over it, and, if they were successful, this would necessitate a still wider bridge, and a dead end in the neighbourhood. If they obtained such powers they would also be able to dip down and have a station under the roadway. The plan for a new bridge was a suggestion to afford relief to the present City bridges, to meet the rapidly-advancing needs of mechanically-driven traffic, and to carry out the view of the Traffic Commission. As no improvement of such a character could be effected without absorbing a certain amount of building area, it followed that the scheme which will take the least amount of property has one strong recommendation in its favour, and the Committee had that in mind when recommending the scheme D2. If plan D2 is carried out it will much enhance, Mr. Stenning says, the value of property between the north side of the Thames and Cannon-street and in Aldersgate-street, and thus recoup the rates for any loss they may sustain through the demolition of property. The whole of the plans and reports had been submitted to the Commissioner of the City Police, and he was of the opinion that scheme D2 would offer the best solution of the traffic question, as it would leave the heavy traffic of Queen Victoria-street and the eastern portion of Cannon-street unaffected; moreover, the widening of St. Paul's-churchyard would afford a good and direct north line *viâ* Aldersgate-street to Islington, and the crossing of Cannon-street would be (1) at a less congested spot, and (2) directly at right angles, the latter, as he had mentioned in his report, being no small advantage to proper regulation. The scheme also possessed, the Commissioner of the City Police stated, the great advantage referred to by Mr. Mott of suggesting a solution of the tram traffic difficulty. Constant demands were made for facilities for bringing people into the City by tramways, and surface tramways in so congested an area present difficulties so great as to make them, in his view, impossible; but scheme D2 would obviate these difficulties, and make feasible the continuation of tramways to within the City boundary.

Mr. W. Green moved an amendment to the effect that the Court approve only that portion of the scheme that concerned the improvement of Southwark Bridge. He saw serious objections to the larger scheme. There would be a serious loss to owners of property in the neighbourhood during the two years that the new structure would take to build, and the erection of arches would cause a permanent diminution in the value of property in the vicinity. The speaker proceeded to argue that the new bridge would greatly increase the congestion of the City's main east and west thoroughfares—Cheapside and Cannon-street. With regard to the tramways, he thought the proper way to deal with them in the City was to construct a subway under the Thames, and to carry it under the streets, and so on into the City to a spot to be determined by the authorities. Mr. Edwards, in seconding the amendment, expressed the view that a sum of 600,000*l.* should be added to the estimate for the purchase of the northern end of St. Paul's-churchyard. After further discussion a division was taken, and the amendment carried by a majority of twelve, sixty-one voting for and forty-nine against. It was resolved, however, that in view of the smallness of the majority, the Committee be instructed to reconsider the matter, and bring up another report.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnes.—The following plans have been passed by the Council:—Mr. George William Smith, additions to Dunmow Hall, Station-road; Mr. C. Barwell, twenty-seven houses, Palmerston-road; Mr. James Midmer, eight flats, Riverview-gardens; Messrs. W. F. Blay, Ltd., alterations to National Schools; Mortlake—Mr. R. B. Rowell, twelve houses, Larches Estate, Sheen-lane, also laundry in Derby-road; Mr. George Hunt, two shops, Upper Richmond-road.

Bermondsey.—Plans have been passed for Messrs. W. Lawrence & Son, Canal Works, Waltham Cross, N., for the proposed "Uveco" store at Newbald's Wharf, Bermondsey Wall.

Camberwell.—Mr. G. J. Anderson, Poplar, E., and Messrs. Henry Woodham & Sons, Catford, S.E., are to carry out new street works in Kinsale-road, Peckham Rye, and Danecroft-road, at 503*l.* and 835*l.* respectively. Messrs. Lowe & Co., solicitors, 2, Temple-gardens, E.C., have asked permission from the Borough Council to erect buildings at the south-west angle of Kinsale-road, Peckham Rye. This was granted.

Finchley.—The Council has passed the following plans:—Mr. W. J. Sellings, twelve houses, Chandos-road; Mr. R. F. & W. Peachey, six houses, Etchingham-road; Mr. J. Watford, eight houses, Hertford-road; Messrs. Carr & Co., two houses, Windsor-road, Stoneleigh; Mr. C. Brown, two houses, Huttongrove.

Finsbury.—At the meeting of the Borough Council on July 15, a communication was received from the New River Company to the effect that they are contemplating erecting maisonettes on the north side of Bond-street, and asking in connexion therewith that a strip of land they propose to dedicate to the public use be paved. The application was granted. The seal of the Council was affixed to a lease for twenty-one years of the old Vestry Hall, 225, City-road, to the London and Provincial Assurance Company, Ltd. Owing to the extensive repairs which are to be undertaken, the Council is to allow the company one year's rent, viz., 550*l.*

Hackney.—Plans have been passed as follows:—Messrs. Mark H. Judge & Sons, six houses, Fox's-lane; Mr. F. Collins, five houses, Holmbury View; Mr. Percy Roche, seventeen houses, Castlewood-road, and thirty houses, Mountfield-road; Messrs. Edmondsons, Ltd., bank with house over same, and twelve shops with flats over same at Stamford-hill; Mr. G. S. Garey, addition to Messrs. Glover's Dye Works, Shelford-mews, Lea Bridge-road.

Hampstead.—A loan of 6,670*l.* for wood-paving works is to be taken up. Ninety-four gas incandescent street lamps are to be converted into incandescent electric lamps. Mr. C. C. Paine, Hillfield, Haverstock-hill, wrote referring to an order made by the Local Government Board in April, 1903, by which the Council was empowered to acquire lands and buildings on the south-east side of Belsize-avenue adjoining the Town Hall, and asking if the Council had abandoned the scheme, as he was anxious to make his plans for the development of the land. It was resolved to request the Works Committee to negotiate for the purchase of the land for the purpose of erecting additional offices.

Islington.—Materials to the value of 150*l.* are to be purchased for carrying out repairs in Dane-street.

Kensington.—The Borough Engineer having reported that there are upwards of 180,000 Kensington clinker blocks in stock, directions have been given that sixteen streets be paved with the blocks when next in need of repair. The Engineer stated that the blocks in question, which were already laid in various streets where the amount of traffic is limited, had proved very satisfactory, particularly as regards the behaviour of the blocks under conditions of freezing and thawing. The Improved Wood Pavement Company is to renew wood paving in five streets, at amounts varying from 6s. 9d. to 7s. 4d. per super. yard. Messrs. John Barker & Co. have been granted permission to lay water mains across Young-street, Ball-street, and Kensington High-street to connect their various premises with an artesian well proposed to be sunk in Young-street. Messrs. Murray & Co., engineers, 145, Queen Victoria-street, are in charge of the work.

Lambeth.—Nine new gullies, to cost 70*l.*, are to be made in Warham-street, Kennington Park. In consequence of Messrs. G. Candler & Sons, whose tender was accepted for the painting of the South Lambeth Library, having withdrawn owing to an error, Messrs. Maxwell Brothers, Brixton-road, are to carry out the work at a cost of 319*l.*

Paddington.—The tender of the French Asphalte Company, Ltd., for asphalt paving works has been accepted, the estimated cost being 250*l.* The Council have further accepted the tender of the Acme Flooring and Paving Company for renewing with 4-in. creosoted deal blocks the wood paving on a portion of Connaught-road, and for renewing with 5-in. creosoted deal blocks wood paving in Maida Vale.

Poplar.—The Borough Surveyor reports that very little remains to be done to finish entirely the work provided for in the contract for rebuilding and reconstructing the dust destructor. The contract sum was 17,513*l.*, and the net amount of deductions was 381*l.*, leaving a net total of 17,132*l.*

Southwark.—The Electric Light Committee received four tenders for an addition to the generating-station, and has provisionally accepted the lowest, that of Messrs. John Marsland & Sons, York-street, Walworth, at 1,120*l.* An application by Mr. A. W. Cooksey, 6, Adam-street, Adelphi, W.C., for permission to erect an external iron staircase at the premises of Messrs. Down Brothers, King's Head-yard, Borough High-street, S.E., has been granted, as has also an application from Messrs. Cluttons, 5, Great College-street, S.W., for sanction to the formation or laying out of a footway 20 ft. wide on the north-west side of Date-street.

Tottenham.—Plans have been passed as follows:—Mr. A. Leitch, covered stand and additions to existing shelter at Tottenham Hotspur Football ground; Mr. J. S. Stanbrook, four houses, Westbury-avenue; Mr. G. Tucker, four houses, Sirdar-road; Mr. G. W. Rowley, two houses, Falmar-road; Mr. H. Lebus, addition to block T.S.U. Finsbury Cabinet Works, Ferry-lane; additions, boot factory, The Hale, for Messrs. A. W. Flatau & Co.

Obituary.

MR. WATSON.

The death, on July 11, at his residence in Petworth, is announced of Mr. Herbert Edward Watson, F.S.I., aged 63 years. On quitting King's College, London, Mr. Watson became resident agent for the Duke of Bedford's estates in Thorney, Isle of Ely, the sale of which to his tenants by the Duke of Bedford was recently announced in our columns, and was appointed Chairman of the North Level Drainage Commission. In 1884 he succeeded the late Mr. W. J. Clutton as agent for Lord Leconfield's property in Yorkshire, and two or three years afterwards for Lord Leconfield's estates in Sussex. At the close of last year Mr. Watson, through ill-health, retired from business. He was a co-founder and member of the Land Agents' Society.

General Building News.

ALL SOULS' CHURCH, HEYWOOD.

Mr. Frank P. Oakley, architect, of Manchester, has prepared designs for a tower to be added to this church. The tower will stand about 80 ft. high, and is to be built of dressed stone and Yorkshire parpoints, in keeping with the rest of the building.

ROMAN CATHOLIC CHURCH, CHORLEY.

A Roman Catholic church is being built at the north end of this town, on a site off Harpers-lane. Mr. Matthew Honan, of Liverpool, is the architect.

ROMAN CATHOLIC CHURCH, KNOCK, BELFAST.

The new church of St. Columbkille, Upper Newtownards-road, has now been opened. The architects were Messrs. E. & J. Byrne; and the building has a nave 120 ft. long and a total width of 58 ft.

WESLEYAN CHURCH AND SCHOOLROOMS, THORNTON DALE, YORKS.

A new Wesleyan Methodist church and schoolrooms have been erected in Thornton Dale, near Pickering. The structure has been built by Mr. Alfred Barnes, of Malton, from plans prepared by Mr. A. E. Lambert, architect, of Nottingham. The cost incurred amounts to 2,500*l.*

P.M. CHURCH, GAINSBOROUGH.

A new Primitive Methodist Church, to seat 700, is being built in this town. Mr. Harper, of Nottingham, is the architect, and Mr. Elmes, of Gainsborough, the builder, the contract price being 1,750*l.*

CONGREGATIONAL CHAPEL, ONLLWYN.

A Welsh Congregational Chapel is being built at Onllwyn. The chapel itself is planned to seat 620, and a school adjoining about 300. In addition are provided a number of class-rooms, minister's rooms, etc. The contract is being carried out by Messrs. E. Turner & Sons, Cardiff, under the superintendence of the architect, Mr. W. Beddoe Rees, Cardiff. The total cost of the scheme will be about 3,000*l.*

ENLARGEMENT OF A CHAPEL, BRIDLINGTON.

A new chancel has been built to the chapel of St. Anne's Convalescent Home, Bridlington. The addition was designed by Mr. W. S. Walker, York Diocesan Surveyor (of the firm of Messrs. Brodrick, Lowther, & Walker, architects, Hull and Bridlington). Mr. J. H. Hudson, Bridlington, was the contractor for the work, and his sub-contractors were Mr. Preston, stonemason,

Digitized by Google

who, in addition, has executed the marble paving and steps; Mr. Marsh, plumber and electrician; and Mr. Dodgson, slater.

SUNDAY-SCHOOL, DOVER.

It is proposed to build new Sunday-school premises at the rear of Salem Chapel, Biggin-street. Messrs. Worsfold & Hayward are the architects of the new buildings, the total estimated cost of which is 3,000*l.*

METHODIST SCHOOLS, PORTADOWN.

Schools have been erected in Portadown in connexion with the Methodist Church. Mr. J. W. Walby was the architect, and the contractors were Messrs. Collen Brothers.

WESLEYAN SCHOOL, BARGOED.

The foundation-stones have been laid of an English Wesleyan Chapel schoolroom at Bargoed. The building of the schoolroom is part of a larger scheme. There will be an assembly-hall and three classrooms, divided from the hall by sliding partitions, providing seating accommodation for 500 persons. The contract has been let to Mr. John Brown, Bargoed, at 1,290*l.*, and the work is carried out from the designs of Mr. William Harris, architect and surveyor, Bargoed.

SUNDAY-SCHOOL PREMISES, YORK.

The Wesleyan Methodists of York are building a Sunday-school in the Acomb-road district, Holgate township. The premises are intended to provide for the accommodation of from 300 to 400 scholars, and will comprise an assembly-hall, classrooms, library, kitchen, etc. The cost, exclusive of site, will be about 3,200*l.*, and the work has been let to the following contractors:—Brickwork, Messrs. F. Shepherd & Son; woodwork, Mr. G. Mansfield; slating, Messrs. J. Dodgson & Son; plastering, Messrs. Young & Sons; plumbing, etc., Mr. J. H. Shonksmith; painting, Mr. R. Pearson, all of York; hot-water engineers, Messrs. W. Richardson & Co., Darlington. The architect is Mr. T. Monkman.

COUNTY HIGH SCHOOL, DOVERCOURT.

A new County High School is being built at Dovercourt, Harwich. The building, to accommodate 136 scholars, will be principally in red brick, and will be roofed with dark-coloured tiles. The floors and staircases are to be all in fireproof construction. The architects are Messrs. Brown & Burgess, of Ipswich, and the contractors Messrs. Spencer, Santo, & Co., of Felixstowe.

EXTENSION OF DRAX GRAMMAR SCHOOL, NEAR SELBY.

Additions have been made to this Grammar School. The buildings have been erected to plans prepared by Mr. H. B. Thorpe, of Goole, and the contractor was Mr. Walker, of Goole. The work has involved an expenditure of over 8,000*l.*

COUNCIL SCHOOL, LEEDS.

The opening has just taken place of the Hunslet Moor Council School, Leeds, by the Lord Mayor, Alderman F. J. Kitson. The school consists of two blocks, one of which provides accommodation for girls on the ground floor, and boys on the upper floor, the other providing for infants on the ground floor, and containing handicraft, cookery, laundry, and housewifery centres on the upper floor. A central hall has been provided for each department, and the classrooms are mostly arranged to accommodate sixty children. The school has been built with local bricks and stone, under the supervision of the Committee's Architect, Mr. Fred Broadbent. The total cost of the site, buildings, and fittings will be abut 20,000*l.*

MISSION HALL, QUINTON.

A mission hall is being erected in Redhall-road, Quinton. The mission-room has been designed to seat 320 persons, and will be carried out in Mr. Hoyland's system of terra-cotta walls and dressings. The total cost of the building, including heating, lighting, drainage, etc., will be 1,026*l.* Mr. E. Douglas Hoyland is the architect.

MISSION HALL, NEW CROSS.

An unsectarian mission hall is in course of erection in Besson-street, New Cross. The cost of the new building will be 1,300*l.* Mr. J. Halsted Waterworth, of New Cross-gate, is the architect for the work.

GOLF PAVILION, BISHOPBRIGGS.

A new pavilion has been built in connexion with the Bishopbriggs Golf Club. The club-house, built from the designs of Messrs. Stewart & Paterson, architects, contain a dining-room, kitchen, bar, secretary's office, clubroom, ladies' room, &c.

PARISH COUNCIL OFFICES, BARWICK-IN-ELMET.

The Barwick Parish Council have opened offices of their own at Scholes. The premises, in addition to a Council-chamber, provide living accommodation for the assistant overseer. The work has been erected by Mr. G. Wilson, Whitkirk, from designs prepared by Mr. Henry M. Chippendale, architect, of Scholes.

LLANDUDNO TOWN HALL.

The Llandudno Town Council are having the assembly-room at the Town Hall enlarged. The work consists of the construction of a gallery to seat 130 people, raising the capacity to 432 persons. A loan to cover the cost of the work is being applied for, and Mr. A. A. G. Malet, of the Local Government Board, has held an inquiry with respect to the increase of borrowing power which is required. It was stated at this inquiry by Mr. E. P. Stephenson, the Engineer, that one strong reason for putting in the gallery was to improve the accoustic properties of the hall, and prevent the echoes, which were now objectionable.

FACTORY, PORTAFERRY.

A new factory has been erected in Portaferry by Messrs. Thomas Somerset & Co., of Belfast, for the manufacture of linen work. The factory, a one-story building, is 187 ft. by 45 ft., and has been built by Messrs. J. & R. Thompson from the plans of Messrs. Blackwood & Jury, architects. Messrs. John Robinson & Co. being responsible for the sanitary and heating arrangements.

COTTAGE HOSPITAL, HOYLAKE.

The foundation-stone was recently laid of the new Hoylake and West Kirby Cottage Hospital. The building is situated at the corner of Birkenhead-road and Deneshey-road, and will cost about 1,000*l.* The architect is Mr. Edmund Ware, of Liverpool; and the builder Mr. James Merritt, Adelphi-street, Birkenhead.

LIBRARY AND READING-ROOMS, BURSLEM.

The new lending library and reading-rooms at the Wedgwood Institute, Burslem, have been opened. The structural alterations have been carried out by Messrs. W. Grant & Sons, and the decorations by Mr. S. Barlow, the whole of the work having been executed under the supervision of the Borough Surveyor, Mr. F. Bettany.

CONVALESCENT HOME, GULLANE, N.B.

At Gullane the Convalescent Home, Muirfield House, an acquisition of the Royal Edinburgh Hospital for Sick Children, has been opened. The old mansion-house has been pulled down, and new buildings constructed upon the site. Mr. R. S. Lorimer, architect, Edinburgh, prepared the plans, and the new buildings are now completed. They consist of a two-story centre block for administrative purposes, with east and west dormitories, connected by a glazed verandah, which will be used as a covered playground. Each dormitory holds twelve cots. On the ground floor of the administrative buildings are located a large dining-room, the nurses' sitting-room, the bedroom of the superintendent, and on the north side are the servants' quarters, while the upper floor consists of a sitting-room for the superintendent, and the nurses' bedroom accommodation.

PROPOSED COUNCIL OFFICES, COTTINGHAM.

Major J. Stewart, R.E., Inspector to the Local Government Board, held recently an inquiry into the application of the Cottingham Urban Council for sanction to borrow 2,250*l.* for the erection of new public offices, Council-chamber, and surveyors' house. Mr. J. H. Hanson, Surveyor, Mr. Kitching, Architect, and Mr. Watson, Quantity Surveyor, were present. The new buildings consist of Surveyor's offices, comprising strong-room, store-room, and rate office; Council-chamber, committee-room, fire-station, and Surveyor's house, consisting of drawing and dining rooms, four bedrooms, and the usual out-offices. The estimated cost of the erection of the buildings is 1,760*l.*

Stained Glass & Decoration.

SCREEN, CHRIST CHURCH, EPSOM.

The memorial screen erected at Christ Church, Epsom, was dedicated on Tuesday, July 6. The design of the screen was placed in the hands of Mr. Geo. H. Fellowes Prynne. The aim of the architect has been to add to the devotional aspect of the building, in giving to the chancel and altar a veil which, while strong in effect, does not hide the east end. It is a very open-worked screen, and even the main columns, which are of wrought-iron with bronze panels, are pierced. The stone base, which is not very high, and is built of Corsham Down stone, has panels of French and Mexican onyx. The screen is of wrought-iron and bronze, with ornamental traceried panels. The cornice is formed in bronze groined out on either side. Immediately over the central gates rises a cross, 12 ft. in height, carrying the figure of the Saviour, and supported on either side by the figures of the Virgin and St. John. There are also on either side of the Cross angels carrying emblems of the Passions. The gates, composed largely of bronze, are about 5 ft. in width. The screen has been carried out, under the architect's supervision, by Messrs. H. H. Martyn & Co., of Cheltenham.

NEW WINDOWS.

At Mamble Church, Worcester, two two-light memorial windows have recently been placed in the north aisle, the subjects being the Baptist and Our Lord, and the Good Shepherd and David singing the Shepherd Psalm. The work was designed and executed by Mr. H. Gibbons Murray, of London.

Appointment.

WILTON.

The Wilton Rural District Council have appointed Mr. R. A. Skelton, late Surveyor to the Sandgate (Kent) Borough Council, as their Surveyor, and Mr. Sidney Goulden as assistant.

Sanitary and Engineering News.

THE BELFAST SEWAGE PROBLEM.

The *Belfast News-Letter* states that it is informed on reliable authority that the Royal Commission on Sewage Disposal have definitely decided to include the questions of the growth and the nuisance arising from the decay of green seaweeds, and also the relation of the growth of these seaweeds to the pollution of sea water by sewage, in the scope of their general inquiries. For the purpose of certain of the investigations which the Commission propose to make, Professor Letts has been added to the staff of the Commission, and will work in collaboration with their permanent officers.

NORWICH SEWERAGE SCHEME.

On the 14th inst. the laying of the foundation-stone of the pumping-station at Trowse and the opening of the Travis tanks at Whitlingham Farm, which form part of the sewage works of this town, took place. The pumping-station will contain four Roturbo pumps. Three of them are to be operated by suction-gas, and one by electricity supplied by the city's own installation. They will pump through a 36-in. main built of fortified concrete under the Bonner system, and the sewage will be drawn up a distance of something like three miles to an elevation of 90 ft. above the spot where it was received, and it will then be distributed from the tanks. The complete scheme is estimated to cost 48,000*l.*, and the system of disposal adopted is that of Dr. Owen Travis. Mr. A. E. Collins is the City Engineer.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. James E. Sayers & Caldwell, consulting engineers and electricians, have removed their offices from No. 157 to 190, West George-street, Glasgow.——The offices of *Acetylene* have been removed from 46, Southampton-buildings, to No. 30, Red Lion-square, W.C.

BRIXTON SCHOOL OF BUILDING.

Mr. H. D. Searles-Wood, F.R.I.B.A., and Mr. William Williams have been appointed members of the Advisory Sub-Committee of the Brixton London County Council School of Building. Mr. Williams's election is to represent the masonry craft, whilst Mr. Searles-Wood replaces Mr. Atkin Berry, who has resigned.

BRITISH MUSEUM: ANNUAL REPORT.

The Trustees have just issued their Account of Income and Expenditure (special trust funds) for the year ended on March 31 last, with other official returns for the period 1903-8. In 1908 the visitors were 743,413 in number, the visits on Sundays being 74,324, showing large increases as compared with the totals for 1906 and 1907, but decreases as compared with those for 1903-4-5, the increase being in respect of the departments of manuscripts, sculpture, Egyptian and Assyrian antiquities, and prints and drawings. The visits to the reading-rooms amounted to 231,544—an average of 761 daily, and of students to other particular departments to 55,676. The more important additions to the several collections

Digitized by Google

comprise two Lecythi of precisely similar scale, style, and material—an indubitable pair; a fine portrait head of Titus, unrestored, from North Africa; a series of stelæ of the late Egyptian Empire; engraved cylinder seals of the Babylonian-Persian period; implements of the Bronze and Early Iron Ages, and some early German antiquities mainly from Swiss and Hohenzollern lakes; a bronze Græco-Roman statuette of a negro boy, of the best period; and tessellated Roman pavement from Wimborne. The casts from the antique, transferred from South Kensington, are being arranged in an iron building. Fire-resisting divisional walls have been constructed in the roofs of the southern and western galleries, and that work will be carried out for the roof in its entirety. At the Natural History Museum, where the number of visitors—517,043—shows an increase of 19,606 as compared with the year 1907, further accommodation, for the botanical department, will be erected on the east side of the second floor.

DECEASED ARCHITECTS' ESTATES.

The late Mr. T. Mellard Reade, F.R.I.B.A., of Liverpool and Blundellsands, who died, aged 77, on May 26, has left estate valued at 8,711*l.* gross with 7,247*l.* personalty. Mr. Reade bequeathed, free of duty, to the Liverpool University his collections of geological and scientifical pamphlets and specimens.——The estate of the late Mr. Nathan Solomon Joseph, F.R.I.B.A., of London, who died on June 11, aged 74, is valued at 52,848*l.* 13s. 11d. gross, with net personality sworn at 50,857*l.* 1s.

BARDNEY ABBEY.

The excavations on the site of Bardney Abbey, near Horncastle, Lincolnshire, have resulted in a further discovery, that of the tombstone of Abbot Richard de Horncastle, 1507, with a Latin inscription. The monastery which Ethelred, King of Mercia, founded at Bardney in 704, of which he became first abbot, and wherein it is said he was buried, was destroyed by the Danes in 870. Gilbert de Gaunt, Earl of Lincoln, reinstated the house in the latter half of the XIth century for a community of Benedictine monks; at the time of the Dissolution the revenues amounted to a computed sum of 429*l.* 7s. per annum.

RECENT PICTURE SALES.

The current season has been marked by the dispersal at Christie's rooms of collections of Mr. H. Gaskell, Sir W. Cuthbert Quilter, Bart., the Dowager the Hon. Louise van Alphen of the Hague, Mr E. H. Cuthbertson, Mr. R. G. Behrens, and others. From the Quilter gallery, which realised a total of 97,870*l.* 10s. on the one day, were sold Holman Hunt's "The Scapegoat," painted at Oosdoom, on the margin of the Red Sea in 1854, exhibited at the Royal Academy in 1856, and sold in 1862 for 475 guineas—2,800 guineas (Byworth); Reynolds's "Venus and Piping Boy," painted, for 250 guineas, for Angerstein—6,400 guineas, Romney's portrait, it is said, of Mrs. Jordan—4,900 guineas, Sir H. von Herkomer's "The Last Muster," 1875—3,100 guineas, Cecil Lawson's "Doone Valley," 1882—2,250 guineas, Turner's "Venus and Adonis"—4,000 guineas, Sir W. Q. Orchardson's "The Challenge," 1864—1,000 guineas, and G. Vincent's "Greenwich Hospital," 1827—1,060 guineas (all these to Messrs. Agnew); Murillo's "The Immaculate Conception," painted for King Carlos II.—4,800 guineas (H. Smith); Velasquez's portrait of Mariana, consort of Philip IV.—2,300 guineas (Wyatt); F. Walker's "The Bathers," 1867—2,900 guineas (Tooth); Josef Israels' "Washing the Cradle"—2,250 guineas (Reinhart, of Chicago); Constable's "West End Fields, Hampstead"—600 guineas (Gibson, of Melbourne Museum); Lord Leighton's "Cymon and Iphegeneia," R.A. 1884—2,250 guineas (Grayson); and Sir John Millais's "Murthly Moss," R.A. 1887—3,000 guineas (Tooth), "Joan of Arc," 1865—700 guineas (Wood), and portrait of John Bright, M.P., 1880—680 guineas (Gooden & Fox). From the Gaskell collection:—Constable's "Arundel Mill and Castle"—8,820*l.*; Sir L. Alma Tadema's "Rose of all the Roses"—1,155*l.*, and Turner's "The Burning of the Houses of Lords and Commons, October 16, 1834"—13,125*l.*; and from the van Alphen collection:—J. Maris's "Low Tide"—1,150 guineas, and a view in a Dutch town—1,250 guineas. On July 16 were sold a landscape with figures, signed by J. Ruysdael—760 guineas, Romney's portrait of Mrs E. Wakefield, *née* Watson—1,500 guineas, and Raeburn's fine whole-length portrait of Sir John Sinclair, of Ulbster, N.B., in a Militia uniform—6,200 guineas (Colnaghi & Co.).

CLINKER BLOCKS FOR ROAD REPAIRS.

The Borough Engineer of Kensington reports that there are upwards of 180,000 Kensington clinker blocks in stock at the present time. It is stated that paving blocks of this description have already been laid in various streets in the borough where the amount of traffic is limited, and they have proved to be a very satisfactory road-paving material. Apart from this a number of the blocks have been subjected to tests under various conditions, and particularly as regards their behaviour under freezing and thawing. The results of these tests have been highly satisfactory, and the Engineer has no hesitation in advising that the blocks may be laid without risk of failure in any street in the borough where the traffic does not exceed, say, thirty per foot of average width during the twelve hours ending 8 p.m. It is proposed to lay the blocks in sixteen roads.

CHURCH BUILDING SOCIETY.

The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels held its usual monthly meeting on the 15th inst. at the Society's House, 7, Dean's-yard, Westminster Abbey, S.W., the Rev. Canon C. F. Norman in the Chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Lower Mitton, St. Michael, near Stourport, 75*l.*; Merton, St. John the Divine, Surrey, 125*l.*, for the first portion; and Purlwell, St. Andrew, near Batley, Yorks, 125*l.*; towards rebuilding the church at Haslington, St. Matthew, near Crewe, 50*l.*; and towards enlarging or otherwise improving the accommodation in the churches at Boyne Hill, All Saints, near Maidenhead, 75*l.*; Cann, St. Rumbold, Dorset, 15*l.*; Fincham, St. Martin, Norfolk, 20*l.*; Hedworth, St. Nicholas, Durham, 35*l.*; Ipswich, St. Bartholomew, 20*l.*; Llanddewi, St. David, Denbigh, 10*l.*; Sefton, St. Helen, near Liverpool, 40*l.*; Skenfrith, St. Bridget, near Monmouth, 25*l.*; Trent Vale, St. John the Evangelist, Staffs, 50*l.*; Warmley, St. Barnabas, near Bristol, 20*l.*; and Whatcote, St. Peter, Warwickshire, 15*l.* Grants were also made from the Special Mission Buildings Fund towards building mission churches at Caergeiliog, near Holyhead, 15*l.*; Nedging Tye, Suffolk, 5*l.*; Scackleton, near York, 20*l.*; and Washford, near Taunton, 30*l.* The following grants were also paid for works completed:—Hill, St. James, near Sutton Coldfield, 75*l.*; Shuttington, St. Matthew, near Tamworth, 25*l.*; Eastney, St. Margaret, Hants, 200*l.*, on account of a grant of 1,000*l.*; Sunnyside, St. Michael, near Berkhamsted, 120*l.*; West Kirby, St. Andrew, Cheshire, 155*l.*; Epsom, St. Barnabas, Surrey, 120*l.*; Southover, Wells, Som., 25*l.*; Charterhouse-on-Mendip, Som., 20*l.*; Ebbw Vale, Mon., 10*l.*; and Methwold, Norfolk, 15*l.* In addition to this the sum of 206*l.* was paid towards the repairs of eleven churches from trust funds held by the Society. The grants voted at this meeting have exhausted the funds at the disposal of the Committee. Liberal contributions are earnestly invited, both to the General and the Mission Buildings Fund, to enable the Committee to vote substantial grants, and to continue the valuable work which this Society has so successfully carried on during the past ninety-one years. Nine thousand one hundred and sixty places, *i.e.*, more than half the parishes in England and Wales, have been aided by the Society with grants from the General Fund, amounting to 1,062,765*l.*, and 973 grants have been made from the Mission Buildings Fund amounting to 26,229*l.*

THE OLD BRIDGE AT PRAGUE.

The old stone bridge at Prague, built in the second half of the XIVth century by Charles IV., King of Bohemia and Emperor of Germany, between the old town and the Malá Strana, was decorated in the XVIIIth century with a series of statues, of which some are reckoned amongst the finest specimens in Bohemia of the Barocco period. Two of these figures, those of St. Francis Xavier and Ignatius Loyola, sculptured by the celebrated Brokoff, and placed opposite each other on the same pier of the bridge, were damaged and thrown into the river by the great flood of 1890. They lay for many years at the bottom of the Vltava. Ultimately they were fished up with great difficulty, but only fragments of these two masterpieces were recovered. These were patched together, but even with the help of photographs and other documents the results were only poor torsos. The subject dragged on for some years, and finally a commission, appointed by the Municipality of Prague, suggested that copies should be made, based on the fragments and documents, and set up on the empty piers. The public, a few of the newspapers, and some of the corporations protested, and the artist society "Manes" vehemently denounced these proposed reproductions. It demanded that the remains of the statues should be put in the museum, and their place taken by works of modern sculpture, for which a public competition should be opened. The municipality, in answer to these demands and apparently acceding to them, recently appointed a new commission of experts, selected in such a manner that no doubt could be entertained as to their verdict—this commission, in fact, decided for the copies. At this juncture the artists' society "Manes," through their *Art Review*, desire to make widely known "this momentous danger," in the hope that the opinion of European writers may induce the Municipality of Prague to alter its decision. They ask for answers to the following questions:—

"1. What is your opinion, in general, regarding copies of works of art intended for the public benefit? 2. What is your opinion in this particular case? 3. What would you consider the most suitable substitute for the damaged statues?"

A Parisian contemporary, *Les Concours Publics d'Architecture* doubts whether modern statues on this characteristic bridge would excite any interest, and cannot see how the replacing of shapeless fragments by copies, reproduced as exactly as possible—and acknowledged to be such—could be styled an act of vandalism or contrary to good taste. The statues of the bridge at Prague make a harmonious and celebrated whole; this effect could hardly be spoiled by the introduction of exact copies of the two figures which have been destroyed (provided the sculptor agree faithfully to reproduce the old models) whereas there is everything to be feared for this harmony, from designs which might be conceived in too modern a spirit or from works widely dissimilar in character.

AN ITALIAN COMPETITION.

In a competition of two degrees for procuring a design for the monument to be erected to the memory of the poet Carlo Porta at Milan, the jury selected a design by the sculptor Albert Dressler; not the design submitted during the second part of the competition, but the one he had sent in in the first instance in the spring of 1908. It is reported that some of the competitors who took part in the second degree of the competition are going to protest against the decision of the jury.

ACCIDENTS IN FERRO-CONCRETE.

Accidents in ferro-concrete constructions appear to be on the increase abroad. Within ten days in June, we notice three:—One in Paris, where a floor 8·50 metres by 4·50 metres crashed down and killed a workman as soon as the centres had been removed; one at Ugines (Savoy), where a ferro-concrete terrace, in some steel works, gave way over a surface of 600 square metres. Four workmen were killed and two seriously injured. The inquiry seemed to point to the buckling of the supporting wall. The third accident occurred at the watering-place, Châtel-Guyon, in Puy de Dôme. One of the drinking halls, built last winter in ferro-concrete, fell in, killing one person and injuring three others.

THE REFORMATION MONUMENT, GENEVA.

When the result of the international competition for designs for this monument was published, the jury announced that the premiated design only gave satisfaction from its general conception and from the architectural point of view. As other designs had shown greater sculptural qualities, the Committee was instructed to make a further selection amongst the sculptors for the execution of the statues. Two Frenchmen have, in consequence, been chosen, Messieurs Landowski and Bouchard. The monument, or rather the wall, in the Promenade des Bastions, will be 120 metres long. The central group will be composed of Calvin, Knox, Farel, and Beza, which figures, 6 metres high, have already been thoroughly thought out. Other statues, of Coligny, William of Brandenburg, William the Silent, Cromwell, etc., will be separated by vast expanses, adorned with bar-reliefs and inscriptions bearing on the history of the Reformation. M. Bouchard is the author of the immense group of oxen which astonished the visitors at the last Salon, and of "Pierre de Montereau," which will be placed in the square du Carrousel along with Landowski's curious work representing "Architecture."

THE INSTITUTE OF METALS.

The Institute of Metals has just completed the first year of its existence, during which period the membership has increased from barely 200 to over 500. The forthcoming autumn meeting will take place at Manchester on Thursday and Friday, October 14 and 15. The arrangements, which are in the hands of a strong local committee, are already well advanced. A series of about half a dozen papers will be read and discussed at the two morning sessions of the Institute. The afternoon of the first day will be devoted to a visit to the University of Manchester, where members will be officially received on behalf of the University by Vice-Chancellor Alfred Hop-

Digitized by Google

kinson, K.C. The new engineering laboratories will be open for inspection, and facilities will also be given for inspecting the Municipal School of Technology. In the evening a reception will be held by the Lord Mayor at the Town Hall. During the afternoon of Friday, October 15, members will have the opportunity of visiting works of metallurgical interest in the neighbourhood of Manchester.

THE CARPENTERS' COMPANY.

At the recent examinations in carpentry and joinery held in London and Manchester, the following candidates, in alphabetical order, passed successfully:—*Bronze Medals.*—W. G. Fernie, J. A. Haigh, P. Kilburn, S. Massey, B. Moore, C. H. Overend, E. Whitaker. *1st Class Certificates.*—M. C. Blamey, C. Burle, G. J. Chappell, F. Gardiner, F. Garner, R. Garnett, A. George, J. H. Higson, H. J. Kent, H. E. Kinns, A. Maclean, M. H. Midghall, J. Roebuck, O. J. Sharp, A. H. Smith, R. Sykes, E. E. Syms, C. Williams. *2nd Class Certificates.*—A. C. Andrews, R. J. Back, G. B. Bardsley, J. W. Barthram, H. Binks, A. E. Bonfield, J. B. Bonthrone, G. L. Brown, W. R. T. Cook, A. Cropper, D. I. Davies, J. H. Dixon, W. J. Dorey, J. M. Dovey, S. Hill, J. M. Jarvis, J. W. Jones, C. H. Kendall, H. Last, J. R. Saunders, B. T. Scott, W. Todd, G. Whiteside, A. J. Wiseman, C. E. Worsfold.

GREEK MARBLE.

The British Consul in Piræus and the district reports that the vast and practically inexhaustible supplies of marble from the Pentelicon district continue to be worked by the British company. To cope with the increasing demand the latest suction-gas plant is about to be installed at a cost of 12,000*l.*; this will generate 300 electrical horse-power for the driving of cranes, saws, drills, and general quarry plant. During 1908 a large amount of development work was done, with the result that some of the finest white marble has been uncovered, and will be handled by the new plant. The Pentelicon quarries, which contain white and blue marble, continue to open well. At the Stamatovouni section the quality of the marble is materially improving at depth. The building quality has recently been introduced into Paris, and it continues to find favour with London architects, several new buildings having been erected with it during 1908. The shipments during the year showed a reduction owing to the fact that the company's foreign depôts carried heavy stocks. Large orders are now being received for the marble with white ground and red and yellow veins procured from the Skyros quarries; this quality is principally used for cutting into slabs for decorative purposes. Production of the dark green marble with white veins from Tinos quarries was curtailed in 1908, but is now to be more than doubled to cope with large orders. In regard to Cipollino marble—light green with waves—development work at the new quarries has been carried on almost exclusively, and large masses are now cleared for extraction as orders are received. This marble, being principally for columns, is extracted according to the dimensions required. The Consul concludes his report with the remark:—"It is hoped that orders for the various marbles which are now being received point to the fact that the commercial depression through which many countries have been passing is coming to an end. Marble being essentially a luxury, the trade feels the pulse of prosperity very accurately."

GERMAN BUILDING TRADE SETTLEMENT.

Mr. Consul Schwabach, in his annual report, just received at the Foreign Office, on the trade of Berlin and district, observes that a general wages agreement which was arrived at in the building trade in the spring of 1908 terminated the fierce struggle which had been carried on for some time, and by this means a trade of great economic importance has been saved for some years to come from the constant danger of being involved in serious strikes and locks-out through want of a generally-recognised and valid collective labour contract. The employers, who are organised as the "German Employers' Association for the Building Trade," in the same way as the workmen have their compact organisations, had drawn up a draft for the preparation of wage contracts, but this met with violent opposition on the part of the men. At one time it seemed as if no reconciliation could be brought about between the association and the workmen's unions, and it was expected that on April 1, 1908, 300,000 men would be locked out. However, at the last moment the two parties moderated their demands, and an agreement was arrived at. The reason the men had for not agreeing to the draft contract was that it contained stipulations likely to have an exceedingly injurious effect on their position. For example, the draft provided a rate of pay for "capable" workmen, and it was left to the discretion of employers to say who was to be regarded as a capable workman and who was not. Then, again, overtime was made compulsory, whereas previous contracts made no such provision. Further, the draft, by forbidding "all attempts at agitation on working premises on pain of instant dismissal," made efforts of an agitatory kind impossible. It is true that previously agitation had not been altogether permitted, yet the prohibition had not been understood as applying to builders' shelters, whilst now, in the draft, those places were explicitly declared to form a component part of the working premises. Finally, the stipulation that whenever a local wages list had been agreed to within the district of the Employers' Association, such list was only to apply after all pending disputes had been satisfactorily settled, and the instructions of the Employers' Association to local organisations not to reduce the working day below ten hours, made the draft unacceptable to the men. The negotiations, which took place on March 25 and 26, between the representatives of the German Employers' Association for the building trade on the one hand, and the leaders of the trade unions of masons, joiners, and builders' labourers, including the "Christliche Bauarbeiter Verband," on the other, resulted in the men giving up their demand for the introduction of the eight-hour day, with the proviso, however, that wherever the working day was already shorter than ten hours it should remain unaltered. Further, and in deference to the wish of the men, the employers relinquished the stipulation that the agreement scale of wages should be guaranteed to capable workmen only.

HENRY SAXON SNELL PRIZE COMPETITION.

The Royal Sanitary Institute have appointed Professor Henry Adams, M.Inst.C.E., F.S.I., Dr. Louis C. Parkes, M.D., D.P.H., Professor W. Napier Shaw, D.Sc., M.A., F.R.S., and Mr. A. Saxon Snell, F.R.I.B.A., as the adjudicators for the next "Henry Saxon Snell Prize" Competition, the subject set being "The Principles of Heating and Ventilating Public Buildings." The essays have to be delivered at the Institute, 90, Buckingham Palace-road, by August 31.

BUSHEY PARK.

In terms of an arrangement with the Hampton Council for the laying out of an approach to the new entrance, the Office of Works have agreed to construct a new gateway giving access to pedestrians from Hampton-hill into the Park.

BIRMINGHAM CITY ENGINEER'S ANNUAL REPORT.

In the report of the City Engineer and Surveyor (Mr. Henry E. Stilgoe) for the year ended March 31, just issued, it is stated that according to the records of the Building Surveyor's (branch) department, building plans to the number of 666 were approved, and the following buildings were completed:—Houses and shops, 1,218, as against 798 in 1907-8; business premises, 28—54; warehouses and shopping, 70—84; schools, 1—3; churches, 3—2; chapels, 0—3; miscellaneous, 91—116; alterations and additions, 364—245; total, 1,775—1,305. The number of buildings for which plans were deposited during the year was 1,913, as compared with 1,829 in 1907-8 and 1,739 in 1906-7. No fewer than twenty-one new street plans were also deposited. Permits of hoarding, scaffolding, etc., on the public footpaths were issued to the number of 486. No fewer than 3,173 visits were made to factories and workshops in the city to ascertain that the means of escape were maintained in proper order and free from obstructions. The sewers and rivers (branch) department details the sewer and river work carried out during the year, and mentions the extensive operations in open portions of the River Rea and Hockley Brook following the floods in May, 1908. According to the roads and scavenging (branch) department, 17,391 super. yds. were laid with new granite setts. Regarding the tar-spraying of macadam roads the department in 1907 tar-sprayed an area of 362,746 sq. yds., at a cost of 1,398*l.* 8s. 4d., or ·925d. per square yard, and last summer an area of 578,286 sq. yds. (or a length of 44¼ miles) of macadam was covered at a cost of 2,113*l.* 1s. 3d., or ·876d. per square yard. The particular feature in this year's work was the purchase and use of a 1,000-gallon tar-spraying machine, and the carrying out of the larger portion of the work at reduced cost by employing Corporation labur, has led to the department ordering another 1,000-gallon machine for the year 1909. According to the public lighting (branch) department, there were 10,361 public lamps in 1909, as against 10,256 in 1908; and 3,794 court lamps as compared with 3,899. The total expenditure on public lighting, including wages, repairs, gas, etc., amounted to 26,618*l.*

Law Reports.

ACTION BY CONTRACTORS AGAINST THE CROWN.

MR. VEREY, the Official Referee, on the 19th inst., reserved his decision in the case of Hawkins *v.* the King, upon the hearing of a petition of right which had been before him for several days.

In this case the plaintiffs, who are large contractors, were employed by the War Office to execute works at Longmoor and Bordon, such as the erection of barracks, stables, and hutments. The petitioners set up a number of claims against the Crown with reference to the contracts, but the present hearing was limited by the order of the Court to certain paragraphs in the petition, which had reference to an alleged promise made to the petitioners, by Colonel Gordon, the commanding Royal Engineer of the district, that a railway between Bentley and Bordon Camp would be constructed within six months. This railway had not been built, and the petitioners alleged that in consequence of that they had suffered great damage through the extra cost of freight of their materials.

The Crown's answer to the petition was a denial of the promise of the railway or of the authority of the Commanding Engineer to make the promise.

As before stated, the learned Official Referee, after hearing the evidence and the addresses of counsel, reserved his decision.

Mr. English Harrison, K.C., and Mr. G. A. Scott appeared for the petitioners; and the Attorney-General (Sir Wm. Robson, K.C.), and Mr. S. A. J. Rowlatt for the Crown.

CASE UNDER THE LONDON BUILDING ACTS, 1894 to 1908: ACCESS TO ROOF.

ON the 14th inst., at Lambeth Police Court, Mr. J. Pusser appeared before Mr. Horace Smith in answer to two summonses in respect of work done by him as builder at 128, Old Kent-road, issued on the information of Mr. Bernard Dicksee, District Surveyor for Newington, etc. The summonses were (1) for the recovery of penalties for neglecting to give building notice as required by sect. 145 of the Act of 1894, and sect. 27 of the Act of 1905; and (2) for an order to comply with a Notice of Irregularity served on him by the District Surveyor in respect of irregularities committed by him in doing the work in question, which was work purporting to be the provision of an access to the roof, as required by sect. 12 of the London Building Acts (Amendment) Act, 1905.

Mr. Pasmore, of Messrs. Hicklin, Washington, & Pasmore, appeared for the District Surveyor, and Mr. Philcox for the defendant.

The defendant's solicitor stated that defendant must plead guilty to the neglect to give notice; his mistake arose from the fact that he had consulted the owner, a justice of the peace, who had informed him that no notice was necessary to the District Surveyor. The work done was that ordered by the owner.

Mr. Horace Smith fined defendant 20s. and 2*l.* 2s. costs for the neglect to give notice, and made an order for defendant to comply with the Notice of Irregularities within twenty-one days.

CONTRACTORS' CLAIM AGAINST ARCHITECT.

MR. MUIR MACKENZIE, the Official Referee, last week resumed the hearing of the case of Bankart *v.* John Tanner & Sons, upon the trial of the defendants' counter-claim.

In this case the plaintiff, Mr George Percy Bankart, an architect and decorative draughtsman, of Baldwin-gardens, Gray's Inn-road, brought the action against the defendants, Messrs. John Tanner & Sons, plastering contractors, of Liverpool and Birkbeck Bank-chambers, Chancery-lane, for 1,000*l.* for work done, and judgment was given for the plaintiff for that amount, subject to the counter-claim, by which Messrs. John Tanner & Sons claimed damages against Mr. Bankart for the detention of certain scaffolding used in relation to the decoration of the Victoria and Albert Museum, South Kensington.

(The facts of the case were fully reported in the *Builder* of July 3 last.)

Mr. Radcliffe, K.C., and Mr. Franke appeared for Mr. Bankart; and Mr. F. A. Greer and Mr. Adair Roche for Messrs. John Tanner & Sons.

In the result the learned Official Referee reserved his decision.

The learned Official Referee, on the 22nd inst., delivered his considered judgment on the counter-claim, which he dismissed with costs.

(An extended report of the judgment will appear in next week's issue of the *Builder.*)

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointment, xvii.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

JULY 30.—**Grimsby.**—The Corporation invite designs for the extension of existing Town Hall. Premiums of 250*l.*, 150*l.*, and 100*l.* Conditions from Mr. H. Gilbert Whyatt, Borough Engineer, Town Hall, Grimsby. Full particulars only on receipt of a deposit of 2*l.* (Cheques to be made out to Mr. Frank Stephenson, Borough Treasurer.) See advertisement in our issue of April 24 for further particulars.

JULY 31. — **Glasgow.** — LAYING-OUT LAND.—The Patrons of the Royal Incorporation of Hutchesons' Hospital in the City of Glasgow invite competitive designs for laying-out for feuing and building their lands of Thornliebank, in the Parish of Eastwood and County of Renfrew, near the City of Glasgow. The terms and conditions of the competition, and, upon deposit of 3*l.* 3s., skeleton plans showing the situation and boundaries of the different portions of the lands, may be had from the Chamberlains of the Hospital, Messrs. Hill & Hoggan, 194, Ingram-street, Glasgow, with whom designs must be lodged not later than July 31, 1909. Premiums of 100*l.*, 75*l.*, 50*l.*, and 25*l.* respectively will be awarded.

JULY 31. — **Reading.** — OFFICES.—The Berkshire C.C. invite competitive designs for proposed new offices, committee-room, etc., at the Forbury, Reading. Premiums of 100*l.*, 75*l.*, and 50*l.* Particulars from Mr. J. Fred. Hawkins, County Surveyor, Bank-chambers, Cross-street, Reading. Deposit of 1*l.* 1s. For further particulars see advertisement in our issue of April 17.

AUGUST 5.—**Cardiff.**—CASKET.—Tenders are invited for a silver-gilt casket, to be presented to the Right Honourable Viscount Tredegar, a copy of the specification of which may be obtained from Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50, 25, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

* OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

JULY 26.—**Dudley.**—STORAGE BATTERY HOUSE.—The Corporation of Dudley invite tenders for the erection of a storage battery house. Specification, etc., may be obtained from the Borough Electrical Engineer, Electricity Works, Bull-street, Dudley.

JULY 26.—**Horden.**—SUNDAY SCHOOLS.—The erection of Wesleyan Sunday schools and classrooms at Horden, near Castle Eden. Names to the architect, Mr. J. Walton Taylor, F.R.I.B.A., St. John-street, Grainger-street West, Newcastle-upon-Tyne.

JULY 26. — **Gorleston.** — CHURCH. — Primitive Methodist Church, Nile-road, Gorleston-on-Sea. Plans, etc., including electric lighting and hot-water heating, can be seen at office of Mr. Arthur S. Hewitt, A.R.I.B.A., architect, Bank-chambers, Great Yarmouth.

JULY 26.—**Grimsby.**—ALTERATIONS.—Alterations to No. 69, Cleethorpe-road, for the Corporation. Copy of plan, etc., may be obtained at the office of Mr. H. Gilbert Whyatt, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Grimsby.

JULY 26.—**Morley.**—CLOSETS.—For the erection of two water-closets and conversion of four privies into water-closets, Wellington Mills, Morley, for Mr. William Scath. Plans, etc., may be seen, and quantities obtained, at the offices of Mr. T. A. Buttery, F.I.A.S., architect, Queen-street, Morley, and 1, Basinghall-square, Leeds.

JULY 26. — **Preston-next-Wingham Council School.** — SUMMER REPAIRS. — Kent Education Committee invite tenders for the execution of summer repairs. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Rev. W. D. Lindley, Elmstone Rectory, Dover.

JULY 26. — **Seaton Sluice.**—CLUB PREMISES.—Rebuilding club premises at Seaton Sluice. Names for selection to Mr. J. G. Orme, architect, 50, Grainger-street, Newcastle.

JULY 26. — **Southampton.** — LATRINES, ETC.—The Education Committee invite tenders for (1) pulling down and re-erecting certain latrines and playsheds at the Central District Council School, and (2) reconstructing the draining and the provision of new sanitary fittings at the St. Denys Council School. Plans, etc., may be seen, and bills of quantities obtained, at the offices of the Borough Engineer, on production of the Borough Treasurer's receipt for 2*l.* 2s. for each work.

JULY 26. — **Willesborough.**—REPAIRS.—Kent Education Committee invite tenders for the execution of summer repairs required to be carried out at the Council School. Specifications can be seen, and further information obtained, at the offices, Mr. T. W. Wilde, Albemarle-road, Willesborough, Ashford, or of the Head Master, School House.

JULY 27. — **Aberayron Intermediate School.**—LABORATORY.—The Governors invite tenders for the erection of a new chemical laboratory and manual workshop as additions to the above buildings. Drawings, etc., can be seen at the office of Mr. H. C. Jones, Clerk to the Governors, Aberayron, or at the office of Mr. G. Dickens-Lewis, architect, 49, North-parade, Aberystwyth.

JULY 27. — **Bridgnorth.** — ALTERATIONS, ETC. — For certain alterations, etc., in connexion with the re-opening of the third archway of the North Gate. Plans, etc., can be seen at the office of the Borough Surveyor.

JULY 27.—**Camborne.**—ROOF, ETC.—The Trustees of the Centenary Wesleyan Methodist Church at Camborne invite tenders for new slate roof, etc., to above church, according to specification, which may be seen by appointment at the residence of Mr. E. Vine, Roskear, Camborne, or at the office of Mr. Sampson Hill, architect, Green-lane, Redruth.

JULY 27. — **Herne Bay.** — CLOAK-ROOM, ETC.—Kent Education Committee invite tenders for the erection of a new cloak-room and improved heating required to be carried out at the Council School. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. Geo. Jackson, Beltinge, Herne Bay, Kent.

* JULY 27. — **Northamptonshire.**—SCHOOL.—Tenders are invited for additions to Culworth School. See advertisement in this issue for further particulars.

JULY 27.—**West Hartlepool.**—UNDERGROUND CONVENIENCE.—The Corporation invite tenders for the construction of an underground convenience at the east end of church-square, and also urinal under retaining wall, at the east end of Church-street. Plan, etc., may be seen, and further particulars obtained, upon application at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Borough Engineer's Office.

JULY 28. — **Alnwick.** — ALTERATIONS, ETC.—Alterations and additions to No. 2, Percy-terrace, Alnwick (painting excepted). Plans, etc., may be seen at the office of Mr. M. Temple Wilson, M.R.San.I., architect and surveyor, Alnwick.

JULY 28. — **Barrow-in-Furness.**—SHELTERS.—The Corporation invite tenders for the erection of two shelters in the Public Park. Plans may be seen, and bills of quantities obtained, on application, at the Borough Engineer's Office.

JULY 28. — **Charlton Musgrove.** — WORKS AT SCHOOL.—Somerset C.C. Education Committee invite tenders for work in connexion with new offices, cloak-rooms, playshed, etc., at Charlton Musgrove Council School. Plans, etc., can be seen at the school or at the office of Mr. A. J. Pictor, Bruton, from whom any further information may be obtained.

JULY 28.—**Merthyr.**—ADDITIONS.—For additions to the Merthyr General Hospital. Plans, etc., at the office of Mr. C. M. Davies, architect.

JULY 28. — **Newbold Moor.** — HALL, ETC.—Parish Hall, fence walls, and other work at Newbold Moor, near Chesterfield. Drawings, etc., at the offices of Messrs. Rollinson & Son, architects and surveyors, Corporation-street, Chesterfield, on deposit of a sum of 3*l.*

JULY 29.—**Canterbury.**—REPAIRS.—For sundry repairs to the Kent and Canterbury Hospital. Specification to be seen at the office of the Secretary, 46, St. George's-place, Canterbury.

JULY 29. — **Congleton.**—SCHOOL WORKS.—Tenders are invited for alterations and additions at Mossley School, Congleton, comprising new infants' classrooms, cloak-rooms, offices for boys, girls, and infants, and drainage, etc. Quantities can be obtained from the architect, Mr. C. Russell Hall, Congleton, upon a deposit of 3*l.* 3s. Plans, etc., may be seen at the offices of the architect, Chapel-street, Congleton.

JULY 29.—**Cymmer, Porth.**—ALTERATIONS, ETC., TO CHAPEL.—Separate tenders are invited for the alterations and additions and decorations of Cymmer Welsh Congregational Chapel, Cymmer, Porth, for the Building Committee. Plans, etc., may be seen at the residence of Mr. W. D. Thomas, architect and surveyor, and form of tender obtained thereat.

JULY 29.—**Fleur-de-lis.**—HOUSES.—Erection of ten semi-detached houses for the Fleur-de-lis Building Club (No. 4). Plans, etc., may be seen on application to Mr. W. S. Nash, Fleur-de-lis.

JULY 29.—**Hull.**—MADELEY-STREET BATHS.—The Corporation invite tenders for the following work in connexion with the extension of Madeley-street Baths, namely:—Contract No. 3.—Builders' and joiners' work. Contract No. 4.—Heating and circulating pipes. Forms of tender and other particulars may be obtained at the City Engineer's Office.

JULY 29. — **Port Talbot.** — SCHOOL CHAPEL, ETC.—Erection of a Congregational school chapel and classrooms, together with other buildings, etc., at Port Talbot. Plans, etc., may be seen with the Secretary, Mr. B. T. Vaughan, 4, Margam-terrace, Port Talbot, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff, where bills of quantities may be obtained.

JULY 29. — **Wester Manbeen.** — COTTAGE, ETC.—Mason, carpenter, plumber, slater, plaster, and painter works of:—(1) Double cottage to be erected at Wester Manbeen; (2) alterations and repairs on farm steading at Wester Manbeen; (3) additions to steading at Bennoch Hill. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

JULY 29. — **Woking.** — CART-SHEDS, ETC.—Woking U.D.C. invite tenders for the erection of cart-sheds, etc., at the Council's Depôt, Goldsworth-road, Woking. Copies of the plans, etc., may be inspected, and full particulars obtained, at the offices of Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

JULY 30. — **Bristol.** — OFFICES AT ONEGA WHARF, CUMBERLAND-ROAD, BRISTOL.—The Docks Committee invite tenders for the construction of brick-built offices. Copies of the specification, etc., can be obtained from Mr. W. W. Squire, Engineer, Engineer's Office, Cumberland-road, Bristol, on production of a receipt showing that a deposit of 3*l.* has been paid to the Secretary of the Docks Committee, 19, Queen-square, Bristol, to whom all cheques must be made payable.

JULY 30.—**Croes Ynyd.**—HOSPITAL.—The Conway Joint Hospital Board invite tenders for the erection and completion of new isolation hospital at Croes Ynyd, near Conway. Plans etc., may be seen at the offices of Mr. T. B. Farrington, Trinity-square, Llandudno, and quantities and forms of tender obtained on the deposit of cheque value 2*l.* 2s.

JULY 30. — **Dyke.** — ADDITIONS TO SCHOOL.—Mason, carpenter, plumber, slater, plaster, and painter works of additions to the Public School at Dyke. The plans, etc., may be seen with Mr. C. G. Mackenzie, solicitor, Forres, or Mr. John Wittet, architect, Elgin.

JULY 30. — **Littlehampton.** — REPAIRS, ETC.—The Bridge Committee of the U.D.C. invite prices for sundry repairs, cleansing, and painting to old cottage on the Climping side of river; also for providing and fixing about 80 yds. run of oak post-and-rail fencing, etc. Specifications of works can be seen, and forms of tender obtained, on application to the Council's Surveyor, Mr. H. Howard, F.S.I., Town Offices.

JULY 30.—**Madeley.**—NEW SECONDARY SCHOOL.—The C.C. of Salop invite tenders for the entire work of the erection of the Madeley Secondary School at Coalbrookdale. Applications may be made at once for bills of quantities to the architect, Mr. Joseph Holt, A.R.I.B.A., 9, Albert-square, Manchester, when a copy of the bills of quantities, etc., will be forwarded. All applications must be accompanied by a deposit of 2*l.*

JULY 30.—**Silcoates, etc.**—ALTERATIONS, ETC.—The West Riding Small Holdings and Allotments Committee invite tenders for the following works:—Low Farm, Silcoates, Alverthorpe: Alterations and repairs to buildings. Top Farm, ditto. Plans may be seen, and specifications obtained, on application to the West Riding Architect, County Hall, Wakefield.

JULY 31. — **Castleisland.** — CHURCH BUILDINGS.—Tenders are invited for the erection and completion of the tower and spire of the Parish Church at Castleisland, Diocese of Kerry. Drawings, etc., may be seen at the offices of Messrs. Doolin & Butler, architects, Dawson-chambers, Dublin, or at the Parochial House, Castleisland, Co. Kerry. Bills of quantities have been prepared by Messrs. D. W. Morris & Co., 68, Harcourt-street, Dublin, and can be obtained from them on application.

JULY 31.—**Llandaff.**—FIRE-STATION.—Llandaff P.C. invite tenders for the erection of a fire-station, etc., at Llandaff. Plans, etc., may be seen, and bills of quantities obtained, at the office of the architect, Mr. J. H. Thomas, Pentwyn, Llandaff.

JULY 31.—**Low Moorsley.**—PREMISES.—Building of premises at Low Moorsley. Plans, etc., may be seen at the Committee Room, Low Moorsley Amicable Industrial Society, Ltd., Hetton-le-Hole, Co. Durham.

JULY 31.—**Perth.**—WALLS.—The Perth T.C. invite tenders for the erection of stone and brick

Digitized by Google

boundary walls for extension to Wellshill Burial Ground. Plans, etc., can be seen, and schedules of quantities obtained, at the Burgh Surveyor's Office, 16, Tay-street, Perth.

JULY 31.—**Pwllheli (Wales).**—ALTERATIONS, ETC.—For alterations, etc., to shop, Crugan, Pwllheli. Plans, etc., may be seen at the Pool-street Market, Carnarvon.

JULY 31.—**St. Buryan.**—SCHOOL.—Cornwall Education Committee invite tenders for the erection and completion of St. Buryan Council School according to plans, etc., which may be seen by appointment at the St. Buryan C. of E. School, or at the office of Mr. Sampson Hill, Architect to the Committee, Green-lane, Redruth.

JULY 31. — **Savile Town.**—WAREHOUSE.—Tenders are invited for the erection of a warehouse in Mill-street East, Savile Town. Drawings, etc., may be seen, and quantities, etc., obtained, at office of Messrs. C. H. Marriott, Son, & Shaw, Church-street-chambers, Dewsbury, on payment of 1*l.* 1s.

JULY 31.—**Stradbroke Schools.**—CLOAK-ROOMS.—Tenders are invited for alterations and new cloak-rooms. Particulars from Mr. Frampton, Stradbroke.

JULY 31.—**Tiverton.**—ADDITIONS, ETC.—Tenders are invited for the execution of certain additions and alterations to Old House, Blundell's School, Tiverton, in accordance with the plans, etc., prepared by the architects, Messrs. A. P. I. Cotterell & Carr, of 28, Baldwin-street, Bristol. Plans, etc., may be seen at the office of the architects, or the office of Mr. E. F. C. Clarke, solicitor, Tiverton. Copies of the bill of quantities and form of tender may be obtained from the architects on payment of the sum of 2*l.* 2s.

AUGUST 2 — **Ballintemple.** — SCHOOL, ETC.—New school and teacher's residence at Ballintemple, Garvagh, Co. Derry. Plans, etc., can be seen at the office of Mr. Wm. O'Kane, solicitor, Garvagh.

AUGUST 2.—**Porthcawl.**—HOUSES.—Erection of two houses in Wells-street, Porthcawl. Plans, etc., can be seen at Pontypridd and Tonypandy offices of Messrs. W. Morgan Lewis & T. Naunton Morgan, and also by appointment at 12, Edward-terrace, Cardiff.

AUGUST 4.—**Hartlepool.**—OFFICES.—North-Eastern Railway Directors invite tenders for erecting offices for dock master and cabin for dock head men at Victoria Dock, Hartlepool. Plans, etc., may be seen upon application to the stationmaster at Hartlepool, and further information obtained from Mr. William Bell, the Company's Architect, at York.

AUGUST 4. — **Hull.**—STATION.—North-Eastern Railway Directors invite tenders for the erection of a waterguard station for H.M. Customs at Hull. Plans, etc., may be seen upon application to the stationmaster, Paragon Station, Hull, and quantities and further information obtained from Mr. William Bell, the Company's Architect, at York.

✱ AUGUST 4. — **Hythe.** — SCHOOL ADDITION.—The Kent Education Committee invite tenders for a special subjects room at the Hythe Council School. See advertisement in this issue for further particulars.

AUGUST 4. — **Old Trafford.** — SCHOOL.—Stretford Education Committee invite tenders for the erection of an infant school at Old Trafford. Plans may be seen, and bill of quantities obtained, on application to the architect, Mr. Ernest Woodhouse, F.R.I.B.A., 88, Mosley-street, Manchester, on payment of a fee of 2*l.* 2s.

AUGUST 5. — **Stranocum.** — CHANCEL, ETC.—The Select Vestry of Drumtullagh Parish, Stranocum, Co. Antrim, invite tenders for the erection of a new chancel and alterations to the Parish Church. The plans, etc., may be seen at the office of Mr. J. S. Cochrane, Ballymoney, or at the office of Messrs. S. P. Cose & Son, architects, 21, Calender-street, Belfast.

✱ AUGUST 6. — **Newport.** — SCHOOL.—The Newport Education Committee invite tenders for higher elementary school, with cookery centre, laundry, and caretaker's house, at Stow-hill, Newport. See advertisement in this issue for further particulars.

AUGUST 6.—**Skipton.**—WALL.—For the building of a retaining wall at Sleets Gill, for the R.D.C. Plan, etc., may be seen, and quantities obtained, at the office of Mr. A. Rodwell, Surveyor, Skipton.

AUGUST 7.—**Abergavenny and Abertillery.**—SCHOOL ALTERATIONS.—Monmouthshire Education Committee invite tenders for extensions and alterations to the Abergavenny County Girls' Secondary School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. E. A. Johnson, architect, Abergavenny, on payment of a deposit of 2*l.* 2s. Tenders are also invited for extensions and alterations to the Abertillery County Secondary School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. R. L. Roberts, architect, Abercarn, on payment of a deposit of 2*l.* 2s.

AUGUST 7. — **Allonby (Cumberland).** — CLOAK-ROOMS.—For new cloak-rooms, etc., to Allonby Council School, for the Cumberland Education Committee. Drawings, etc., can be seen at the office of the Education Committee's Clerk of Works, 13, Earl-street, Carlisle, or at the residence of Mr. Tocher, Allonby. Forms of tender may be obtained on application to Mr. C. Courtenay Hodgson.

AUGUST 10. — **Pontypridd.**—CATTLE MARKET.—Construction of a cattle market at Pontypridd for the Pontypridd Market Company. Plans, etc., can be seen at offices of Messrs. A. O. Evans, Williams, & Evans, architects, Pontypridd.

AUGUST 10.—**Sheffield.**—TRAINING COLLEGE HALL OF RESIDENCE.—Sheffield Education Committee invite tenders for the erection of the Training College Hall of Residence for Men, and also for the heating and the electric lighting of the same. Drawings, etc., may be seen, and bills of quantities obtained, on application to the architects, Messrs. Gibbs & Flockton, 15, St. James-row, Sheffield.

✱ AUGUST 12.—**Douton, Kent.**—SCHOOL.—The Kent Education Committee invite tenders for the erection of a school for 250 children. See advertisement in this issue for further particulars.

✱ AUGUST 19. — **Holloway, N.**—POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite schemes and tenders for erection of new Money Order Department of the Post-office at Manor Park, Holloway, N. See advertisement in this issue for further particulars.

✱ AUGUST 23.—**Chatham.**—SCHOOL.—The Chatham Education Committee invite tenders for an elementary school at Luton, Chatham. See advertisement in this issue for further particulars.

✱ AUGUST 24. — **Birmingham.**—POST OFFICE EXTENSION.—The Commissioners of H.M. Works, etc., invite tenders for reinforced concrete portions of Head Post Office at Birmingham. See advertisement in this issue for further particulars.

NO DATE. — **Belfast.** — PREMISES.—New premises, York-road, Belfast, for Messrs. The Belfast Co-operative Society, Ltd. Quantities can be obtained from Messrs. Macarthy & Brookes, Scottish Provident-buildings, on paying deposit of 2*l.* 2s. Plans can be seen at the office of Messrs. Hill & Kennedy, A.R.I.B.A., M.R.S.I., architects and civil engineers, 35, Wellington-place, Belfast.

NO DATE. — **Borth, etc.** — SCHOOL WORKS.—The Cardiganshire County Education Committee invite estimates for additions and alterations to the undermentioned schools, viz.:—Borth; Brongest—Newcastle Emlyn; Peterwell—Lampeter; Llechryd—Cardigan; Bwlchyllan; Llwyndafydd. Drawings, etc., can be seen in charge of the respective headmasters.

NO DATE.—**Carlisle.**—NEW ROLLER SKATING RINK.—Ground formation, including concrete raft and sub floor to carry the superstructure. Names to Messrs. Oliver & Dodgshun, architects, Carlisle.

NO DATE. — **Cawood.** — RECONSTRUCTION.—Reconstruction of the Thompson's Arms, Cawood. Names to Messrs. Samuel Jackson & Son, architects, 11, Tanfield-chambers, Bradford.

✱ NO DATE.—**Laindon.**—SCHOOL.—The Essex Education Committee invite tenders for a small school at Laindon, Essex. See advertisement in this issue for further particulars.

NO DATE. — **Towyn.** — ADDITIONS TO SCHOOL.—The Governors of the County Intermediate School, Towyn, invite tenders for building a new wing consisting of cloak-rooms, lavatories, bathrooms, and dormitory to the boys' boarding-house. The plans, etc., may be obtained on application to the architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth, R.S.O.

ENGINEERING, IRON, AND STEEL.

JULY 24. — **London.** — BOILER.—The Guardians of the Poor of the Parish of St. Mary, Islington, invite tenders for the provision and fixing of a new small boiler for the kitchen of the St. John's-road Workhouse, Upper Holloway, N. Further information and copy of specification may be obtained on application to the Master of the St. John's-road Workhouse not later than July 24.

JULY 28. — **Workington.**—GROYNE.—The Workington Harbour and Dock Board invite tenders for the construction and completion of a timber and concrete groyne, 460 ft. long, or thereabouts, to the south of the present John Pier, situate at Workington, on the coast of Cumberland. The drawings may be seen, and a copy of the specification, etc., may be obtained, at the Harbour Office, Workington, upon payment of the sum of 3*l.* 3s.

JULY 31. — **Manchester.** — VALVES.—Manchester Corporation Waterworks Committee invite tenders for the supply of four 24-in. vertical sluice valves. Specifications, etc., may be obtained on application to the Secretary, Waterworks Offices, Town Hall, Manchester, on payment of 10s.

AUGUST 5.—**Sheffield.**—HEATING WORKS, PROPOSED NEW CAR DEPOT, SHOREHAM-STREET. — The Tramways Committee invite tenders for the installation of heating and hot-water supply apparatus at the above. Specifications, etc., may be obtained on application to the City Architect, Town Hall, Sheffield, on deposit of the sum of 1*l.* 1s.

AUGUST 9.—**Bedlington.**—BRIDGE WORKS.—Bedlingtonshire U.D.C. invite tenders for execution of work as under, namely, furnace bridge: For the strengthening of the furnace bridge at Bedlington Bank Top, in ferro-concrete (Hennibique system). Drawings, etc., may be seen, and quantites, etc., obtained, by appointment, at the office of the Surveyor of the Council, Mr. J. E. Johnston, Front-street, Bedlington.

NO DATE. — **Billinge.** — METER, ETC. — Billinge U.D.C. invite tenders for the supply of a 3-in. water meter, a pipe-testing apparatus, and galvanised water tubing. Particulars on application to the Surveyor, Council Offices, Billinge.

MISCELLANEOUS.

JULY 26. — **Lymington.** — STEAM ROLLING.—The R.D.C. of Lymington invite tenders for the hire of steam rollers. Full particulars, etc., may be obtained of Mr. S. Crittall, Surveyor, Sway.

JULY 27.—**Manchester.**—CABLE.—Manchester Corporation Tramways Committee invite tenders for the supply of lighting cable. Specifications, etc., may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

JULY 28.—**Hull.**—ELECTRIC LIGHT FITTINGS.—Tenders are invited for the necessary electric and gas light fittings required for the new Public Hall. Plans of the building may be seen, and specifications obtained, at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull.

JULY 29.—**Barnet.**—FITTINGS.—Tenders are invited by the Committee for work in connexion with certain fittings at the Isolation Hospital, Barnet. Specifications may be seen at offices of Mr. Arthur [illegible] Pill, 13 and 15, High-street, Barnet.

JULY 29.—**Belfast.**—FURNITURE, ETC.—The Library and Technical Instruction Committee invite tenders for furniture and fittings (including plumbing) for the women's work department at the Municipal Technical Institute. Drawings, etc., can be obtained on application at the office of the Municipal Technical Institute. Drawings, etc., can be obtained on application at the office of the Municipal Technical Institute, daily, between 11 a.m. and 5 p.m. A charge of 10s. is made for drawings and specification.

AUGUST 2.—**Taunton.**—STEAM ROAD ROLLER.—The T.C. invite tenders for the supply and delivery of a 12-ton compound steam road roller. Full particulars and illustrations to accompany each tender. Mr. David Edwards, A.M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings, Taunton.

AUGUST 3. — **Malling.**—STEAM ROLLERS.—Malling R.D.C. invite tenders for the use of steam rollers and scarifiers. Forms, etc., from the Surveyor, Mr. John Marshall.

AUGUST 5. — **Hull.**—GATES.—Designs and tenders are invited for a set of wrought-iron entrance gates, etc., for the Pickering Park, Hull. With such designs and tenders may also be submitted designs and tenders for wrought-iron fencing, posts, and chains on the Park frontage. Further particulars may be obtained of the City Engineer, Hull.

AUGUST 9. — **London.** — CREOSOTING TELEGRAPH POLES.—Forms of tender, containing all particulars, may be obtained on application to Mr. G. Morgan, Controller of Stores, Stores Department, G.P.O., 17-19, Bedford-street, London, W.C.

AUGUST 14.—**Alton.**—STEAM ROLLER.—Alton U.D.C. invite tenders for the hire of a 10-ton steam road roller. Forms of tender may be obtained at office of Mr. W. Bradly Trimmer, Clerk to the Council, Alton.

PAINTING, etc.

JULY 26.—**Bradford.**—COLOURING.—The Education Committee invite tenders for limewashing, colouring, etc., required to be done at the Technical College. Specification, etc., may be obtained at the City Architect's Office, Whitaker-buildings, Bradford.

JULY 26.—**East Ham.**—PAINTING, ETC.—The Corporation invite tenders for the renovation of the Municipal Offices, Council Chamber, etc., situate at the corner of High-street South and Barking-road, East Ham. Particulars, form of tender, etc., may be obtained on application to Mr. A. H. Campbell, M.Inst.C.E., the Borough Engineer, at the Town Hall, East Ham, E.

JULY 26. — **Great Yarmouth.** — DISTEMPERING.—Distempering of ceilings and walls of the male and female infirmaries at the Great Yarmouth Workhouse. Particulars of the work can be obtained on application to the Master.

JULY 26.—**Manchester.**—PAINTING.—The Sanitary Committee invite tenders for painters' work at the Monsall Hospital. Specifications may be obtained at the office of the City Architect, Town Hall.

JULY 26. — **Richmond (Surrey).**—CONVENIENCE.—The T.C. invite tenders for the erection of a convenience (for men and women) and a store in the North Sheen Recreation Ground. Plans, etc., may be seen, and further particulars, with copies of specifications, etc., obtained, on application to the Borough Surveyor, Town Hall, Richmond, on depositing the sum of 1*l.* 1s.

JULY 26. — **Woking.**—PAINTING.—Woking U.D.C. invite tenders for the painting of the following buildings:—Cottages and stables at the Sewage Farm; four pumping stations; and the Fire Station, Commercial-road. Copies of the specifications, etc., may be obtained at the office of Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

JULY 27. — **Bradford.** — PAINTING.—The Bradford Corporation invite tenders for polishing and painting to shop fronts, windows, etc., at the Kirkgate Market. General conditions of contract may be seen, and specification, etc., obtained, on application to the City Architect, Whitaker-buildings, Bradford.

JULY 27.—**Liverpool.**—COLOURING, ETC.—The Royal Southern Hospital Committee invite tenders for washing, preparing, whitewashing, and colouring walls, ceilings, etc., painting, papering, etc. Copies of the specification may be obtained on application to the Superintendent at the Hospital.

JULY 27.—**Manchester.**—PAINTING.—The Paving, etc., Committee invite tenders for painters' work at the Tuer-street, Green-street, and Newton Heath Highways Yards. Specifications may be obtained at the office of the City Architect, Town Hall.

JULY 28.—**Glasgow.**—PAINTING, ETC.—The Corporation invite offers for the cleaning and painting work required at Pollokshields, Dixon, Kingston, Kinning Park, Springburn, Maryhill, and Hillhead Public Halls. Specifications, etc., may be had on application at the Office of Public Works, City Chambers, 64, Cochrane-street.

NO DATE.—**Smallwood.**—PAINTING, ETC.—Painting of the interior of Smallwood Church and for various decorations and repairs. References required, showing approved experience of similar church work. For particulars apply to Mr. R. W. Taylor, Ivy Farm, Smallwood or the Vicar.

NO DATE. — **Clayton.**—PAINTING.—Painting inside and out of Paddock Dyeworks, Clayton. Particulars at the Works.

ROADS, SANITARY, AND WATER WORKS.

JULY 26.—**Leeds.**—PAVING.—The Highways Committee invite tenders for the paving and flagging of Gladstone-terrace, Stanningley. Drawings may be seen at the City Engineer's Office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 156, Kirkstall-road, Leeds.

JULY 26.—**Prestwich.**—ROAD WORKS.—The U.D.C. invite tenders for sewering, levelling, paving, flagging, and other works required to complete five streets and for laying three 9-in. and 12-in. diameter pipe sewers within the district of Prestwich. The plans, etc., will be open for inspection at the office of the Surveyor, Chester Bank. Copies of the bills of quantities, etc., can be obtained from the Surveyor on payment of 2*l.* 2s.

JULY 27. — **Andover.** — KERBING AND PAVING.—Street kerbing and paving at Andover, in accordance with a specification which may be inspected upon applying to Mr. R. Walter Knapp, Borough Surveyor, Town Hall, Andover.

JULY 27. — **Bucknall.** — STREET WORKS.—Stoke R.D.C. invite estimates for the metalling, paving, channelling, and making-up of Chapel-street and William-street, Bucknall. Plans, etc., may be inspected on application to Mr. R. Arrowsmith, the Council's Surveyor, at his office, No. 1, "Sentinel" Buildings, Hanley.

JULY 27. — **Harlesden and Willesden.**—ROAD-MAKING.—For road-making and paving works for the

Digitized by Google

Willesden D.C. **Plans, etc., may be seen, and particulars obtained, upon application to Mr. O. Claude Robson, M.Inst.C.E., Engineer to the Council, Public Offices, Dyne-road, Kilburn.**

JULY 27.—**Ilford.**—PERMANENT WAY.—Ilford U.D.C. invite tenders for the construction of permanent way to the entrance and inside of their car-shed extensions in Ley-street, Ilford. Drawings may be seen, and copies of the specification, etc., obtained, at the office of the Engineer and Surveyor, Mr. H. Shaw, M.Inst.C.E., Town Hall, Ilford, on payment of a deposit of 2*l.* 2s.

JULY 27. — **Salford.** — PAVING.—Paving and completing certain streets. The plans may be seen, and forms of tender with quantities obtained, at the Borough Engineer's Office, Town Hall, Salford.

JULY 27. — **Sowerby Bridge.** — ROAD WORKS.—Sowerby Bridge U.D.C. invite tenders for labour required in making up Park-road. Forms of tenders, etc., may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

JULY 27. — **Sowerby Bridge.** — SETTS, ETC.—Sowerby Bridge U.D.C. invite tenders for setts, flags, and curbs required in making up Park-road. Forms of tender, etc., may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

JULY 27.—**Stockport.**—FILTER.—The Sewage Outfall Committee invite tenders for the manual and team labour and materials required in the erection of the brick walls and the laying of the concrete floor, etc., of a filter at the Sewage Disposal Works. Plans, etc., may be seen, and specification, etc., obtained, on application to Mr. John Atkinson, A.M.Inst.C.E., Borough Surveyor, Town Hall, Stockport.

* JULY 27. — **Willesden.** — ROAD-MAKING. — The Willesden D.C. invite tenders for certain road-making and paving works. See advertisement in this issue for further particulars.

JULY 28. — **Dublin.**—ROAD WORKS.—South Dublin R.D.C. invite tenders for road-making and other works in connexion with labourers' cottages according to plans, etc., which may be inspected at the Council's Offices. (Mr. T. J. Byrne, A.R.I.B.A., Surveyor to the Council, 1, James's-street, Dublin.)

JULY 28. — **Dunham Massey, Northenden.**—STREET WORKS.—Bucklow R.D.C. invite tenders for the works required in the levelling, paving, metalling, channelling, etc., of Wright-street, Huxley-street, and Clarke-street, Dunham Massey, and part of Brown-street (from Palatine-road to Queen's-street), Northenden. Plans, etc., can be seen, and all other information obtained from the Council's Surveyor, Mr. John MoD. McKenzie, Moosburn-buildings, Altrincham.

JULY 28.—**Felling.**—BOWLING GREEN.—The U.D.C. of Felling invite tenders for the levelling of ground for a bowling green and formation of rockery in the Recreation Ground, Felling. Plans, etc., may be seen at the office of the Surveyor any morning.

JULY 28.—**Greenwich.**—PAVING.—Greenwich B.C. invite tenders for paving the roadway and footways of Sherington-road and other works. Specification, etc., can be seen, and further particulars obtained, at the Borough Engineer and Surveyor's Office, Town Hall, Greenwich-road, S.E.

JULY 28. — **Middlewich.**—SEWERAGE.—Middlewich U.D.C. invite tenders for the laying and construction of sewers and other necessary works connected therewith in St. Anne's-road and Sutton-lane, Middlewich. Drawings, etc., can be inspected at the office of Mr. Frederick W. Stocks, F.S.I., the Council's Engineer, Town Hall, Middlewich.

JULY 29.—**Bootle, Cumberland.**—SANITARY WORK.—The Guardians of the Poor for the Bootle Union invite tenders for the relaying of the whole of the drains at the Workhouse, Bootle, together with the fixing of thirteen new water-closets, three urinals, and the building of a septic tank, etc. Plans may be seen, and copies of the specification obtained from Mr. W. Britton-Jones, Ravenglass, Cumberland, Surveyor to the District Council, upon depositing the sum of 1*l.* 1s.

JULY 30.—**Hull.**—ROAD WIDENING.—The Corporation invite tenders for the widening, sewering, flagging, macadamising, etc., of Southcoates-lane, between Holderness-road and Southcoates Farm. Forms of tender, etc., may be obtaned at the City Engineer's Office.

JULY 31.—**Chingford.**—STREET WORKS.—Chingford U.D.C. invite tenders for making-up, paving, kerbing, lighting, etc., the Forest-avenue, a portion of Gordon-road, and the cartway at the rear of Connaught-road, in accordance with plans, etc., prepared by the Council's Surveyor, Mr. J. T. Griffin, copies of which and form of tender may be obtained on application, and upon payment of a deposit of 2*l.* 2s. Mr. Leonard C. Bowen, Clerk to the Council, 34, Station-road, Chingford.

JULY 31.—**St. Annes-on-the-Sea.**—ROAD WORKS.—For the making-up of streets for the U.D.C. Plans, etc., may be seen, and quantities, etc., obtained, on application to the Surveyor, Council Offices, St. Annes-on-the-Sea.

AUGUST 2.—**Meriden.**—WATER SUPPLY, SHUSTOKE.—The R.D.C. of Meriden invite tenders for providing and laying about 4,900 yds. of 4-in. cast-iron pipes, with all necessary valves, hydrants, etc. The general conditions, specifications, etc., may be seen at office of Mr. A. W. Liggins, Clerk to the Council, 11, Priory-street, Coventry, and copies of quantities, etc., may be obtained on depositing the sum of 1*l.* 1s.

AUGUST 2.—**Taunton.**—TAR SPRAYING OF STREETS.—The T.C. invite tenders for the tar spraying of about one mile of side streets. Mr. David Edwards, A.M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings, Taunton.

AUGUST 3. — **St. Albans.** — MAKING-UP. — For making-up roads, etc., Fleetville District, for the St. Albans R.D.C. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the office of the Surveyor, Mr. Henry F. Mence, 11, St. Peter's-street, St. Albans, on payment of 1*l.* 1s.

AUGUST 4.—**Middleton.**—STREET WORKS.—The Corporation invite tenders for the private street works required to be done in Boarshaw-road (continuation) and Rectory-street. Plans may be seen, and specifications, etc., may be obtained, on application to Mr. Welburn, Borough Surveyor, Town Hall, Middleton.

AUGUST 5. — **Lichfield.** — DORTMUND TANK.—The Corporation of Lichfield invite tenders for the construction of a Dortmund tank at the Sewage Farm. Particulars may be obtained on application to Mr. W. B. Chancellor, City Engineer.

AUGUST 5.—**Oswestry.**—SEWAGE DISPOSAL WORKS.—The T.C. invite tenders for the construction of open settling tanks, detritus tanks storm-water tanks, percolating filters, effluent outfall, and other sewers, preparation of land, and other works. Drawings may be seen, and specification, etc., obtained, by application to Mr. G. William Lacey, M.Inst.C.M.E., Borough Engineer and Surveyor, Guildhall, Oswestry, on payment of a deposit of 2*l.* 2s.

AUGUST 9.—**Bedlington.**—SEWERAGE WORKS.—Bedlingtonshire U.D.C. invite tenders for the execution of sewerage works. Drawings, etc., may be seen, and quantities, etc., obtained, by appointment, at the office of the Surveyor of the Council, Mr. J. E. Johnston, Front-street, Bedlington.

* AUGUST 11. — **Hampstead.**—BED-PAN SINKS.—The Guardians of St. John, Hampstead, invite tenders for fitting-up three bed-pan sinks in the infirmary wards of the Hampstead Workhouse. See advertisement in this issue for further particulars

STONES, MATERIAL, AND STORES.

JULY 26.—**Dublin.**—OILS.—Dublin Corporation invite tenders for (approximately) a twelve months' supply of machinery oils for the Corporation Electricity Works, Pigeon House Fort, Dublin. Copies of the specification, with conditions of contract (price 8s.), can be obtained from the Town Clerk.

JULY 26. — **Feltham.**—GRANITE.—Feltham U.D.C. invite tenders for the supply of about 600 tons of granite. Forms of tender may be obtained from the Surveyor, Mr. R. T. Stewart, Town Hall Chambers, Feltham.

JULY 26. — **Horwich.** — GOODS.—Horwich U.D.C. invite tenders for the supply of goods and materials. Form of tender and particulars can be obtained on application to the Surveyor, Mr. Thomas Green, Council Offices, Horwich.

JULY 27.—**Neath.**—GRANITE, ETC.—The Corporation invite tenders for the supply of (*a*) granite or syenite, and (*b*) limestone metalling, for the year 1909-10. Copy of specification, etc., may be obtained on application to Mr. D. M. Jenkins, Borough Engineer, Neath.

JULY 27. — **Sevenoaks.** — MATERIALS.—Sevenoaks U.D.C. invite tenders for the supply of 40 or 50 tons of Kent rag stone chippings. Mr. Herbert J. Thompson, Clerk to the Council, U.D.C. Offices, Sevenoaks.

JULY 27. — **Sowerby Bridge.** — MATERIALS. — Sowerby Bridge U.D.C. invite tenders for setts, flags, and curbs required in making up Park-road. Forms, etc., may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

JULY 29. — **Holmfirth.** — MATERIALS.—Holmfirth U.D.C. invite tenders for the supply of the following materials, viz.:—About 1,600 yds. of 12-in. and about 400 yds. of 9-in. cast-iron sewerage pipes; about twelve 12-in. cast-iron pipes with junctions for connexions; about thirty cast-iron manholes for the above sewerage pipes. Mr. Harry Lomax, Clerk to the Council, 49, Huddersfield-road, Holmfirth.

JULY 30. — **Eastbourne.**—WOOD.—The Guardians invite tenders for the supply of 20 fathoms of first quality yellow Baltic deal ends. Forms of tender can be had on application to Mr. A. Hurst, Clerk, Avenue House, The Avenue, Eastbourne.

JULY 31.—**Manchester.**—PIPES.—Manchester Corporation Waterworks Committee invite tenders for the supply of about 940 tons of cast-iron water pipes, 24 inches diameter, with about 20 tons of special castings. Specifications, etc., may be obtained on application to the Secretary, Waterworks Offices, Town Hall, Manchester, on payment of 10s.

AUGUST 14.—**Alton.**—GRANITE.—Alton U.D.C. invite tenders for the supply of granite. Forms of tender may be obtained at office of Mr. W. Bradly Trimmer, Clerk to the Council.

AUGUST 31. — **Dublin.**—MATERIALS, ETC.—Tenders are required for the triennial contract for South Dublin from October 1, 1909, to March 31, 1911, in the Dublin Sub-District R. E. Office, Lower Castle-yard, Dublin. Forms of tender, etc., may be obtained on application at the above-named Royal Engineer Office, by letter, addressed to the Sub-District Commanding Royal Engineer, or in person.

NO DATE. — **Barnsley.** — BRICKS.—Tenders to deliver half a million bricks to Barnsley Station. Samples required. Prices, etc., to Mr. James Clarke, Secretary to Master Builders' Association, Blackburn-lane, Barnsley.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	Kesteven C.C. Educa. Com.	3*l.* 3s. per week.....	July 28

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*FREEHOLD LAND, PLANT AND MACHINERY, HAYES, MIDDLESEX—At the Mart	Jones, Lang, & Co.....	July 26
*CONTRACTOR'S PLANT, WALTON-ON-THAMES—On the Premises.....	Fuller, Horsey, Sons, & Cassell.....	Aug. 10
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	Aug. 11

Patents.

APPLICATIONS PUBLISHED.*

13,367 of 1908.—William Cross (Communication from G. W. Lorimer and H. C. Townsend, U.S.A.): Apparatus for cutting and mixing sand.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

21,528 of 1908.—Peter Kennedy Drever and Charles Hendry Whyte: A combined latch, bolt, and indicator for lavatories and the like.

22,000 of 1908.—William Hartley: Brushes for painting, varnishing, and the like.

23,927 of 1908.—William Alfred Cammell and George Cooper: Hangers for beams, rafters, and other timbers in buildings.

24,447 of 1908.—Hermann Bliederhauser: Sieve or screens.

24,879 of 1908.—John Henry Roper: Baths.

25,027 of 1908.—Wilhelm Widmann: Oxy-acetylene blow-pipes for soldering, brazing, metal-severing, and like purposes.

26,092 of 1908.—Charles Miles: Fixing together of prismatic blocks for flooring and paving.

26,828 of 1908.—Robert Alwyn Arnold Stephen Piercy: Stagings or supports for submarine boring, blasting, pile-driving, block-setting, and like operations.

5,307 of 1909.—Walter Tully: Road cleaners.

Digitized by Google

SOME RECENT SALES OF PROPERTY: ESTATE EXCHANGE REPORT.

July 3.—By SALTER, SIMPSON, & SONS (at Norwich).
Ashill, Norfolk.—Old Hall and Reeves Farms, 169 a. 0 r. 29 p., f. £5,510

July 8.—By JOHN G. VILLAR (at Cheltenham).
Shipton Oliffe, Glos.—Shipton Manor Estate, 368 acres, f. 9,000

By WALTON & LEE (at Newcastle-upon-Tyne).
Newton, Northumberland.—Outlying portions of Newton Hall Estate, 1,059 a., f. (in lots) 36,670

By MADDISON, MILES, & MADDISON (at Acle).
Acle, Norfolk.—Freehold shop and house 900
Farm and accommodation land, 31 a. 1 r. 30 p., f. 1,230
East View, f. 500

By FRANK PARSONS & Co. (at Banbury).
Barford St. Michael, Oxon.—The manor house and 24 a. 1 r. 32 p., f. 850

July 9.—By WINTERTON & SONS (at Lichfield).
Burntwood, Staffs.—Ashmore Brook Farm, 47 a. 3 r. 9 p., f. and c. 2,600
Lichfield, Staffs.—Freehold accommodation land, 4 acres. 186
57, 59, and 61, St. John-st., f. 550

By WILLIAM FOWLER & BEWLAY (at Stratford-on-Avon).
Pebworth, Glos.—Fruit farm, 75 a. 1 r. 37 p., f. 1,850

July 10.—By VERNON & SON (at Gerrards Cross).
Gerrards Cross, Bucks.—Bulstrode Way, freehold land, 1 a. 1 r. 725
Seer Green, Bucks.—Two Yew Trees Cottage, f. 295

July 12.—By BUCKLAND & SONS.
Acton.—1 to 10, Adams Cottages and Kosicot, f., gross rental 221*l.* 2,500
Clapham.—59 to 62, Park-cres., u.t. 42 yrs., g.r. 10*l.* 2s., gross rental 91*l.* 14s. 770
6, 8, and 10, Crescent-rd., u.t. 40 yrs., g.r. 9*l.*, gross rental, 81*l.* 6s. 690

By CRONKS.
Chelsea.—1, Upcerne-rd., u.t. 68 yrs., g.r. 6*l.* 16s., y.r. 36*l.* 330

By MIDDLETON & CRACKNELL.
Hampstead.—51, Upper Park-rd., u.t. 41 yrs., g.r. 7*l.* 7s., p. 205

By ROGERS BROS.
Brixton.—54, Shakespeare-rd., u.t. 58 yrs., g.r. 6*l.*, w.r. 36*l.* 8s. 235

By J. HANNAFORD & SON (at Chagford).
Drewsteignton, Devon.—Coombe Farm, 63 a. 0 r. 25 p., f. 1,360

By AMOS DUERDEN (at Clitheroe).
Mytton, Yorks.—Scott House Farm, 101 a. 3 r. 25 p., f. 4,250

By THORNBOROW & SON (at Sournook).
Castle Sowerby, Cumberland.—Thackmere Farm, 48 a. 0 r. 24. p., f. and c. 900
Skelton, Cumberland.—Sun Inn and 15 a. 1 r. 36 p., f. 1,03

July 13.—By FLICK & SON.
Bow.—18, Gawthorn-st., u.t. 38½ yrs., g.r. 3*l.* 5s., w.r. 32*l.* 10s. 150
Old Ford.—95 to 101 (odd), Usher-rd., f., w.r. 135*l.* 4s. 1,100
Poplar.—29, Eglington-rd., f., w.r. 33*l.* 16s. 325
Stratford.—2, Union-ct., f., w.r. 24*l.* 14s. 150
Leytonstone.—41, Holloway-rd., f., w.r. 24*l.* 14s. 150
525, High-rd. (s.), f., y.r. 50*l.* 800

By FURBERS'.
Norwood.—171 and 173, Selhurst-rd., f., y.r. 62*l.* 500
Dulwich.—79, Friern-rd., u.t. 82 yrs., g.r. 6*l.* 10s., y.r. 36*l.* 300
Bow.—128 and 130, Devons-rd., f., w.r. 52*l.* 345
Maida Vale.—43 and 44, Elgin-ter., u.t. 52½ yrs., g.r. 16*l.*, y. and e.r. 90*l.* 440

By HOLCOMBE, BETTS, & WEST.
Paddington.—15 to 20, Princes Mews, and 15, Somers Mews, u.t. 43 and 27 yrs., g.r. 75*l.*, y.r. 217*l.* 850
Marylebone.—75, 77, and 79, East-st., 4 and 5, York Mews South, u.t. 13 yrs., g.r. 46*l.*, w.r. 330*l.* 17s. 790
134 and 136, Marylebone-rd., u.t. 11½ yrs., g.r. 50*l.*, y. and e.r. 200*l.* 610
28 and 29, Allsop-st., u.t. 11½ yrs., g.r. 10*l.*, y. and e.r. 60*l.* 165

By HUNTER & HUNTER.
City.—4 and 5, Silver-st., f.g.r. 380*l.*, reversion in 9½ yrs. 15,000
Fulham.—22 and 23, Delaford-st., u.t. 70 yrs., g.r. 10*l.* 10s., w.r. 93*l.* 12s. 370
1, Pellant-rd., u.t. 68 yrs., g.r. 3*l.* 10s., w.r. 52*l.* 300
Hammersmith.—2, Westville-rd., f., w.r. 37*l.* 14s. 285

By MAPLE & Co.
Bloomsbury.—54, Russell-sq., u.t. 30 yrs., g.r. 80*l.*, p. 850

By OFFER & OFFER.
Pimlico.—25, South Eaton-pl., u.t. 14½ yrs., g.r. 8*l.*, e.r. 80*l.* 300

By THOMAS SHARP.
Canning Town.—116, Rathbone-st. (s.), f., w.r. 39*l.* 250
Plaistow.—37, Terrace-rd., f., w.r. 33*l.* 16s. 330
19, Victoria-rd., f., w.r. 20*l.* 16s. 210
Bromley.—35, Wyvis-st., u.t. 56 yrs., g.r. 3*l.* 15s., w.r. 33*l.* 16s. 170

By S. & G. KINGSTON (at Spalding).
Deeping St. Nicholas, Lincs.—Toll Bar Farm, 205 a. 0 r. 14 p., f. 12,100

By ALFRED PRESTON (at Ipswich).
Ringshall, Suffolk.—Stoke Farm, 50 a. 3 r. 26 p., f. and l. 950
Nayland Farm, 60 a. 1 r. 8 p., f. and l. 1,010
Great Finborough, Suffolk.—High-st. Green Farm, 143 a. 3 r. 25 p., f. 2,350

By MOORE, GARRARD, & SON (at Ipswich).
Brundish, Suffolk.—Brundish Hall and 139 a. 0 r. 28 p., f. 2,040
Church-la., cottage and 5 a. 2 r. 39 p., f. 145

By WARNER, SHEPPARD, & WADE (at Sapcote).
Sapcote, Leicester.—Kirbys, Tuckeys farms and enclosures, 425 acres, f. £13,695

July 14.—By ARTHUR BARTON.
Lee.—21, Turner-rd., u.t. 47 yrs., g.r. 2*l.* 10s., y.r. 28*l.* 225

By BEALE & CAPPS.
Notting Hill.—Bangor-st., f.g.r. 6*l.*, reversion in 57 yrs. 120
Edgware.—East-rd., two plots of land, f. 100

By FRANK EDWARDS & Co.
Southall.—5 and 13, West End-rd., f., w.r. 52*l.* .. 520

By HUMBERT & FLINT.
Piccadilly.—12, Stratton-st., f., p. 9,100
Ilmer, Bucks.—Ilmer or Upper Farm, 267 a. 0 r. 26 p., f. 5,200

By W. J. PALMER.
Wood Green.—Bradley-rd., f.g. rents 22*l.*, reversion in 71 yrs. 485

By RUTLEY, SON, & VINE.
Kilburn.—2, Malvern-rd. (s.), u.t. 54 yrs., g.r. 8*l.*, y.r. 55*l.* 685
Notting Hill.—12, William-st., u.t. 37 yrs., g.r. 5*l.*, w.r. 40*l.* 6s. 260
Regent's Park.—69, Gloucester-rd. (s.), u.t. 43 yrs., g.r. 10*l.*, y.r. 47*l.* 300

By WALTON & LEE.
Shoeburyness.—Linton-rd., Lyndhurst, f., y.r. 55*l.* 1,000

By WINCH & SONS.
Cranbrook, Kent.—Ashdown-rd., orchard land, 30 a. 1 r. 31 p., f. 1,150

By HAMPTON & SONS.
Studham, Herts.—Barwythe and 92 acres, f. ... 20,000
East Harting, Sussex.—Marden Farm, 113 a. 0 r. 7 p., f. 3,000
Hollist Farm, 7 a. 0 r. 5 p., f. 550
Freehold shop and house, also ten cottages .. 1,225

By ALFRED PRESTON (at Halesworth).
Laxfield, Suffolk.—Grove Farm, 133 a. 3 r. 26 p., f. 1,585
Cratfield, Suffolk.—Oaks Farm, 70 a. 2 r. 29 p., f. 825

July 15.—By DAVID BURNETT, SON, & BADDELEY.
Bedford Row.—28, John-st. (offices), f., y.r. 180*l.* 3,600
West Smithfield.—19, Long-la., (business premises), f., y.r. 115*l.* 2,150
Peckham.—178 and 180, High-st., (s.), u.t. 53 yrs., g.r. 17*l.* 15s., y.r. 68*l.* 510

By COCKETT & HENDERSON.
Wanstead.—Standstead-rd., Surat, f., e.r. 40*l.* .. 330

By GLASIER & SONS.
Leicester Square.—No. 23, f.g.r. 180*l.*, reversion in 25½ yrs. 4,600
No. 29, f.g.r. 250*l.*, reversion in 26½ yrs. 6,710

By W. HALLETT & Co.
Maida Vale.—40, Warwick-av., u.t. 38 yrs., g.r. 10*l.*, e.r. 120*l.* 530
18, Clifton-villas, u.t. 41 yrs., g.r. 12*l.*, e.r. 80*l.* 650

By A. R. PEACEY.
Kentish Town.—88, Queen's-cres., (s.), u.t. 55 yrs., g.r. 8*l.*, y.r. 85*l.* 1,060

By C. C. & T. MOORE.
Whitechapel.—Commercial-st., The Baptist Chapel, area 7,650 ft., f. 6,600
Clapton.—4, Cross-rd., f., y.r. 30*l.* 385
Hackney.—2 and 4, Milborne-st., f., w.r. 48*l.* 2s. 420
170, Cassland-rd., u.t. 35 yrs., g.r. 4*l.* 4s., w.r. 37*l.* 14s. 210
1, Glaskin-rd., u.t. 46 yrs., g.r. 3*l.* 10s., w.r. 52*l.* 365
Victoria Park.—69, Gore-rd., u.t. 46 yrs., g.r. 7*l.*, y.r. 40*l.* 345
Stoke Newington.—55 and 57, Victoria-gr., West, u.t. 34 yrs., g.r. 6*l.*, w.r. 50*l.* 14s. 285
Stepney.—264 and 266, Oxford-st., u.t. 15 yrs., g.r. 8*l.*, w.r. 76*l.* 14s. 165

By J. C. PLATT.
Chiswick.—15, Blandford-rd., f., e.r. 37*l.* 400
Gunnersbury.—11 and 13, Cambridge-rd., u.t. 51¼ yrs., g.r. 8*l.*, y.r. 56*l.* 375
Marylebone.—7, Candover-st. (s.), u.t. 12¾ yrs., g.r. 14*l.*, e.r. 120*l.* 140
Hammersmith.—2, 4, and 6, Lamington-st., u.t. 26½ yrs., g.r. 9*l.*, w.r. 91*l.* 340
203 and 205, Dalling-rd., u.t. 76 yrs., g.r. 12*l.*, w.r. 88*l.* 550
Clapham Common.—64, Elms-rd., u.t. 71 yrs., g.r. 8*l.* 8s., e.r. 50*l.* 365

By ROGERS, CHAPMAN, & THOMAS.
Chelsea.—8 and 9, Godfrey-st., f., w.r. 63*l.* 14s. 850

By STIMSON & SONS.
Camberwell.—60 and 62, Flaxman-rd. (s.), u.t. 55 yrs., g.r. 16*l.*, y.r. 80*l.* 520
Cambria-rd., f.g.r. 12*l.*, reversion in 32 yrs. .. 325
Wickwood-st., l.g.r. 22*l.* 10s., u.t. 55 yrs., g.r. nil 365
189, Coldharbour-la., f., y.r. 45*l.* 620
1, 3, 7 to 13 (odd), Vaughan-rd., f., y., and w.r. 199*l.* 1,755
Vaughan-rd., f.g.r. 5*l.*, reversion in 32 yrs. 135
Walworth.—38, 46, and 50, Carter-st., f., yr. 115*l.* 1,200
Peckham.—28, Grummant-rd., f., w.r. 41*l.* 12s. 305
11 and 13, Camden-gr., f., y. and e.r. 68*l.* 705
68 to 74 (even), Lyndhurst-gr., f., y.r. 116*l.* .. 1,290
70 to 76 (even), Danby-st., f., w. and e.r. 156*l.* 1,310
7, 9, 11, 27 to 39, Chadwick-rd., f., w.r. 310*l.* 16s. 2,995

By TAYLOR & Co.
Battersea.—103 and 105, Ingrave-st., u.t. 40 yrs., g.r. 6*l.*, w. and e.r. 58*l.* 280
80, Wadhurst-rd., u.t. 19 yrs. g.r. 2*l.* 10s., w.r. 28*l.* 12s. 115

By EDWIN EVANS & SONS (at Lavender Hill).
Wimbledon.—15 to 27, 31 to 37 (odd), Revelstoke-rd., f., w.r. 351*l.* 14s.; also f.g.r. 6*l.* .. 3,600
Fulham.—27 and 35, Fernhurst-rd., u.t. 80 yrs., g.r. 11*l.*, y. and e.r. 74*l.* 550

By STEPHENSON & ALEXANDER (at Cardiff).
Lavernock, Glam.—Sutton Farm, 30 a. 0 r. 23 p., f. 3,860

July 16.—By JOHN H. BULMER.
Rotherhithe.—27, 29, 31, 50, and 52, Ainsty-st., f., w.r. 87*l.* 2s. £530
6, Seth-st., f., w.r. 22*l.* 2s. 160
32 and 38, Swan-la., f., w.r. 50*l.* 14s. 400

By MARSH & PARSONS.
St. James.—29, Bury-st., u.t. 40 yrs., g.r. 85*l.*, y.r. 280*l.* 1,975

By SKELDING & HOLLAND.
Catford.—94, Bargery-rd., u.t. 94 yrs., g.r. 7*l.* 10s., e.r. 38*l.* 335

By E. & S. SMITH.
Islington.—10, St. Paul-st., u.t. 17½ yrs., g.r. 4*l.* 4s., y.r. 34*l.* 145

By R. & A. SWAIN.
Kensington.—15, Durham-pl., f., y.r. 38*l.* 490
29, Kensington-pl., u.t. 40 yrs., g.r. 5*l.*, y.r. 34*l.* 335
27, Campden-st., u.t. 14½ yrs., g.r. 4*l.* 10s., y.r. 30*l.* 135

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons.....	1 4 6	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing..	5 0 0	" " "
Best Blue Pressed Staffordshire ...	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers.....	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers...	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End.....	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers.....	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers...	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End.....	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement.....	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt.....	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt.....	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks ...	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks.	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.).....	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "

Digitized by Google

STONE (*continued*).

YORK STONE—(*Robin Hood Quality*) *continued*—

3 in. sawn two sides slabs (random sizes)	0	11½	per ft. super. deld. ry dep.
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "
HARD YORK—			
Scappled random blocks.	3	0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	18	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000, at rly. depôt.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—						
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
" " 3 in. by 9 in.	13	10	0	14	0	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
" " 3 in. by 9 in.	12	10	0	13	10	0
Battens	10	0	0	11	0	0

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £	s.	d.	£	s.	d.
Pitch-pine: deals	18	0	0	21	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak logs—						
Large, per ft. cube	0	3	0	0	3	9
Small " "	0	3	6	0	3	6
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½
¼ in. do. do	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0
Selected, Figury, per ft. super. as inch	0	1		0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak per load	17	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0
Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. " "	0	14	0	0	18	0
¾ in. by 7 in. white " "	0	10	0	0	11	6
1 in. by 7 in. " "	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	10	0	0
Flitch Plates	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	8	10	0

METALS.

IRON—	Per ton, in London. £	s.	d.	£	s.	d.
Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars"	10	10	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
" " Galvanised	17	0	0	—		
(*And upwards, according to size and gauge.)						
Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0	—		
" " 24 g.	10	15	0	—		
" " 26 g.	12	5	0	—		
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	—		
Ordinary sizes to 22 g. and 24 g.	15	10	0	—		
" " 26 g.	14	10	0	—		
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0	—		
" " 22 g. and 24 g.	18	10	0	—		
" " 26 g.	20	0	0	—		
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	—		
" " 22 g. and 24 g.	14	15	0	—		
" " 26 g.	16	5	0	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	—		
" " " 26 g.	15	0	0	—		
Cut Nails, 3 in. to 6 in.	10	10	0	11	0	0
(Under 3 in., usual trade extras.)						

LEAD, &c.	Per ton, in London. £	s.	d.	
LEAD—Sheet, English, 3lb. and up.	16	5	0	—
Pipe in coils	16	15	0	—
Soil pipe	18	15	0	—
Compo pipe	19	15	0	—
ZINC—Sheet—				
Vielle Montagne	26	10	0	—
Silesian	26	5	0	—
COPPER—				
Strong sheet per lb.	0	1	0	—
Thin " "	0	1	1	—
Copper nails "	0	0	10	—
Copper wire "	0	0	10	—
BRASS—				
Strong Sheet "	0	0	11	—
Thin "	0	1	0	—
TIN—English Ingots "	0	1	5	—
SOLDER—Plumbers' "	0	0	7	—
Tinmen's "	0	0	9½	—
Blowpipe "	0	1	0	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
oz. thirds	4½d. " "
" fourths	4½d. " "
Flute Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
¼ "	2½d. " "
⅜ "	2½d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.	£	s.	d.
Raw Linseed Oil in pipes per gallon	0	2	2
" " in barrels "	0	2	3
" " in drums "	0	2	6
Boiled " in barrels "	0	2	6
" " in drums "	0	2	9
Turpentine in barrels "	0	2	10
" in drums "	0	3	0
Genuine Ground English White Lead per ton	20	10	0
Red Lead, Dry "	20	0	0
Best Linseed Oil Putty per cwt.	0	7	0
Stockholm Tar per barrel	1	12	0

VARNISHES, &c. Per gallon.	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERGAVENNY.—For colouring and painting the interior of Hereford-road Council school, for the managers. Mr. J. Bain, County Architect:—

J. G. Thomas & Sons	£224 10 0	C. Price & Son Abergavenny‡	£13 15 0
Gwatkin Bros. & Co.	15 0 0	H. T. Haviland	12 5 6

‡ Recomended for acceptance.

ACTON.—For making up footpaths in Julian-avenue and Shalimar-gardens, and reconstructing sewers at the side of No. 242, High-street, for the Urban District Council. Mr. D. J. Ebbetts, Surveyor, 57, High-street, Acton. Quantities by: Footpaths, done in office; Sewers Mr. R. L. J. Bedford, 48, Julian-avenue, Acton, W.:—

Making up Footpaths Julian-avenue.

Atlas Stone Co., Ltd., Coldhams-lane, Cambridge* £143 16 8

Making up Footpaths Shalimar-gardens.

Atlas Stone Co., Ltd., Coldhams-lane, Cambridge* £31 6 5

Sewer at side of 242, High-street, Acton.

H. Morecroft, 14, Twyford-crescent, Acton, W.* £100 0 0

ACTON.—For interior and exterior painting of the Acton County School, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

W. Blackburn	£339 0	Ferris Bros.	£230 0
Poore & Son	267 9	G. Bollom‡	221 15
F. W. Mitchell	241 0		

‡ Recommended for acceptance.

BARNET.—For new County Council school, for Hertfordshire County Council:—

B. E. Nightingale	£7,946 0 0
C. Miskin & Son	7,823 0 0
J. Guttridge & Son	7,268 0 0
J. Honour & Son	7,173 16 8
C. H. Gibson & Son	6,747 0 0
Thomas & Edge	6,594 0 0
F. Hitch	6,562 0 0
G. Henson & Son	6,546 15 8
Hacksley Bros.	6,522 0 0
W. Wallis, Ltd.	6,450 0 0
W. Lawrence & Son	6,446 0 0
P. R. Paul	6,395 0 0
C. H. Hunt & Son	6,391 0 0
Bosworth & Lowe	6,353 7 2
G. Jaggard	6,300 0 0
T. Higgs	6,196 0 0
J. Parren & Son, Earith, Hunts.*	5,993 0 0

BEDFORD.—For drainage contract No. 3, including building alterations at the Workhouse, for the Guardians. Mr. H. Young, architect and surveyor, Bedford:—

W. Laughton, Bedford* £244

BRADFORD.—For erecting a dairy in Usher-street, Wakefield-road, for the City of Bradford Co-operative Society, Ltd. Mr. W. Rycroft, architect, Bank Buildings Manchester-road, Bradford:—

Masons: J. Moulson & Son, Ltd.
Joiners: W. H. Dyer & Son
Plumbers: M. Sling r & Son
Slaters: Hill & Nelson
£1,244 0 0

[All of Bradford.]

BRIGHTON.—For installation of the electric light in the Ditchling-road Council school, for the Education Committee. Messrs. T. Simpson & Son, surveyors, 16 Ship-street, Brighton:—

G. Virgo	£248 10 0	Page & Miles	£207 10
Reed & Sons	234 9 6	Adams Bros.*	198 12 6

[All the tenderers were local firms.]

Digitized by Google

BRIGHTON.—For summer repairs, painting, etc., to schools, for the Education Committee. Messrs. T. Simpson & Son, surveyors, 16, Ship-street, Brighton:—

Elm-grove School (Exterior and Interior Painting).

J. Barnden	£865	Gates & Sons*	£275
Geering & Sons	329		

Hanover-terrace School (Interior Painting).

Bell & Son	£231 13 6	J. Barnden	£157 17 6
Geering & Sons	198 0 0	C. Duke	126 0 0
Gates & Sons	197 10 0	W. Saunders*	117 17 2

St. Luke's-terrace School (Caretaker's House).

J. Barnden	£5 7 6	Gates & Sons*	£4 3 9
J. Webb	5 7 6		

Canteen, Richmond-street School (Improvements to Floor, etc.).

G. R. Lockyer	£76 10	Holloway Bros.	£63 19
Barnes & Son	75 15	Saunders Bros.*	59 5

Finsbury-road School (Communication Gateway).

Barnes & Sons	£7 17	G. R. Lockyer*	£5 19
Saunders Bros.	5 19		

Carpenters' Shop (Electric Light Installation).

Adams Bros.	£12 0 0	G. Virgo	£9 0 0
Page & Miles	10 6 8		

BROMLEY.—For redrainage of Raglan-road Council Schools, for the Education Committee. Mr. Stanley Hawkings, Engineer, Municipal-buildings, Bromley, Kent:—

H. Crossley	£99 10	Wilson, Border & Co.	£81 16
W. Beattie	96 14	T. D. Gracy, Bromley*	67 0
Hyde & Co.	87 0		

BRYNAMMAN.—For (1) Providing and laying complete about 1,056 yards of stoneware sewers, nine inches in diameter, with manholes and other work connected therewith at Park-street and Brynamman-road, Brynamman, for the Pontardawe Rural District Council; and (2) for works at Gwaun-cae-Gurwen, Pontardawe, and Alltwen and Clydach:—

W. J. Griffiths, Pontardawe £458 18 0

BUTLERS MARSTON (Warwickshire).—For the erection of a pair of cottages. Mr. A. E. Allen, architect, 31a, Bridge-street, Banbury:—

A. R. Gilks	£325 0	T. Cherry & Son,	
Sumner & Neale	297 0	Cropredy*	£294 10

CARLINGHOW.—For erecting conveniences at Council Schools, for Batley Education Authority. Mr. Oscar J. Kirby, Borough Engineer, Town Hall, Batley:—

B. Farrar, 16, Brownhill, Batley £358 10 0

CHORLEY.—For waterworks (Contract No. 1, waterpipes), for Nantwich Rural District Council. Mr. C. E. Davenport, A.M.Inst.C.E., 152, Hospital-street, Nantwich:—

Pipes: Cochrane & Co., Woodside, Dudley* £140 0 0
Fittings: Blakeborough & Sons, Brighouse* 7 7 9

COVENTRY.—Raising roof over part of machine shop, for Messrs. Alfred Herbert, Ltd. Messrs. Tait & Herbert, architects, Leicester and Coventry:—

Moss & Sons, Ltd.	£838	J. G. Gray	£671
Wellerman	684	F. Elliott	662

DUNSTABLE.—For 1,660 lineal yds. of 9-in. pipe sewers, for the Corporation. Mr. J. Diggle, C.E., Heywood:—

Dean & Perkins	£1,300 19 11
Atkins	1,215 16 7
Wickstead & Beardsell	1,212 4 7
Morgan & Son	1,192 15 4
Williams	1,154 19 9
R. Swaker	1,141 5 4
Williams & Farley	974 6 6
Willey & Co.	970 18 9
W. Wilmot	968 8 0
R. Breber & Co.	959 10 0
W. Jackson	936 17 5
H. Higgs, Dunstable*	864 13 3

ENFIELD.—For fencing land at London-road, Enfield, for the Metropolitan Water Board:—

	per yard. s. d.
A. & J. Main & Co., Ltd.	7 4
W. Bain & Co., Ltd.	6 8
Hill & Smith	5 9
Bayliss, Jones, & Bayliss	5 6

ENFIELD.—For laboratory fittings for the Enfield County School, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

North of England School Furnishing Co.	£347 0
Treasure & Son	319 0
Bennett Furnishing Co.	316 15
G. M. Hammer & Co.‡	310 0

‡ Recommended for acceptance.

FRIMLEY.—For improvements, Sturt-lane, for the Urban District Council. Mr. T. Clement Jones, C.E., Engineer and Surveyor to the Council, Municipal-buildings, Camberley:—

W. H. Wheeler & Co., Ltd., Blackfriars-road, S.E.* £338 18 4

GILLINGHAM (Kent).—For extending Byron-road and Richmond-road Council Schools, for the Education Committee. Mr. J. L. Redfern, A.R.I.B.A., Borough Surveyor, Council Offices, Gardiner-street, Gillingham. Quantities by Surveyor:—

	Byron-road.	Richmond-road.
H. E. Phillips	£1,950	£920
West Bros.	1,775	789
F. & G. Foster	1,683	827
G. Baker & Son	1,599	689
G. Gates & Sons, Strood*	1,585	689
L. Seager	1,419	653

GUILDFORD.—For house at South Hill, Guildford, for Mr. W. R. Philpot. Messrs. F. J. Hodgson & W. Symmonds, architects, etc., 100, High-street, Guildford:—

For House.

Swayne & Son	£845	Tribe & Robinson	£780
R. Smith	827	A. Johnson	773
S. Ellis	815	Rutter & Gibson*	690
Higlett & Hammond	795		

[All of Guildford.]

For Hot-Water Service.

R. Smith	£36 0	Tribe & Robinson	£25 0
S. Ellis	33 10	A. Johnson	17 10
Higlett & Hammond	28 10	Rutter & Gibson*	10 10

GUILDFORD.—For new buildings over refuse destructor plant, Bell Fields, Stoke, for the Town Council. Mr. C. G. Mason, A.M.Inst.C.E., Borough Engineer and Surveyor, Tuns Gate, Guildford:—

F. & H. Higgs	£4,065	Martin, Wells, & Co.	£3,965
D. Fry	4,040	R. Wood & Son	3,953
W. Bullen	4,018	F. & G. Foster	3,945
Tribe & Robinson	3,995	Rowland Bros.	3,886
Manlove, Alliott, & Co., Ltd., Nottingham*	3,990	Crosby & Co.	3,878
		Drowley & Co.	3,816

HAINE (near Ramsgate).—For alterations and additions at the receiving block, Isle of Thanet Joint Hospital, for the Hospital Board. Mr. H. B. Langham, architect, Bank Chambers, Broadstairs:—

J. S. Ward	£755 0 0	G. Miriams	£659 0 0
L. Seager	719 0 0	Paramor & Sons	650 0 0
J. R. Baker	708 12 0	J. F. May	602 11 8
Paramores, Ltd.	699 10 0	J. W. Woodhall & Son	587 10 0
J. R. Forewalk	685 0 0	A. E. Goodbourn	520 0 0
W. J. Ballard & Co.	673 10 0	J. E. White, Ramsgate*‖	486 0 0
G. J. Attwood & Co.	668 0 0		
J. R. Rattray	665 6 0		

HALE (Cheshire).—For making up of Nursery-avenue, for the Urban District Council. Mr. S. A. Pickering, Surveyor, Council Offices, Ashley-road, Hale:—

Wellerman Bros.	£627 11 6
J. Hamilton & Son	559 0 0
G. Boxson	526 18 0
Mitchell & Son	521 0 0
G. Ward, Cook, & Co.	502 8 0
G. Woodfine	487 15 4
Bethell & Sons	475 15 4
F. Sheeren, Cornbrook, Manchester*	429 6 7

HARROW.—For new county school at Harrow, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

G. Neal	£15,550	Holloway Bros.	£14,600
Holliday & Greenwood	15,400	C. F. Kearley	14,484
Rider & Son	15,218	Perry Bros.	14,397
Mattock Bros.	14,987	F. & H. Higgs	14,320
Appleby & Sons	14,915	Mattock & Parsons	14,274
W. Johnson & Co.	14,721	Treasure & Son	14,138
F. G. Minter	14,687	Lawrence & Son	13,822
		Knight & Son‡	13,336

‡ Recommended for acceptance.

HARROW.—For new Council School, at Harrow, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

Mattock Bros.	£10,100	A. Porter	£8,779
G. Neal	9,690	F. Gough & Co.	8,699
W. Tout	9,246	W. Lacey	8,647
C. F. Kearley	9,095	W. J. Dickens	8,602
H. Haynes	9,000	W. Lawrence & Son	8,482
W. J. Renshaw	8,988	Treasure & Son	8,410
Rowley Bros.	8,905	Knight & Son‡	8,121

‡ Recommended for acceptance.

HULL.—For painting, colouring, whitewashing, etc., certain schools, for the Education Committee:—

External Painting.

Boulevard School: J. Simpson & Sons, Ltd.	£70 0 0
Central School: Crawford & Credland	64 10 0
Estcourt-street School: Crawford & Credland	44 10 0
Newland-avenue School: F. A. Wells	38 10 0
Northumberland-avenue School: J. G. Lightowler & Son	40 0 0
Sir H. Cooper's School: J. Codner & Son	36 0 0
West Dock-avenue School: J. Y. Torr & Sons	39 10 0
Technical College: T. Shaw	54 10 0

Colouring, Whitewashing, etc.

Chapman-street School: A. Christopher	£78 0 0
Chiltern-street School: J. Y. Torr & Sons	59 10 0
Mersey-street School: C. S. Drury & Sons	67 10 0
Middleton-street School: J. G. Lightowler & Son	62 0 0
Paisley-street School: J. Codner & Son	65 0 0
Westbourne-street School: J. Codner & Son	66 0 0

Lime-washing Out-Offices, etc.

Yorkshire Whitewashing Co. (Contract No. 1)	£13 10 0
R. West (Contract No. 4)	6 0 0
R. West (Contract No. 5)	5 0 0

ILFORD.—For levelling, metalling, and making good Ladysmith-avenue, for the Urban District Council. Mr. H. Shaw, M.Inst.C.E., Surveyor, Town Hall, Ilford:—

Parsons & Parsons, Ilford Wharf* .. £278 7 10

ILFORD.—For private street works, Paget-road, for the Urban District Council. Mr. H. Shaw, M.Inst. C.E. Surveyor, Town Hall, Ilford:—

Parsons & Parsons, Ilford Wharf* £238 10 1

ISLEWORTH.—For interior and exterior painting of the Green school, Isleworth, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

J. Dorey & Co.	£188 0	W. Lacey	£145 0
D. D. Heath	149 0	W. Blackburn	139 10
Poore & Son	147 12	J. B. Jamieson‡	132 0

‡ Recommended for acceptance.

ITCHEN.—For surface water drainage at Muddy Bottom and Brickyard-hill, Sholing, for the Urban District Council. Mr. T. A. Collingwood, Surveyor Council Offices, Portsmouth-road, Woolston, near Southampton:—

Grounds & Newton	£198 12 6	F. Osman, Commercial-road, Four Posts, Southampton*	£156 10
F. W. Pettit	190 6 8		
J. Douglas	159 0 0		

KEPWICK.—For taking down the tramway bridge in Kepwick Bank, removing same, and rebuilding over Brenk Beck, for Thirsk Rural District Council. Mr. R. R. Wright, Surveyor, Thirsk:—

C. Kirk, Barrowby, near Thirsk, Yorks* £85 0 0

KILBURN.—For laboratory fittings for the Kilburn Grammar School, for the Middlesex County Council. Mr. H. G. Crothall, Architect to the Education Committee:—

W. Lawrence & Son	£174 0 0	North of England School Furnishing Co.†	£171 0 0
Hammer & Co.	173 0 0		
Bennett Furnishing Co.	171 1 8		

† Recommended for acceptance.

KINGSWEAR.—For laying 220 yds. of 9-inch cast-iron pipe and other work at Kingswear, for the Totnes Rural District Council. Mr. W. F. Tollit, architect, 10, High-street, Totnes:—

Harding & Sons	£265 0	J. E. Short, Kingswear*	£230 10

LEICESTER.—For new heating chamber, Leicester Museum and Art Gallery. Messrs. Tait & Herbert, architects, Leicester and Coventry:—

J. C. Kellett	£600	W. Smith	£587
A. & W. Chambers	598	F. Elliott*	576
Tyers & Yates	595		

LONDON.—For laundry and housewifery centres Dalgleish-street, Limehouse, for the London County Council:—

A. E. Symes	£1,968 0 0
C. P. Roberts & Co.	1,948 0 0
Newell & Lusty	1,914 6 5
Friday & Ling	1,900 1 10
L. Kazak	1,857 3 9
Griggs & Son	1,826 0 0
H. L. Holloway	1,782 0 0
Thomas & Edge	1,746 18 6
J. & C. Bowyer, Ltd.	1,734 0 0
T. D. Leng, Evelyn-street, Deptford*	1,728 0 0

[The estimate of the architect (Education), comparable with the tenders, is £1,857.]

LONDON.—For staircases, Farrance-street, Limehouse, for the London County Council:—

Parrott & Isom	£3,177 0 0	A. J. Staines & Co.	£3,414 0
E. Jackson	3,047 2 0	J. & M. Patrick	2,339 0
W. M. Glendinning	2,745 18 1	Griggs & Son	2,310 0
J. Appleby & Sons	2,714 0 0	J. & C. Bowyer, Ltd.	2,291 0
G. E. Wallis & Sons, Ltd.	2,546 0 0	Holliday & Greenwood, Ltd.	2,222 0
C. R. Price	2,532 0 0	T. D. Leng, Evelyn-street, Deptford*	2,183 0

[The estimate of the Architect (Education), comparable with the Tenders, is £2,355.]

LONDON.—For new school, Manor-lane, Lewisham for the London County Council:—

G. Parker & Sons	£19,441 0 0
F. & H. F. Higgs	19,251 0 0
Perry & Co. (Bow), Ltd.	18,718 0 0
J. Maruland & Sons	18,160 0 0
J. Smith & Sons, Ltd.	18,007 0 0
H. L. Holloway	17,983 0 0
J. Appleby & Sons	17,926 0 0
J. Garrett & Son	17,884 0 0
J. Longley & Co.	17,860 0 0
Holliday & Greenwood, Ltd.	17,524 0 0
G. E. Wallis & Sons, Ltd.	17,443 0 0
Kirk & Randall	17,134 0 0
F. & T. Thorne	17,126 0 0
C. Wall, Ltd.	17,120 5 4
T. D. Leng	17,018 0 0
J. & C. Bowyer, Ltd.	16,985 0 0
Thomas & Edge	16,709 0 0
F. & E. Davey, Ltd., Elmer-avenue, Southend-on-Sea*	16,235 2 7

[The estimate of the Architect (Education), comparable with the tenders, is £17,600.]

LONDON.—For Bandstand-shelter Boundary-street-garden, for the London County Council:—

Wire-wove Roofing Co., and the Portable Buildings Co., of London	£325 0
Griggs & Son	291 0
F. & G. Foster	283 0
Vigor & Co.	259 0
Parrott & Isom	251 0
W. Gladding & Co.	245 0
A. G. Chamberlain	237 4
Newell & Lusty	230 0
H. Wood	217 0
B. E. Nightingale	215 0
E. Jackson	215 0
F. Pike, High-street, Ponder's-end, N.*	199 0

LONDON.—Renewal of wood paving for the Kensington Borough Council.

—	Colville-road and Colville-terrace.	Elgin-crescent.	Beauchamp-place.	Kensington-road.
	Per super yd. s. d.	Per super yd. s. d.	Per super yd. s. d.	Per super yd. s. d.
Complete Wood Flooring Co., Ltd.	8 6	8 6	9 2	9 2
Acme Flooring and Paving Co., Ltd.	7 8	7 8	8 4	8 4
J. Mowlem & Co., Ltd.	7 6	7 3	7 10	7 10
W. Griffiths & Co., Ltd.	7 8	7 3	7 10	7 10½
The Improved Wood Pavement Co., Ltd.*	6 10½	6 9	7 4	7 4
Borough Engineer's estimate	7 6	7 6	8 0	8 0

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3469. JULY 31, 1909.

Contents.

	PAGE
Two Exhibitions of Students' Work	117
The Valuation of Fireclays	119
Notes	119
The Royal Archæological Institute at Lincoln	121
The National Competition	122
The Architectural Association	123
The Royal Sanitary Institute at Leeds	124
The Whitgift Hospital, Croydon	126
Notes from France	127
The Royal Institute of British Architects	128
The Concrete Institute	129
The Architects' Technical Bureau	129
The Architectural Association Third Summer Visit	129
Society of Architects	129
London County Council Education Committee	129
Meetings	130
Illustrations:—	
Museum of Archæology and Ethnology, Cambridge	130
King's College Hospital, Denmark-hill	130
Higher Elementary School, Long Eaton	130
Upper Church of S. Francesco, Assisi	130
The River: A Symbolical Sketch	130
The London County Council	131
Applications under the London Building Acts, 1894 to 1908	132
Archæological Societies	133
Legal Column	134
Books Received	134
Trade Catalogues	134
Projected New Buildings in the Provinces	134
Correspondence:—	
"Mediæval Architecture"	135
Ferro-Concrete	135
The XIIIth Century Smithfield Gateway	135
London and District Borough Councils	135
Master Builders' Associations, etc.	136
Court of Common Council	136
Obituary	136
General Building News	137
Appointments	137
Sanitary and Engineering News	137
Miscellaneous	138
Law Reports:—	
Appeal by an Architect	138
Contractors' Claim against Architect	139
Builder's Claim against the Fulham Council	139
Patents	139
Some Recent Sales	139
List of Competitions, Contracts, etc., Open	140
Prices Current	142
Tenders	143

Illustrations.

Museum of Archæology and Ethnology, Cambridge. Mr. T. G. Jackson, R.A., Architect.

King's College Hospital: Central Portico of Administration Block. Mr. W. A. Pite, F.R.I.B.A., Architect.

Higher Elementary School, Long Eaton. Mr. G. H. Widdows, A.R.I.B.A., Architect.

Upper Chapel, S. Francesco, Assisi. Drawn by Mr. E. A. Martin.

The River: A Symbolical Sketch. By Mr. T. C. Derrick.

Illustrations in Text.

	PAGE
The Whitgift Hospital, Croydon	127
Long Eaton Schools: Plan of Site	130

Two Exhibitions of Students' Work.

IN the galleries and meeting room of the Architectural Association at 18, Tufton-street, Westminster, are exhibited the year's work of the students in its day and evening schools. At the Royal College of Art, South Kensington, may be seen, until August 14, the result of the labours, over a similar period, of students there. We do not propose to compare the two centres of activity too closely. Their aims are probably not identical, nor the purpose of their students the same. At the Architectural Association the idea is primarily to train the young architect, while at South Kensington we rather take it to be to make as much an architect as is possible—or as may be desirable—of the student who proposes to specialise in one or more of the allied arts or crafts. There probably may be at South Kensington whole-hearted architectural students; at any rate, there is some whole-hearted architectural work. Nevertheless, taken generally, there is rather a leaning to colour and colour schemes as such than to architecture. At Tufton-street, however, though an individual student may break out with a scheme of colour, it is the exception, and generally a rather unfortunate one. At the Architectural Association we primarily look for evidence of serious study and training in architecture and building construction of such a nature as may fit the students to be of some use first as assistants in the offices of practising architects, and, later, to conduct their own practices in a capable manner. On a modest computation there must be some three hundred odd superficial yards of drawings on the Tufton-street walls, about two-thirds of it going to the day school, the rest to the evening school and design classes. And the Association students are evidently not encouraged to waste paper. In fact, some of the sheets present, at first sight, an appearance of nothing so much as nursery "transfer" or puzzle sheets. For even in their first year students might well learn the difference between a full and a crowded sheet, and have a care for the feelings (and thoughts) of the bricklayer, joiner, or plumber who may have to interpret them. Otherwise it might perhaps be harmless enough at the early stage of drawing out tools and so on. But when it is aggravated, as with several of the third and fourth year students, with a back or ground wash of almost any tint, we shed a silent tear for the misguided enthusiasm, and we are almost constrained to suggest that tinted papers, Chinese white, back washes, and ornamental borders should be rigorously barred the Association schools for a few years; a leaven of sober, thorough, working drawings and details, sensibly though not necessarily inartistically coloured, with dimensions and setting out which a foreman may read and follow, might well take their place.

This being said, there is yet a quantity of thoroughly good work, more particularly, it seemed to us, in that of the first and second year students. Nothing could be better of its kind than their analysing and drawing to eighth scale, half-inch, and full size, of a village club and a farmhouse. These are apparently modern buildings, erected from the designs of well-known architects, and we gather that the students must not only have surveyed the buildings in question, but also have had access to the architects' drawings. Than the exercises here evidenced we can think of nothing more useful to the students; and they, and those guiding them, are to be cordially congratulated on this section of their work. Here—for "first year" work—R. Stevenson wins the first prize, and A. E. Maxwell a well-earned special second prize; but there is much good work in the other sets also. As a first-year test subject a large outline figured perspective sketch of the Ashmolean Museum doorway was supplied, from which a half-inch detail drawing was to be set up. Although the students seem to have come out of the ordeal rather creditably, it struck us as an exercise more difficult than useful. For the second-year test subject in design, with a time limit of five days, the entrance lodges to a village cemetery was given. H. B. Chisholm is placed first with a quiet design in brick—a lodge on either side of the gateway. His gables, ramped in East Anglian manner, are particularly happy, and he properly utilises the roof space for his bedrooms. His drawings are suitably tinted, without tricks or affectation. The second place goes to a rather ambitious "Norman" Gothic design, while others have found a difficulty in getting away from an almshouse treatment. Some designs, showing at least clean pencil draughtsmanship, were, we thought, needlessly skied, for these early essays in design are exceedingly interesting though not sensational. Then there is a series of designs for a country house in wood and plaster, of which we doubt the utility in these days of model by-laws and modern methods of construction. A group of market halls comes next, several of which might build not amiss in an English county town, though none seemed to us to call for special comment, and all would do with more thorough working out. There are one or two really artistic village church designs, notably one by A. S. G. Butler, who is also to be commended for his half-inch scale detail. Further

Digitized by Google

along again this student has a charming study for a domed church treated rather after Italian than Byzantine models, exceedingly simple in its parts, in its skyline, and in its high unbroken plinth of stone on the broken ground. The draughtsmanship and tinting give the necessary expression of form and material, yet they are artistic, sincere, and free from tricks.

From a series of drawings under the heading, "Notes of Visits," we gather that the students are encouraged to prepare these sheets as the result of visiting works in progress. Such a course must prove invaluable, and the work shown in this class indicates that the students are alive to its advantages, for several sheets are shown setting forth interesting constructional details and methods of procedure in actual work, ranging from foundations to general steelwork, ferro-concrete, masonry, joinery, plumbing, and so on. We also noticed quite astonishing examples of the use of isometric projection for illustrating building construction.

Architectural students are probably often enough being told that unless they are prepared to work in their holidays they had better give up architecture at once. Judging from the Association's "vacation work," there are a good many young men there who still intend to become architects. There are several good sheets of measured work and sketches; particularly worthy of praise is a survey—we only remember noticing the plan—of a farmhouse at Willersey, a most irregular building, laid down on a very complete system of centre and diagonal dimension lines. Here again the clean pencil drawing may be commended.

The drawings representing the work of the evening school occupy the central gallery of the Tufton-street premises, the range of subjects covering designs for a country house, an Agora in Greek Doric, a Roman museum hall, a country church, a music-room, a river warehouse, a school memorial hall, a galleried town church, etc. The best work is undoubtedly shown in the designs for the river warehouse; the essentially practical nature of the subject having had, we imagine, a restraining influence upon the "artistic" impulses of those who have essayed the problem.

Moreover, being a subject rather out of the ordinary run, inspiration probably had to be sought on the river itself instead of in the text-books or from the works of the better-known practising architects. We regret that these warehouse designs were not accorded screens to themselves instead of being alternated as they were with music-rooms, churches, etc. There is thoroughly sound architecture in most of these warehouse fronts, good proportion, and a rational use of materials accounting for most of it. Above the quay level a ground story of blue bricks with central archway down to water level for the entry of barges is the rule, then two or three floors divided into vertical bays by piers of similar blue bricks or red; yellow stock brick walls between the piers; windows grouped vertically from story to story with perhaps an attic or frieze of windows horizontally treated under the eaves, the centre bay being emphasised by a gable above the balconies and doors on each floor below. The provision for cranes might, however, have been dealt with more candidly in some of the designs. The crane is a feature of the river, and even becomes a thing of beauty by reason of its utility, whereof architects need not be ashamed. A warehouseman would probably also demand more protection to jambs and sills of landing doors, and it also struck us that there was a general timidity in the size of windows for adequate lighting. The design by F. A. Swindells is one of the best, and his drawing is straightforward and expressive; that by B. F. Matthews is also good, though his pencil is not so clean and his colour heavy; nevertheless his water-colour prospective gives the thing an air of the river.

The practical working out of ferro-concrete piling, foundations, retaining walls, and steel framing is also very thorough in this design and in that of G. Flint Clarkson, whose work in this connexion is entirely praiseworthy. R. M. Pigott has a good study in brickwork, the crane and balconies being better met than in others. C. A. Farey raises his barge-way arch up through the first floor, thereby destroying the scale and homogeneity of his front. Otherwise he has a good architectural treatment and a sound half-inch detail drawing. In most of the designs the long flank or party walls would require stiffening by piers or otherwise, more especially on the top floors. We should like to see almost any one of these warehouses flanking the Thames.

For the music-room in a large house C. A. Farey produces a dignified interior with its series of long windows from floor to cornice. There is a raised dais or stage at one end not very thoroughly developed, attention in the way of detail being devoted to the doorway opposite. The setting-out is well figured, but the detail drawing does not indicate materials, and we rather suspect the author had scarcely decided how or in what to build up his doorway. A design by R. W. Cable is unmistakably for wood. It is well drawn, though not entirely free from neo-archaic affectations. Provision is made for an organ, and at the opposite end there is a gallery which might have conveniently had a fireplace. By G. D. Hake and Mr. Cable are admirable free-hand drawings of carved door-hood brackets.

For the music-room and other subjects some simply outrageous colouring—most charitably attributable, perhaps, to vaunting ambition—is in evidence, and we sincerely hope the junior students may not seek to emulate their seniors in this particular. One wonders what, if any, guiding or restraining influence can have been exercised. Still there is some good work at intervals and a suitably tinted set of eighth-inch scale drawings is that for a school memorial hall by E. Bullock, who, adopting a Georgian style, raises the hall on a colonnade with broadside to the school quadrangle, the line of colonnade being continued on either side as a cloister. Both proportion and the use of the materials—brick and stone—have been carefully studied in the preparation of this design. The half-inch detail is less successful than the eighth scale drawings. A town church by E. J. Tanner is better at first sight than after closer inspection. The outline of the dome is good in elevation, but its relation to the plan of the church is not satisfactory. The dome requires raising on a drum to be set off to proper advantage as seen from the pavement level. The drum is an unequal octagon on plan, the splayed sides being as 1 to 2 of the cardinal sides. A pilaster spacing equal to the shorter sides is employed, thus giving a pilaster in the centre over ridges of nave and transepts a somewhat unfortunate arrangement. The dome itself has sixteen equally spaced ribs, regardless of the unequal octagon immediately beneath. Internally the effect would be enhanced if the galleries in the shallow transepts could be recessed to enable the full height, as in the nave and choir, to be found here again. From the exceedingly confused pen-and-ink perspective of the exterior we imagine Mr. Tanner had already discovered some of the defects we have noted, but it is a design which he ought to develop further.

For the very ambitious scheme of still further improving the Marble Arch and its surroundings seven suggestions—which we do not propose to note in detail—are offered. But, waiving all practical considerations, the architectural if not monumental quality of the design by L. H. Glencross may be commended. The arch itself is moved back southwards to about the line of the present entrance gates to the Park; it is then flanked on either side east and west with a double colonnaded Ionic order terminated at either extreme by square pavilions which would probably detail well as regards their skyline. In the centre of each colonnade is an archway for general traffic into the Park. The space thus left to the north is laid out in grass squares with fountains set therein. The bird's-eye view in pencil, though slight, shows all that is necessary.

As a result of the session's work in the School of Design, which is a somewhat high sounding title given to yet another subdivision of the Architectural Association classes, there is an interesting private electric-light station by W. Cathcart; a town house resourcefully planned to a narrow frontage by A. L. Snow; some good model cowhouses by G. G. Wornum and H. A. Ross; while amongst the designs for a town church Mr. Wornum has produced an admirable study for a brick church, on the strength of which alone we imagine he must have won the Travelling Studentship which has been awarded him. We like the restraint of the design and the unaffected way in which it is presented.

The Saxon Snell Scholarship of the value of 50*l.* has not been awarded; a special prize of 10*l.*, however, going to R. Cromie. The subject was a Convalescent Home for Children, and we should have thought it would have appealed to more members, though their desire to specialise in hospitals might not be very pronounced. There is perhaps no branch of work offering a wider field for skill in planning nor

Digitized by Google

one in which better architecture is more needed. A student carrying off this scholarship would have an invaluable start in his generation.

Passing on to the exhibition at the Royal College of Art, South Kensington, there are seventeen designs for a town mansion on a detached site occupying one side of a square. The site is of considerable depth, making it possible not only to set the house well back from the frontage line, but to lay out gardens on some scale behind. Probably one of the best is that of T. H. Hughes, who gives a dignified four-square classic house set back in a forecourt behind handsome entrance gates and piers, and flanked on either side by crescent colonnades connecting up to the frontage line of site. Behind the colonnades are screened, one story in height, on the left the stabling, on the right the kitchens. Internally the staircase and first floor landing have received the most attention, and are made the occasion for elaborate colour decoration on walls and ceilings. Indeed, though several of the plans are worked out in some detail, this applies to the designs in almost every instance, a half-inch scale drawing of the staircase showing colour decoration being evidently one of the conditions. No perspective views are shown, and only an occasional half-inch scale external detail. The work represents the second term's work, Second Division, Upper School.

A Travelling Studentship is awarded C. P. Walgate for a collection of drawings and sketches, some in colour, for his preliminary studies and design for a college chapel. Two other sets of drawings are of nearly equal merit. The stalls of the college chapel are in each case drawn out a quarter full size and full size. Then there are other sheets of details which might go straight to the joiner's shop or mason's yard without a blush. Amongst other work there is a charming design for a neo-Greek doorway and portico, with full sizes again very thorough. This exhibition—unlike that at Tufton-street, which we believe is now closing—remains open until August 14.

THE VALUATION OF FIRECLAYS.

EARLY in the present year a Joint Committee of representatives of a number of societies interested in the uses of refractory materials was formed, with the object of grading and standardising the various refractory materials used for industrial purposes. The English Ceramic Society, the Society of Chemical Industry, and the Institution of Gas Engineers each have representatives on this Joint Committee, and we hope that the investigations of the Committee will result in the discovery of methods by which the refractory character of fireclay goods may be improved by more scientific artificial treatment, and of methods by which the comparative values of fireclays may readily be determined.

In an excellent paper communicated last year to the Institution of Gas Engineers it was alleged by Mr. Bywater, one of the Engineers to the Birmingham Gas Committee, that certain German fireclay goods will withstand a higher temperature than similar goods of British manufacture, and that the highly refractory character of the German goods is "no doubt due to the scientific investigation the German manufacturers have brought to bear on the raw material at their disposal." Mr. Bywater further stated that "only thorough and scientific investigation and treatment are required to restore British fireclays to their former pre-eminence."

It is quite true that during the last seventy years Continental chemists have carried out many laborious investigations with the object of discovering a method by which the degree of refractoriness of a fireclay may be revealed by chemical analysis, and some have endeavoured to construct a formula by which the value of a fireclay may be calculated from its chemical composition, but the results of these efforts have not been of much practical value It has long been known that certain substances, such as soda, potash, and lime, lower the fusing point of clay, and that, therefore, none of these should be present in considerable proportion. Iron oxide is also known to reduce the fusing point, owing to the fact that it reacts with the silica in the clay to form a fusible iron silicate. It is sometimes stated in text-books that the more alumina present in the clay the more refractory is the clay, but this rule is not always found to be correct in practice. Many siliceous clays containing less than 10 per cent. of alumina will withstand as high a temperature as a clay containing 20 per cent. of alumina.

Scientific workers have warned manufacturers concerning the injurious effect of titanium dioxide in brick-clays, but few fireclays contain more than 2 per cent. of this substance, and there is little evidence to support the suggestion that this proportion of titanium dioxide is very prejudicial. Many chemists have endeavoured to discover the proportions of felspar, quartz, and "clay substance" in fireclays by using special methods of analysis, and have emphasised the importance of these so-called "rational" analyses as compared with ultimate analyses in revealing the character of clays. But these mineralogical analyses are of no more value than ultimate analyses, and their inaccuracy and futility has been clearly demonstrated by Dr. J. W. Mellor and others. The fact is that chemical analyses are useful in detecting the presence of an excessive proportion of any readily fusible compound, or any substance that will act as a flux; but they cannot show the comparative values of clays having different proportions of silica and alumina and normal proportions of the usual impurities. Clays of similar chemical composition may have widely different fusing points. The physical condition of the constituents affects the fusing point of a clay, and it is often found that a coarse-grained brick will fuse less readily than a fine-grained brick, although the two bricks have the same chemical composition.

The melting point of a mixture of two constituents of a clay may be lower than the melting point of either constituent alone, and since many clays contain nine or ten elements, each possessing a different degree of influence upon its neighbours when subjected to high temperature, it appears improbable that it will ever be possible to determine the fire-resisting power of a clay solely by chemical analysis.

Subjection of a sample of the clay to high temperature in a furnace is quite as useful a test as chemical analysis, but this test should be complementary to the other, and the results of these and certain other tests must all be considered together. Several simple methods of determining the temperature of a furnace have been devised in recent years, and small furnaces suitable for ascertaining the behaviour of samples of clay when subjected to high temperatures are available for the use of the maker of fireclay goods.

Although refractoriness is the factor of primary importance in fireclay, there are other qualities which must be taken into consideration. The degree of shrinkage which the clay undergoes when fired, the plasticity of the clay and the degree of cohesion which the clay possesses after it has been fired, are matters to which attention must be given. A fire-brick which contains little alumina and a very large proportion of silica may be very refractory, but will probably not possess great strength, and will, therefore, be useful only for certain descriptions of work or for admixture with clay of a different character.

The Joint Committee has to contend with some very difficult problems, and the results of its labours will be awaited with interest. The manufacture of fireclay goods is an important British industry which German competition should not be able to destroy. If German raw materials are no better than British fireclays, and the goods of German manufacturers are superior merely because the raw materials are more scientifically handled, by all means let us imitate our competitors. But the evidence which has been advanced to prove that British manufacturers are being beaten merely owing to their failure to treat the available raw materials in a scientific manner is very scanty, and we cannot accept the statement as correct until we have further proof of its accuracy. We believe that, generally speaking, British manufacturers are well acquainted with all the scientific work which has been done on the Continent in connexion with refractory goods, and are quite ready to adopt Continental methods as soon as they are satisfied that these are superior to their own.

NOTES.

The Tax on Reversions.

THE tax on reversions is one of great importance to the building trade. It has already more than once been pointed out by the Council of the Surveyors' Institution that the long-leasehold system worked fairly and assisted building development and the cheap housing of the people. It was further demonstrated that the "windfall" element was entirely absent from most transactions in ground rents, and that the

Digitized by Google

imposition of this tax would depreciate a form of investment much favoured by persons of small means. Mr. Haldane, pressed in the House for reasons why leases of more than twenty-one years' duration should be penalised, at first stated that the only reason for the tax was that it was necessary to raise money, but he subsequently qualified this statement by saying that owners of land made long leases because they refused to part with their freeholds. Neither reason appears at all adequate in face of the arguments that have been waged against taxation in this form. The money to be derived from the tax is at any rate at first inconsiderable, and could easily either be dispensed with or raised from other sources. If the leasehold system, which is very old-established, works well and fosters land development, what object is attained by forcing owners to sell land which builders have not the capital to buy or both to buy and develop? Some argument at least should be put forward in favour of this new form of tax to meet the very strong case that has been made against it.

Preference to Local Labour.

THE debates in two successive weeks in the London County Council on the giving of preference to London labour by contractors for County Council work have not been sufficiently noticed by the public. The subject is one which would bear considerable discussion. The doctrine of local preference is one of superficial attraction, but it is by no means sound. It would in the first place be difficult to give a satisfactory definition of "men *bonâ-fide* resident in the county of London." A man from Birmingham who has lived for a week in London is *bonâ-fide* resident for the time being, at any rate. One of the aims of the Labour Exchanges Bill, again, is to make it easy for labour to proceed from a place where employment is slack to a place where it is brisk. But if each city or locality is to give preference to persons "resident" in the town or locality, it follows that the apparent advantage may become no advantage at all, for if town A keeps the work to itself, those who work there and find employment slack will be debarred from going to town B, where employment is good. Any such preference must also result in all sorts of pretence and dissimulation, and can have no real effect in keeping workmen from coming to the Metropolis from outlying districts. It may also be pointed out that London is so vast that if the principle were sound Kensington men, for example, should only be employed in Kensington and Lambeth men in Lambeth.

Legal Regulation of Advertisements.

THE latest issue of "A Beautiful World," which is the occasional organ of the Society for Checking the Abuse of Public Advertising ("Scapa"), draws attention, under date July 19, to what has been done in regard to the framing of by-laws, under the "Advertisement Regulation Act" (1907), for checking disfigurement by advertisements. Four local authorities have succeeded in framing by-laws, of which those submitted by the County Councils of Westmorland and Somerset and the Corporation of Exeter have been approved by the Secretary of State, subject to statutory obligation to consider objections. The draft by-laws of the District Council of Barnes have only recently been sent in. In all four the method adopted is to specify areas within which or with respect to which advertisements must conform to prescribed conditions. These vary in stringency—the criterion applied being the size of the sign or the size of the letters comprising it, the height above the ground and the character of the display. As a rule business notices on business premises are exempt. The Act itself allows five years' grace to all existing advertisements. It may be mentioned, in connexion with the subject, that in France an important Act has recently been passed by which objects and areas of exceptional beauty and interest can be placed under the protection of a Commission; and in some of the American States laws somewhat on the lines of our own Act of 1907 have been passed. We fear it will be a long time before legislative interference will put an end to one of the worst advertising nuisances, the planting of the fields all along our railway lines with huge advertisements of quack medicines—an outrage which destroys half the pleasure of travelling through open country.

Reinforced Concrete Columns.

INTERESTING as the results obtained by Considère with spirally reinforced columns undoubtedly are, it cannot be too widely known that spiral reinforcement alone, or spiral reinforcement with thin longitudinal rods, is not a particularly desirable form of design. While a spiral winding of steel coils imparts greatly increased toughness and ultimate strength to concrete columns, the fact, as ascertained by practical experience and the experiments of Professor Talbot among other investigators, is that spirally reinforced columns are characterised by excessive lateral deformation when under load, unless ample longitudinal reinforcement is also provided, the latter being specially important in cases where eccentric loading occurs, whether intentionally or otherwise. Another point which should be borne in mind is that the free use of cement is generally economical in reinforced concrete columns. In some recent tests it was found that by doubling the proportion of cement in the concrete the yield point and ultimate strength of columns without vertical steel bars was increased 100 per cent., while the additional resistance of 50 per cent. was imparted in the same way to spirally reinforced columns containing 6 per cent. of steel in the form of longitudinal bars.

New Engineering Buildings, Manchester University.

IN March, 1851, the house in Quay-street, Manchester, formerly occupied by Cobden, was dedicated to the purposes of Owens College, which, in 1880, became the first college of the Victoria University, now the University of Manchester. The professorship of civil and mechanical engineering established in 1866 was followed by the foundation of thirty scholarships of the annual value of 100*l*. each by Sir Joseph Whitworth, and the practical value of the new school of engineering received early recognition by the Government. Until 1873 the accommodation provided for the engineering department comprised only three rooms, but on the transfer of the College to the present buildings in Oxford-street more ample space became available, and by the liberality of Sir Joseph Whitworth, Messrs. Mather & Platt, and others, the Whitworth Engineering Laboratory was added in 1887, this being one of the first institutions of its kind in which systematic courses of instruction were given in conjunction with a three years' course of lectures in engineering. The next development was the extension of equipment and accommodation made in 1896, and this was followed in 1907 by the preparation of plans for the engineering buildings which were opened this month by Sir Alexander Kennedy. The new buildings comprise four adjacent blocks, one of three stories including lecture-rooms, drawing offices, research-room, tutorial-rooms, and private rooms, at the back being the hydraulic and testing laboratory, and connected to it by a covered way the thermodynamic laboratories and the workshop. The equipment throughout is of the latest type, and the University now possesses every facility for conducting its valuable work in the education of engineers with far greater comfort than has been possible during recent years.

Cement: White and Coloured.

ONE of the most effective methods for the surface treatment of concrete in architecture is certainly that which involves removal of the mortar by acid or wire brushes so as to leave the aggregate bare. This procedure, however, is not always suitable, and in consequence pigments are sometimes added to the rendering coat applied to the surface. As mortar or cement so employed is very liable to fall off in places after a time, various attempts have been made to produce white and coloured varieties of cement. Ordinary Portland cement owes its colour chiefly to the combination of iron and manganese in the constituent materials, and it has been proposed to obtain more agreeable tints by the addition of suitable metallic oxides before the slurry is passed into the kiln. Unfortunately, most of the highly-coloured clays and those free from colour are too costly for cement making, and, moreover, their employment would necessitate higher temperatures than those customary. A process recently devised on the Continent for the production of white Portland cement made with ordinary or ferruginous clay is to introduce from 2 to 5 per cent. of sal-ammoniac into the slurry, the effect being to convert the iron into ferric chloride, a volatile salt which escapes in the fumes, and is afterwards recovered together with the ammonia gas given off by the sal-ammoniac. Cement so produced is costly, because clinkering must be performed in small vertical kilns. An alternative is to employ chloride of zinc in place of sal-ammoniac, the result being a whitish cement slightly tinted with green. Either of these products could be employed advantageously in decorative details if procurable at reasonably moderate price.

Digitized by Google

Cheddar Cliffs.

AS HAPPENED a year or two ago at Clifton, the celebrated cliffs at Cheddar are being quite needlessly disfigured by quarrying operations. Mr. Nigel Bond points out that there is no absolute necessity for quarrying in the gorge since the Mendip Hills furnish stone of the same character in abundant quantities. In 1902 blasting on an extensive scale was commenced, the disfigurement so caused being increased by the installation of steam crushing machinery, galvanised iron sheds, tramway lines, and other auxiliaries. Despite the protests of the County Council and various local bodies, the work of destruction proceeded apace, and some three years ago an extensive fall of rock occurred, bringing down about 50,000 tons of stone. To-day there seems to be a reasonable prospect of checking further depredations, for the National Trust for Places of Historic Interest or Natural Beauty hope to purchase the land on which the quarries are situated. To enable them to carry out this programme the sum of rather more than 1,000*l.* is required—a very modest amount which ought to be readily contributed by lovers of the picturesque. It is true that other lands along the gorge will still remain in the possession of owners who may permit quarrying at some future time, but we understand that they have no intention at present of allowing anything of the kind, and it is to be hoped that they will never be induced to adopt a different attitude.

Excavations in Genoa.

EXCAVATIONS undertaken for the construction of the Via Venti Settembre, between the Piazza Deferrari and the lofty bridge known as the Ponte Monumentale, led to the interesting discovery of a cemetery of the Vth and IVth centuries B.C., described by Dr. Paribeni at a recent meeting of the German Archæological Institute in Rome. The bodies had in all cases been cremated, whereas inhumation was the habitual practice of the Ligurians, and were buried in small shaft graves, covered with a slab of limestone. Eighty-five tombs in all were found, many of which had painted vases of the last red figure style; most of them were imported from Greece or Magna Græcia, while the bronzes came from Etruria, and the fibulæ from Gaul. These facts illustrate the early importance of Genoa as a trading station.

Architectural and Topographical Society.

THE Architectural and Topographical Society appeal for help from the public to carry on excellent work, in which they have already accomplished much. Its object is to make complete Historical records of the Ancient Buildings in these islands; of their condition at the time of the record, and of as much of their previous history as can be collected from local and other sources. Since the formation of the Society, rather more than twelve months ago, complete accounts of the buildings in seventeen parishes have been published, and those of some twenty more parishes are now partly completed. The work done for the Society is purely honorary; its funds are therefore entirely expended on the work, not on the workers. The Society's circular states:—

"The minimum sum of 500*l.* is required to ensure the effective continuation of the work of the Society until such time as the annual subscription list shall be equal to the necessary disbursements; a further contribution would enable the rate of progress to be made more consonant with the amount of the work to be done. Communications should be addressed to the offices of the Society at 33, Old Queen-street, Westminster, S.W."

It is to be hoped that a work of such value in connexion with our national history will not be allowed to fail for want of funds to carry it on.

The Whitgift Hospital.

WE publish on another page of this issue a drawing by Mr. Sidney Heath of the central portion of the front of the Whitgift Hospital at Croydon, which the Corporation authorities have expressed their determination to pull down, in order to widen the road at that point. As there are often two sides to such questions, we paid a visit to Croydon to inspect the conditions. The flank of the old building projects a few feet on the line of street—or rather, the modern line of street has been set back behind it; but the inconvenience supposed to arise from this has been greatly exaggerated. Were it only a question of the outside architecture of the Hospital, the case would not be of so much importance, the centre portion shown in Mr. Heath's drawing being the only interesting exterior detail; but on entering the gateway we find a beautiful little grassed court surrounded by the old buildings, which is of the greatest interest as a kind of architectural sanctuary in the midst of the commonplace modern town. To destroy such a monument as this, merely because a short length of a street is made a little narrower by it, would be an act perfectly disgraceful to the town authorities, and they ought to be ashamed of even proposing it. It is about the one thing of real interest in Croydon.

THE ROYAL ARCHÆOLOGICAL INSTITUTE AT LINCOLN.

AFTER an interval of twenty years the Royal Archæological Institute, for the third time during its existence, is again holding its annual meeting at Lincoln, under the presidency of the venerable Bishop of the diocese.

Owing to the overlapping of the Wesleyan Methodist Conference at Lincoln, the meeting could not be begun on the usual Tuesday, but on Friday, July 23. The proceedings of the opening day were characterised by a further departure from precedent, and consisted of an excursion into the country, instead of the customary reception by the civic authorities, owing to Friday being market day in Lincoln.

Leaving the city at 10.45 the party, in number about one hundred, went by rail to Boston, and proceeded direct to the well-known church of St. Botolph. This was described by Mr. G. S. W. Jebb as being one of the three largest parish churches in the kingdom, and (with the exception of the later tower and an eastward extension of the chancel) built throughout in one style. The present church was begun in 1309, and is, therefore, a beautiful and characteristic example of the architecture of the first half of the XIVth century. The chancel was lengthened (or rebuilt) early in the XVth century, when large windows were likewise inserted in the ends of the aisles. About the same time the grand western tower was begun outside the west end of this nave, but its upper parts proceeded so slowly that the lofty belfry stage and the octagonal lantern which surmounts it were not finished until the beginning of the XVIth century. The main roofs were underdrawn with ugly wooden ceilings in imitation of vaulting in the XVIIIth century. Most of the old furniture has disappeared, but the chancel still retains its fine sets of stalls with carved misericords, and in the nave is a good late XVIIth century pulpit with sound-board. The stall canopies and reredos, as well as the font, are modern. After luncheon Mr. Jebb conducted the party to view some of the other old buildings in the town, including Shodfriars Hall, late mediæval, but a much "restored" merchant's house, of elaborate timber construction; an interesting range of late XIIth or early XIIIth century buildings, with coupled lancet windows, in Spain-lane, supposed to be part of the Dominican friary; and the hall of St. Mary's Guild, a fine brick structure, of early XVth century work, with its gable end to the street, and a good traceried window containing much of its original glazing, with figures of the Apostles, etc.

At 2.30 p.m. a special train conveyed the party to Tattershall, when the church and castle were inspected under the guidance of Dr. Mansel Sympson. The church, which is cruciform, with aisles to the nave and a western tower, was begun in 1438 by Ralph, Lord Cromwell, for a college of secular priests, but seems to have been carried up very slowly, and the large uncusped windows and other details, especially of the nave and transepts, are more characteristic of the XVIth than the XVth century. The rich painted windows of the choir were taken out in 1754 by the then Earl of Exeter, and sent to Stamford, where portions exist in St. Martin's church. The stalls being thus exposed to the weather became decayed, and have since been destroyed, together with other old fittings. An interesting XVIth century pulpit remains in the body of the church, and the division between choir and nave consists of a beautiful stone *pulpitum*, with recesses for side altars in front, and the stone desks above, whence the Epistle and Gospel were sung on Sundays and feast days. The famous series of brasses have lately been properly relaid and secured, chiefly through the kind help of Mr. J. Challenor Smith and other friends.

Of the castle of Tattershall little remains save its moated enclosure and the magnificent keep or great tower. This latter was built by Ralph, Lord Cromwell, while Lord Treasurer of England, between 1433 and 1443, and may fairly be considered the finest brick tower in this country. It is four stories high, with a vaulted cellar-basement, and oblong in plan, with octagonal turrets at the four corners, rising high above the lofty crenellated and machicolated parapet. The floors, roofs, and glazing have all perished, but the richly-carved fireplaces remain uninjured, and, except for a somewhat serious damage by lightning some five years ago, the whole of this stately structure is still in good preservation.

At the evening meeting Professor Haverfield gave a lecture on Roman Lincoln, in which, after describing what is known of the defences and buildings of the upper or Roman town proper, he emphasised the comparative absence of remains of buildings in the lower part of the city, and submitted that possibly it was not enclosed until post-Roman times. Dr. Sympson and Mr. W. H. St. John Hope were inclined to agree with Professor Haverfield, and Mr. Hope thought that the enclosing by a wall of what had hitherto been an open Roman area was due to a desire to continue the fortifications of the city down to the Witham, to control the waterway against piratical invaders in late Saxon times.

Saturday, the 24th, was devoted to an inspection of buildings of interest in the lower parts of the city of Lincoln, under the guidance of Mr. W. Watkins. The first building visited was the church of St. Peter

Digitized by Google

at Gowts. This retains the western gable of a nave of Saxon date with pronounced long and short work, in front of which has been built an unbuttressed tower with mid-wall shafts to the belfry windows of a type that is also commonly described as Saxon. The body of the church has a south arcade of rich transitional work and the remains of a Norman chancel, to which has been added a south chapel. The north aisle is modern. The so-called hall of St. Mary's Guild was next inspected. It retains what is apparently a small, two-storied house of late XIIth century work, which stands in a courtyard entered from the street by an early gateway. The party next proceeded to the church of St. Mary-le-Wigford, pausing on the way to inspect a fine timber house up an alley near the Great Northern railway station. St. Mary's Church has a tower similar to that of St. Peter at Gowts, but the remains of the early nave are contemporary with it. The chancel, with its north chapel, and the north aisle are of refined early XIIIth century work. After inspecting the mediæval High Bridge and the picturesque wooden houses that still stand upon it, the party arrived at the Stone Bow, the picturesque XVth century southern gatehouse of the city. The upper floor serves as the Guildhall, and here the Institute was formally received by the Mayor of Lincoln (Councillor W. S. White) and the Sheriff of the city (Captain H. E. Newsum), both of whom, in welcoming the members to Lincoln, spoke of the increasing interest which was being taken in the archæological features of the place by the Corporation. Sir Henry Howorth, as President of the Institute, suitably acknowledged the kind remarks of the Mayor and Sheriff, and referred to the work of the recently-appointed Royal Commission on Historical Monuments. After luncheon a visit was paid to the Greyfriars, where an admirable nucleus of a local museum has been formed in the vaulted undercroft and upper floor of a long, two-storied building of the XIIIth century. This may have been at first the church, but in later days became, apparently, the frater of the friars.

The remainder of the perambulation was under the guidance of Dr. Mansel Sympson, in the upper part of the city, and included visits to the famous Newport Arch, part of the Roman north gate, to the remaining fragments of the Roman wall, and to the interesting XIVth century house to the east of the Minster, formerly the Chancellor's, but at present the Sub-dean's. The Castle was next inspected, after Mr. William Scorer had described its more noteworthy features by the aid of a series of plans. Not a few ascended to the top of the so-called Observatory Tower, for the sake of the fine view of the west front of the Minster, and of the city and country round. Retracing their steps, and passing the XIVth century chantry house, the party visited the Vicar's Court. This was described by Mr. W. H. St. John Hope as a series of houses or sets of chambers, with a hall, etc., built round a court, and forming the residence of the college of vicars attached to the Minster. It was begun early in the XIVth century (to which date the south side belongs), but not completed, *temp.* Bishop Buckingham, before 1377. The adjoining granary and brewhouse, now stabling, was the work of Canon John Breton (whose rebus it bears), *temp.* Bishop Alnwick (1456-50).

The last place visited was the Bishop's Palace, where the Bishop of Lincoln (Dr. King), President of the meeting, received the members of the Institute, and hospitably entertained them to tea. The inspection of the Palace was begun under the guidance of the Bishop himself, who conducted the party to the doorway, now blocked, in the Roman wall between the garden and the Minster, and showed, by the reading of the charter, that this was the entrance through the wall which Bishop Robert Bloet was allowed to make by leave of King Henry I. The later history of the Palace was described by Mr. Hope. They include the remains of the great hall of Bishop Hugh of Wells (1209-35), with the butteries and solar over (now the bishop's chapel, as arranged by the late Mr. G. F. Bodley), and the kitchen beyond; all, with the exception of the hall, built upon a series of sub-vaults, owing to the fall of the ground. To the east of, and roughly parallel with, the great hall, is the sub-vault and part of the north end of a smaller hall of earlier date, which Mr. Hope thought were remains of the palace recorded to have been built by St. Hugh. These remains are connected with the great hall by the tower-porch, built by Bishop Alnwick (1436-49), and a range of chambers terminating eastwards in a large chapel built over another hall or parlour. All these remains, except the tower, are in a sad state of decay and much overgrown with ivy and other destructive vegetation. The present residence of the Bishop is mostly the work of the late Mr. Ewan Christian, in 1886.

At the evening meeting, Dr. Mansel Sympson gave a lecture, illustrated by lantern slides, on the Church plate of the diocese of Lincoln.

Monday, the 26th, was devoted to an expedition to Barton-on-Humber and Thornton Abbey. The special train started punctually at 9.50 a.m., but, through mismanagement of the railway people at New Holland, reached Barton half an hour late. The party went first to St. Peter's Church, when Mr. Robert Brown described the building, which is chiefly remarkable for its fine Saxon western tower, with strip work, and its contemporary western annexe. Traces of the apse that projected eastwards from the tower were found at a recent restoration. The present body of the church is mostly XIIIth century, and retains the greater part of a fine roodscreen. A XIVth century window in the north aisle has figures of the Rood, St. Mary, and St. John, carved on the mullions. St. Mary's Church was next visited. It has a good late Norman north arcade, but the chancel, the south aisle, and the western tower, together with the south porch, are XIIIth century. A south aisle or chapel was added in the XIVth century. Mr. Brown again acted as guide.

After luncheon the journey was continued by motor-cars and other conveyances to Thornton Abbey, pausing on the way to view Goxhill "Priory," a fine but much injured example of a domestic hall of the XVth century, carried upon a vaulted undercroft. The remains of Thornton Abbey, a foundation of Black Canons, established here from Kirkham in 1139, were described by Mr. W. H. St. John Hope, who pointed out the limits of the original XIIth century, as disclosed by recent excavations made by him through the kindness of the Earl of Yarborough. The presbytery was square ended, and the nave aisleless. With the assistance of a record of the progress of the building, compiled from the account rolls by one of the canons early in the XVIth century, Mr. Hope was able to indicate the dates of the successive enlargements of the church, and of the remains of the transept and the beautiful octagonal chapter-house, which were built during the closing years of the XIIIth century. A good deal of useful clearing, removal of trees, etc., has lately been carried out by the noble owner. After inspecting the magnificent gate-house, built in accordance with a licence to crenellate of 1382, the party returned by train to Lincoln.

At the evening meeting Mr. John Bilson read a paper on the "Architectural History of Lincoln Minster," with special reference to the XIth century church of Bishop Remi, and the XIIth century completion of the west front. From analogy with other contemporary plans in Normandy, Mr. Bilson urged that Remi's apsidal presbytery, the foundations of which may be seen beneath the choir stalls, was flanked by aisles with square ends but continuing apses. The probable existence of these had not been considered by previous investigators, but the probability has now been turned into fact, by the discovery, during the last few days, of the actual foundations of the north aisle, through excavations carried out under Mr. Hope's direction, by the kindness of the Dean and Chapter.

The limits of Remi's transepts had been similarly ascertained some years ago, but it still remains to fix, if possible, by excavation, the number of the bays of the Norman nave. The western doorways and other features of the front, which have hitherto been ascribed to Bishop Alexander, were claimed by Mr. Bilson to be of somewhat later date.

THE NATIONAL COMPETITION.

THE work submitted for the National Competition is now to be seen at South Kensington. These annual exhibitions are of peculiar interest, inasmuch as they constitute a means of estimating the general condition of the arts in Great Britain. We say "the arts" deliberately, preferring this term to one so loose and hard to define as "art." We are aware that very few of those who have distinguished themselves in these competitions have as yet risen to eminence in the fields they have chosen, yet a large percentage of the prize-winners are destined to take their places in the rank and file of art workers. It must be confessed that the present exhibition is distinctly below the average of last year's. The examiners' reports form discouraging reading. For instance:—"The examiners note that there is a considerable falling off in the work submitted in this class (Modelling Figures in the Round from the Antique) and they note a very lamentable want of effort on the part of both students and teachers." No Gold Medal was awarded in this class. Modelling and Drawing from the Life were equally unsatisfactory; can we forbear being somewhat pessimistic when the very root of all pictorial representation shows so poor a level of achievement? It is the same with nearly every other class, with the exception of Furniture and Interior Decoration, in which substantial advance has been made.

Mr. Leslie M. Ward (1) has gained a Gold Medal for his figure compositions. "The Building of the Ship," a sketch for a mural painting, is very spirited, and vividly conveys the impression of apparent chaos, which such a scene presents. "The Seaport" is composed of insufficiently studied ships. We believe that a timber-built vessel with iron fo'c'sle rails is not often to be seen on the seas. The ship in question must be built of timber, from the width of the stem. "The Timber Shed" is admirable.

The subject of ships leads us to a drawing by Mr. J. S. Mann (233) entitled "Liverpool Docks," for which a Bronze Medal was awarded. The particular aspect of Liverpool Docks which Mr. Mann has chosen is the *Mauretania* in dry-dock. Here is an absolutely accurate portait, in faultless perspective, which in time to come will prove a valuable record of early XXth-century shipbuilding. Its artistic value is, in our opinion, considerable, as we do not share the prevalent belief that accuracy of drawing is destructive of artistic effect. A Gold Medal has been awarded to Mr. B. W. Morral (2) for his design for a gesso panel for the overmantel of a music-room; and we concur entirely with the examiners' decision. Miss Evelyn Paul (3) deservedly carries off a Gold Medal for her designs for colour prints. We doubt, however, whether her subtly designed and balanced colour-schemes could be adequately reproduced by any process. In this connexion, indeed, the examiners remark:—"It would be well for the students to give attention in the preparation of their drawings to the simpler methods of reproduction." The steel presentation trowel and leather case with metal fittings, by Mr. Silas Paul (4), form a welcome relief from the article which usually inaugurates buildings and railways. The material is wrought and chiselled steel,

Digitized by Google

inlaid with gold and silver. The case is of leather with mounts of the same material as the trowel. We do not see any very great merit in Mr. James A. Grant's (5) design for a painted panel. However, those in authority have thought otherwise, as their award of a Gold Medal indicates. There can be nothing but praise for Mr. W. H. Wright's (6) modelled design for a lunette to be placed at the "end of an art gallery." The relief is very delicately done, just standing out to the right degree; the design and handling of the figures excellent. Architecture occupies her just position on the throne in the centre, round her are grouped the attendant arts—painting and sculpture, smithing and pottery. Mr. Fredk. Carter (7) for the third year in succession gains a Gold Medal for his designs for book illustrations. For strong and original qualities of imagination and facile technique there is nothing else in the room to compare with them. His quaint humour is well shown in the "Vendeur d'Amours" and the "Balloonatics." The designs for book-decoration by Mr. W. F. Northend (8) are very sound and careful. One subject is "The Ancient Mariner," and typography and setting alike are admirable. Another is a page of White's "Selborne." We know not how this orthodox divine would have relished this archaic setting; we think it a mistake not to consult the period of a book in designing its typography.

We have now reviewed all this year's "Gold Medallists," and will touch briefly on one or two other works which attracted our attention. Nothing higher than a Bronze Medal was awarded in architecture. Among the most striking in this class was Mr. F. T. Dear's (200) "Study for a Town Church." The plan shows a noble simplicity; the design would look well in perspective, we should imagine. The detail would bear revision; it would have been better had the construction of the dome been shown on the section; it is, however, in our opinion a design which shows very great promise. Miss Noel Nisbet's (156) book-illustrations (for which a Bronze Medal was awarded) are very clever, but we think she is apt to mistake timidity of draughtsmanship for delicacy. A design for tapestry by Mr. Joseph Hirst (62) is very good, and well deserves the Silver Medal which it has gained. Miss Winifred Fison's (40) design for a poster for a tea-shop gains a similar distinction; it is both striking and refined.

More we should have liked to mention, but that limits of space preclude a lengthier review. The Gold Medallists, almost without an exception, well deserve their position; the discouraging feature is the absence of any high award for life-drawing or modelling.

THE ARCHITECTURAL ASSOCIATION.

AT the Annual Exhibition of Drawings made during the session held on Friday, July 16, at 18, Tufton-street, the announcement of the awards was made by Mr. Henry Tanner, the President.

Mr. Tanner, in a short speech, congratulated the successful students, and reminded those who had not taken prizes that success in life is not solely confined to student prize-winners. He expressed the regret the Council of the Association felt at the retirement of Mr. Champneys and Mr. Stokes, and the visitors from the Board of Architectural Education, and welcomed Mr. Ernest Newton, the new Visitor, who had already devoted a great deal of time to the consideration of the school methods and the work in progress. Mr. Newton's interest and advice would be welcomed by all. Mr. Tanner spoke of the difficulty in awarding some of the prizes, on account of the equality of several students.

Mr. H. P. G. Maule thanked those present for coming to the Exhibition, and said that the presence of so many relatives and friends of students was an encouraging sign, and hoped that a brief explanation of some of the educational aims of the Association would not be uninteresting to them.

In the first place there were, he considered, two main factors in any educational scheme worthy of the name. These he would call the educational factor and the technical or professional factor. By the first he meant that process or series of processes by which the mind and intelligence of the student is trained to self-dependence, so that, in Huxley's phrase, "his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of"—one "who can spin the gossamers as well as forge the anchors of the mind." The aim should be to train the student to teach himself, to cultivate and strengthen his powers of accurate observation and imagination, and by every means to endeavour to broaden his general knowledge, culture, and taste. The technical work of the student should be schemed to insure the greatest general proficiency in the average student, a fact which the Association, with the large body of students entrusted to its care, must most carefully remember. One of the greatest curses of education was specialisation at too early a stage. Specialisation should follow a broad general training, as it does in one of the most proficient professions in this country, that of medicine. It appeared to the speaker that the central fact of an architect's calling, both in the past and present, was that he must be a constructor; unless the modern architect has an intimate knowledge of construction materials and workmanship, we shall not get that efficiency which the public rightly demands, not only from those to whom are entrusted the great works of the country, but also from those thousands of others, who in lesser degree contribute to their country's welfare by their skill and efficiency in the exercise of their calling.

At the Architectural Association dinner, a short time since, Sir William Richmond, in a brilliant little speech, called attention to the fact that the architect of to-day stood in danger of being ousted from a great part of his legitimate work by the large firms of decorators, who will decorate you anything from a Pompeiian villa to a new art drawing-room. He (Mr. Maule) ventured to think that there was another and even greater danger. The construction of many of our buildings is for one reason or another largely in the hands of structural engineers. The modern architect was, in fact, between the devil and the deep sea, though which was which he would not presume to say, but unless he is so trained that he cannot only produce a building which is architecture, and at the same time construct it, taking advantage of such new materials and methods as science may disclose, he runs a grave chance of being crushed out of existence altogether. Not that we should never call in the aid of engineers, or cut ourselves off from that able body of men, but that the average architect should be so trained in youth that he is able to face with efficiency in the future those constructural problems which always have lain, and always must be, within the sphere of his work, if he is to be truly entitled to call himself an architect.

It was the aim of the Association School to endeavour to combine these two factors and to frame the educational system so that the student could continue his own training through life, to lead him as far as possible to acquire the capacity for assimilating information, and for depending upon himself; and technically to give him an intimate knowledge of materials and craftsmanship accompanied by a scientific training in methods of construction.

In addition to these there must be that cultivation of taste and fitness which, in combination with the educational and scientific factors, should enable a man to construct scientifically and build with beauty at the same time.

In order to acquire this taste (and it is a great mistake to assume that every architectural student starts his career with an æsthetic soul), it is necessary that the ground covered should be as wide as possible, for it frequently happens that a student may be quite unresponsive to one phase of development and intensely interested by another; but through the one that appeals he is led to see the beauty in others, and thus to formulate a sound taste for himself.

Now there are processes which cannot be hurried, and when the complicated and responsible nature of an architect's calling and the necessarily wide field of training is considered, it is obvious that four or five years is all too short a time for this general architectural education, which should be free from the specialisation which should undoubtedly follow it if the larger aspects of national and monumental architecture are to be rightly considered.

Now it is contended that such a training as this is cramping, and will fail to produce monumental architecture, for the production of which the French and Americans are justly held up to us as the prime exponents, forgetting that the French have never lost a national lithic tradition, while conditions in America are, for many reasons, very different.

Now it must not be forgotten that while the only real formative factors of modern architecture are those of ever-present necessity, in an advanced civilisation, necessity predicates more than mere commercial utility, and a training which only proceeded from that standpoint is no architectural training at all. Therefore, this general training which we here are endeavouring to give would be entirely lacking if it did not include in its teaching a very real appreciation of the qualities which make and have made for the production of greater architecture or which did not lay continual stress upon such general principles as proportion, mass, grouping, rhythm, fine axial planning, and the like. Moreover, it is an actual fact, and always has been since the day school was founded some eight years ago, that by far the greater proportion of the studies given in the studio are set with this end in view, as a careful and intelligent study of the drawing now hanging on the walls would show. But in all these the educational factor must be kept in mind, and the student must not be given problems the solution of which lie beyond his own imagination and efforts.

It is, therefore, for these reasons, that I should like to see every student who is exceptionally able, or who can afford the time, continue his training on a higher plane; and whether it be the Royal Academy School or the National Diploma course which is now suggested, I should like to see fine monumental architecture, town planning, and, in fact, all the more highly specialised forms of greater architecture, made the especial feature. After a sound general training, which had extended over at least four or five years, the clever student would be all the more able to profit by such specialisation while the average student would have had the general grounding without specialisation which is so necessary for his future work. Architectural education to be successful must be made as general as possible, and, therefore, in the early stages framed in the interests of the average student.

After a few remarks upon the danger of mere draughtsmanship, Mr. Maule thanked the Council in the name of the School for their interest and help in the difficult task the Association has in hand, a task which is proportionately harder as numbers increase. Fortunately for the school, the Council and staff worked together, and he personally had always received the most loyal and helpful support from every member of the staff. In conclusion, he desired to thank all students for their good work and keenness, especially those twenty-fourth-year men who had especially distinguished themselves by their hard work and progress in the evening school under the energetic direction of Mr. C. E. Varndell.

Digitized by Google

The following is the list of prize-winners:—

DAY SCHOOL.—SESSION 1908-09.

First Year Awards.

Book Prize for first place in History Test Paper and general excellence in this subject, E. L. Apperly.
Book Prize for first place in Construction Test Paper and general excellence in this subject, E. L. Apperly and R. C. Stevenson, equal.
Geometry, first place, T. F. Ford.
Physics, first place, C. Rowntree.
A.A. Sketch Book for first place in Freehand Drawing, A. E. Maxwell.
Prize for first place in Perspective Drawing Test, E. L. Apperly.

The Studio Prize.

Best portfolio of drawings made during session, R. C. Stevenson.
Recommended for special prize for excellence, A. E. Maxwell.
Hon. Mention:—E. L. Apperly, T. F. H. White, F. P. Spooner, C. Rowntree, L. M. Yetts, T. F. Ford.
Authors of drawings selected for school portfolio:—R. C. Stevenson, A. E. Maxwell, T. F. H. White, L. M. Yetts, E. L. Apperly, T. F. Ford.

Second Year Awards.

Travelling Studentship, 15*l*., for studio and lecture work during session 1908-09, holiday work, and general progress, F. A. Crouch.
Specially commended, A. G. Butler.
Hon. Mention for general progress during session:—E. S. A. Baynes, C. W. Rogers, J. O. B. Hitch, B. P. Gaymer, J. A. Cheston, E. W. Mountford.

End of Session Test.

Subject:—"Study for a Country Cemetery Entrance Lodge." Award made by Mr. Henry Tanner, President A.A.
Study placed first, No. 5, H. B. Chisholm.
Study placed second, No. 17, S. J. H. Prynne.
Hon. Mention:—No. 14, L. D. Martyn; No. 21, C. W. Rogers; No. 20, B. Gaymer.
Drawings selected for presentation to school portfolio:—F. A. Crouch, A. G. Butler, E. S. A. Baynes, C. W. Rogers, J. O. B. Hitch, H. B. Chisholm.
Students recommended for the Association Two Years' Course Certificate:—E. S. A. Baynes, A. G. Butler, J. A. Cheston, H. B. Chisholm F. A. Crouch, B. P. Gaymer, J. O. B. Hitch, L. D. Martyn, E. W. Mountford, C. W. Rogers, S. E. Shurmur, R. Talvalker.

EVENING SCHOOL.

Second Year.

1. D. J. S. Dawson, Scholarship, 15*l*. 15*s*.
2. H. D. Kidd, Book Prize, 2*l*. 2*s*.
3. H. V. C. Curtis, Master's Prize for hardest worker.

Hon. Mention:—G. F. Rowe and J. Hardman.

Third Year.

1. P. D. Hepworth, Scholarship, 15*l*. 15*s*.
2. H. E. Moss, Book Prize, 2*l*. 2*s*.
3. C. Castelow, Master's Prize for hardest worker.

Hon. Mention:—E. J. Hatherall, H. A. Thomerson, B. P. Collin, P. M. Andrews, and H. A. Gold.

Fourth Year.

1. C. A. Farey, Scholarship, 15*l*. 15*s*.
2. B. F. Matthews, Book Prize, 2*l*. 2*s*.
3. R. M. Pigott, Master's Prize for hardest worker.

Hon. Mention:—L. K. Hett, G. D. G. Hake, A. D. Robinson, G. F. Clarkson, and R. W. Cable.

LECTURES—FIRST YEAR.

Elementary Construction.
Norman Keep, Book Prize.
Plain and Solid Geometry.
G. H. N. Inman, Book Prize.
Preparatory Physics.
D. J. S. Dawson, Book Prize.

SECOND YEAR.

Intermediate Physics.
F. A. Crouch, Book Prize.
Grecian and Roman Architecture.
G. M. Eaton and R. N. Jackson, Book Prize.
Early Christian and Gothic Architecture.
C. W. Rogers, Book Prize.
Renaissance Architecture.
R. N. Jackson, Book Prize.

THIRD YEAR.

English Architecture.
P. J. Adams, Book Prize.
Advanced Physics.
W. J. Durnford, Book Prize.
Materials.
P. J. Adams, Book Prize.
Drainage and Water Supply.
H. A. Thomerson, Book Prize.

FOURTH YEAR.

Ventilation, Lighting, and Heating.
G. F. Clarkson, Book Prize.
Iron and Steel Construction.
G. F. Clarkson, Book Prize.
Advanced Construction.
G. F. Clarkson, Book Prize.
Architectural Features.
G. F. Clarkson, Book Prize.
Professional Practice.
G. F. Clarkson, Book Prize.

THE ROYAL SANITARY INSTITUTE AT LEEDS.*

THE Lord Mayor of Leeds presided over the conference of Municipal Representatives on July 19.

In his presidential address the Lord Mayor dealt with the local conditions of the district, and, touching on the improvement scheme which is in progress, said that, by obtaining Parliamentary powers, the Corporation had become possessed of a very large area of land on the north side of the parish church, and had planned certain large thoroughfares through it, which would allow light to penetrate, and air to circulate amongst existing houses. In the meantime, in order to render the latter less unhealthy, they had loopholed the property left standing, in those parts of the area which they were not at once prepared to demolish, so as to allow adequate ventilation and sunshine to penetrate in these places. At the same time some of the worst slums had been entirely demolished, and new houses erected, some on the site of those demolished and a considerable number further away from the centre of the city. This process of decentralising the city had been facilitated by the installation of a highly efficient system of tramways. It was now possible to get away easily from the centre of the city to all the suburbs, and, while a certain amount of depopulation in the centre of the city was continually taking place, large new towns had arisen in the outskirts of the city. It was obviously of immense advantage to the community that the children should be brought up in wider streets, better houses, and under healthier surroundings than can possibly exist in the central and more crowded parts of a city.

Town Planning.

Mr. Percy Robinson, F.R.I.B.A. (President of the Leeds Architectural Association), in a paper on "Some Aspects of Town Planning in Relation to Health," said he did not propose to attempt to cover the whole area of possibilities which such a subject opened out, but to discuss the relations of health to true beauty, and true beauty to health. The desire for beauty was a natural instinct which had expressed itself in all ages and in all nations. Circumstances might at times conspire to suppress it, but such suppression was at all times inimical to the health and well-being of the people. It might be taken as an axiom that the decline of art was an indication of the decadence of the race. If they went back to the times of the Roman Empire they found that when true art gave way to mere splendour and ostentation, then the decay of Rome set in. Coming to the present day, they had Japan as a modern instance, a nation loving art and creating it; and consequently an advancing nation. His proposition was that it was not only inartistic but insanitary to be surrounded by buildings or objects doing violence to every law of art and taste in design, detail or colour. The average man was influenced to an enormous degree by his environment. If he lived in an artistic atmosphere the influence was shown in the conduct of his life. He was better intellectually and morally, and his home unconsciously became brighter and more pleasant. The importance of these influences had been realised by men like Lever, Cadbury, and Rowntree. From the commercial point of view they had found it desirable to provide such surroundings; and the experiments at Port Sunlight, Bournville, and Earswick had proved the soundness and practicability of their theories. As a nation they were lacking in that spirit of civic pride and artistic perception which was so characteristic of their Continental neighbours. To realise this they had only to compare the brightness and cheerfulness of the average Continental town with the dullness and monotony of most of their English towns, and particularly their great industrial centres of the north. If something could be done to lift this pall of melancholy and monotony and infuse a little artistic light, it would brighten up not only the town or city as such, but the lives of the inhabitants, and so promote the general health. Modern science had marched at a rapid rate, especially in connexion with the development of their great cities and the provision of electric lighting and traction, water supply, and sewage systems, and other undertakings of a commercial and utilitarian character; but there had not been a corresponding advance in artistic matters. They had regulations to protect the public in various directions, sanitary regulations to guard against infection or poison being conveyed into the system through the senses of smell, taste, or touch; they had even regulations to control street noises that the ear might not be offended; but they had no regulations to protect the eye from being offended by the hideous objects and unharmonious colours which one might encounter in any English city, and which all contributed their quota to the sum total of degenerate moral tendencies. The proper development of streets, open spaces or thoroughfares, and the character and distribution of the buildings was a serious matter, requiring careful thought and foresight, and a comprehensive view of many side-issues. Something more than technical engineering and mere considerations of traffic and transit were required. The ultimate aspect should be realised and the inherent elements or latent possibilities of each problem should be developed in such a manner as to give character and artistic expression to the completed scheme. Hitherto the artistic side of city development had been almost entirely neglected, both by the municipal authorities and the individual owner. They had only to look at the recent suburban growths of any of their large towns or cities—Leeds, for example, to see the deplorable result of that short-sighted policy—miles upon miles of dreary streets and featureless houses, monotonous and uninspiring. That was surely wrong even from the commercial point of view, but the speculating builders who were chiefly responsible for that class of property appeared to have no initiative. They got into a rut, and everlastingly continued mechanically repeating their rows of houses without any attempt at design, like so many brick boxes with slate lids all exactly alike, as though everyone had the same-sized family, the same mode of life, and the same requirements. If, instead of that endless repetition, the houses were varied somewhat in size and character, and the long roof lines broken occasionally by gabled attics, it would not only have relieved the monotony, but would also have resulted in better letting. The builder was not entirely responsible for this state of affairs, as the aspects of the streets depended upon the manner in which they had been laid out. In England the development of new building estates was generally in the hands of the individual owner and the municipality had—beyond the application of their by-laws as to width of streets, etc.—no control such as existed in Germany, where the authorities regulated direction as well as the character of their new growths. Different heights and different degrees of proximity were proscribed according to the locality. Towards the centre, five stories were allowed; further off, this was reduced to three, and then the houses must be detached. If the scheme was to be successful, the site should be thoroughly studied with a view to taking advantage of all its possibilities and turning to account in the design any features of interest or beauty, such, for instance, as fine old trees which it might be possible to preserve. The contours should be considered, and the roads and general lay-out adapted to them as far as possible. This would result in adding interest and variety, and at the same time saving of cost in the formation. But how often did they find the surveyor made himself a clean sheet to start upon by clearing

* Continued from last week, p. 96.

Digitized by Google

the site of every tree and hedgerow, and attempting to level up by taking off the tops of the hillocks and tipping them into the hollows, with the result that they were faced with that bare, naked newness which was so characteristic of the average building estate. Much might be done to improve their residential districts if they had more elastic bye-laws in regard to both streets and buildings. At the present they had in most towns a standard width of 42 ft. for main streets, and 36 ft. for subsidiary streets, so that their authorities were often in the helpless position of having to sanction the construction of a street 36 ft. wide which would obviously become a main thoroughfare in the near future, while on the other hand they demanded the same width for a road which led to half-a-dozen cottages where for the passage of an occasional cart a width of 20 ft. would be ample. Of course, the real object in insisting upon that width of street was to secure the necessary air space about the building, but to require builders to provide air space in such an expensive form as paved streets was in many instances unnecessary and illogical, as it could be provided equally well by fixing a building line which would permit of an economical widening of the road should future occasion demand it. The intervening space between the buildings and road could then be laid out as garden space; and, whether devoted to public or private use, the first cost and subsequent maintenance would be less, the appearance would be enhanced, and the health-giving properties greater. It was impossible in a short paper to deal with the many aspects which the subject presented; but, whether it be a case of planning a new home or district or whether it be the alteration of an old one, the scheme should be comprehensive and carefully thought out from every point of view, not only in regard to practical requirements of traffic transit and similar purely practical matters, but with respect to the ultimate effect which would be produced. The grouping of the principal buildings so as to form a focal point where possible, the formation of lines of approach, the provision of open spaces, the character and scale of buildings in relation to existing surroundings and possible future surroundings, the alignment of streets generally with a view to effect, the proportion of streets in relation to the height of buildings, and the effect of any buildings of historical or architectural interest must all be considered in regard to forming a harmonious whole. There were the minor details of street furnishings and accessories, such as lamp standards, trolley poles, fire alarms, name signs, etc., which were also worthy of more consideration than they received at present, and which might be invested with some artistic character so that they would add to and not detract from the convenience and beauty of the street. Civic art had a commercial value quite apart from the influence it might have on the lives of the inhabitants. Fine streets and buildings rendered a city attractive, and the greater the number of visitors the greater the prosperity of a city. They must remember also that they were the trustees of the future. Architecture had been truly defined as history written in stone. From the work of the past they were enabled to obtain closer insight into the profoundest characteristics of a nation, and to interpret the thoughts, habits, and instincts of the times, and so future generations would judge them by the works they produced to-day. If the provisions of the Town Planning Bill were to be really effective, the artistic side of municipal representation in this direction must not be ignored, and the remedy for the present state of affairs would appear to lie in the suggestion which had been made of forming advisory committees of architects, artists, landscapists, engineers, representatives of various educational and other interested bodies to assist the municipal authorities in the consideration of any town-planning scheme, street improvement, or other city development. If such a scheme were adopted, many of the existing difficulties would be removed, and it would undoubtedly tend towards an improvement in the appearance of our towns and an awakening interest in civic æsthetics.

Dr. F. E. Fremantle (Medical Officer of Health to the Hertfordshire County Council) contributed a paper on "The Garden City at Letchworth and Town Planning" in which he discussed the question of to what extent such a town was likely to be affected by the Budget. Letchworth was a most striking example of increment already valued and obviously earned. The value was 380,000*l.*; the expenditure had been 283,000*l.*, and the increment, therefore, had been 97,000*l.*, or something over 25 per cent. on an expenditure spread over six years. At Letchworth the increment was obviously due to the promoters of the city, and in only a very small degree could it be due to the community or the Parish Council, and still less to the State. The company deserved to reap any advantage which might accrue from the success of their scheme, and were the most likely to put such advantage to good use in the interests of the community. An increment tax would cripple the company in its operations, and would necessitate their handing over much of their municipal work to the Parish Council, who were far less qualified to undertake it.

Mr. E. T. Hall, F.R.I.B.A., said that Letchworth was an admirable example of what might be done if they started *de novo*, but it was not given to most of them to have that opportunity, and they had rather to dealt with the evolution and development of cities like Leeds and its suburbs. It was not possible to rebuild a city except piecemeal, but a scheme should be laid down on broad lines, and this should be carried out as occasion afforded the opportunity. The principles of such a scheme should be agreed upon, and he suggested the following points as of some importance: Main routes from city to city, or between great centres, should be relatively straight, broad, and true-lined, and at all intersections there should be circuses, so that main routes could at once be recognised. Towards these, radiating streets should converge, and in the centre should be some fine or architectural monument. Municipal buildings should be on island sites and streets should be made, so that these buildings might form features of interest in the vista. Suburbs should be laid out on a definite scheme to conserve woodlands and water, and not only should parks be made, but playing fields should be set apart in small areas of 8 or 10 acres, interspersed all over the plan for the benefit of the immediate residents. Houses should be built with good gardens and of pleasing design, as the effect of environment on a man's life was of importance to raise his soul above sordid surroundings. His proposals were not unpractical, for they had already been carried out on the estate of the Governors of Dulwich College, which was situated only 4½ miles from Charing Cross. On that estate no overcrowding of houses was allowed, and a definite control was exercised over the design of the houses. Seventy-five acres of land had been handed over to the care of the public, and 160 acres had been set apart in plots of a few acres for playing fields.

Major Ronald Ross thought that Berlin was a well-built city, but doubted whether cheap houses could be built of a pleasing design. He thought it was the great variety of the houses which spoiled the appearance of English cities, and considered that uniformity would produce more artistic results.

Mr. Lambie (Lanarkshire County Council) asked the conference to consider how they were going to get beautiful cottages for people whose incomes did not exceed twenty shillings a week, and who probably had a family of four children. Could town planning be made really practical under such conditions unless they touched the land question?

Mr. R. G. Kirkby, A.R.I.B.A. (City Architect, Bradford) said that in the development of cities to-day a large amount of building was being proceeded with. Suburbs were being opened up in all directions, most of them without any definite plan in the sense of formal or architectural arrangements, the roads being framed merely to comply with local by-laws which were frequently very defective. Some proper architectural control should be obtained in the laying out of suburbs in city extensions. He disagreed with Major Ross's view that they could not build cheap but beautiful cottages. It was not necessary to cover such dwellings with spurious ornamentation, but a cottage of simple lines, and quiet in character, could be designed to satisfy all the reasonable demands of architecture. In Cologne town planning and suburban development had proved profitable, whilst in Wiesbaden a railway station had been built by the authorities out of the proceeds of such schemes. In England they were merely playing with the question. He thought the time had arrived when they should deal with it seriously, and to that end they should secure the best available advice in the laying out and beautifying of their cities.

Baillie Anderson (Glasgow) observed that the question of finance was the great stumbling block in the way of housing reform. Cheap houses could not be obtained without cheap land, and the city's needs were the opportunities of the landowners. He suggested there should be less parliamentary control and more latitude given to local authorities.

Dr. Miller (Hereford) thought it would be an advantage if they followed the example of some German towns and placed the houses of the working classes at one end of the town. It had been shown in the existing garden cities that a workman's house could be built in blocks of two or three of an artistic appearance and let at a rental of 5*s.* weekly. In Hereford a co-operative housing society had recently erected dwellings containing two living and two bed rooms which would be let at 4*s.* 9*d.* a week, and there was a small garden in connexion with each house.

Mr. Robinson, in reply, said he was not advocating irregularity, but variety, based upon a properly thought out scheme. What he complained of was the monotonous and featureless character of many of their streets, though he would not object to uniformity and orderliness, provided it did not degenerate into monotony. Architecture was not such an expensive luxury as some of the speakers seemed to think. It was more a question of thoughtful planning and proportionate design than mere loading with ornament.

Housing Question.

At the sitting of the Architectural and Engineering Section on July 20, Mr. Councillor G. F. Bowman, in the course of his presidential address, remarked that architecture and engineering had perhaps done more to bring about the better health of the people in their large cities than anything else. The working classes were better housed to-day and lived under better conditions than ever in the past. Housing and town-planning projects should be looked at from broad and practical lines, for there were dangers of such matters being dealt with by extremists, some of whom, for the sake of so-called art, would shut out light and air, and would use absorbent materials so as to get a colour and tone quickly, and thus give what they considered an old and artistic effect. Others delighted in installing fittings which would answer half-a-dozen purposes. For his part he believed the simpler they made the dwellings for the working classes the better. Proceeding to touch on the Housing and Town Planning Bill, which would prohibit back to back houses, the Chairman said that Leeds more than any other city had encouraged

Digitized by Google

the erection of back to back houses. A great deal had been said about such houses, probably by persons who knew nothing about them. Prior to 1870 there were no by-laws in Leeds, and back to back houses were crowded on the land, but this applied equally to other classes of houses. Under the present by-laws he maintained that they had, in back to back houses, clean, self-contained dwellings, which for the minimum of rent gave the maximum amount of accommodation and comfort. It was a question in regard to the housing of the working-classes, which type of dwelling gave the greater advantage for the money. The back to back houses were self-contained and independent dwellings, and they could not be built under the present by-laws without ample space surrounding them. They must face up to a 36 ft. street at least, and in many cases to a 42 ft. street. They could also only be built four in a row, leaving a free space 15 ft. between one block and another. If it were desired to build the houses in a longer row, then there must be 15 ft. gardens or areas in front. The whole of the space surrounding the house was kept clean, and the air was fresh. As the whole of the house faced the street the tenants took care to keep them clean, and were far more particular than they would be with back yards, and as the houses were not built to a great height, and the streets were wide, they enjoyed a wide angle of light. Houses of this type could be built at a much cheaper rate than any other. The little experience they had had of flats in Leeds showed that they were unpopular. The Corporation had erected some tenements from plans sanctioned by the Local Government Board, and, although the rents were very low, only six were let out of twenty-four. He saw no advantages which a tenement house had over back to back houses. They had less light and little coal and larder accommodation. Those who dwelt on the upper floors had the smell of the cooking of those below, whilst those on the lower floors had the dust of those above shaken upon them; whilst the bedroom doors often opened into the living-room, so that the air could not be fresh. With regard to the through houses occupied by artisans, as they knew, the ordinary living-room generally faced a back yard enclosed by a high wall, and a portion of the yard was occupied by the water-closet and the ash bin. It often formed an area in which little light or ventilations was available, and it was the place where the children were sent to play, so that they could be under the eye of the mother. In the last ten years 7,802 through houses and 12,110 back to back houses had been erected in that city, and, having visited many towns, he found no place where the working-classes were better housed than in Leeds.

Mr. W. T. Lancashire (City Engineer, Leeds), described the operation of the Housing of the Working Classes Act in that city. In Leeds, 19,111 new dwellings were erected from 1900 to 1907 inclusive, providing, at five persons per house, for 95,555 persons, the estimated increase of population for the same period being about 52,500. The Corporation have to date, as provision for the Quarry Hill Area, provided accommodation in tenement buildings, erected for them by a contractor, for 108 persons, the rentals varying from 3s. 6d. to 4s. 6d. per week, inclusive of rates. On the basis of the number of persons displaced, two-thirds of York-street area has been cleared, and one quarter of the Quarry Hill area. In the York-street area three streets have been or are being widened to 60 ft., and subsidiary streets have been laid out and a number of new buildings have been erected. St. Peter's burial ground (disused) is being converted into an open space. In the Quarry Hill area a portion of a new street, 75 ft. wide, has been constructed, and a continuation is in hand, and other streets have been widened, and more main thoroughfares are in contemplation. "Loopholing," or the removal of obstructive buildings, and the flagging of open spaces is being proceeded with in places where immediate wholesale demolition is not contemplated.

Mr. Munce (Belfast) considered that Leeds has begun its housing in the wrong place. The men who could build Windsor Castle knew nothing about building workmen's houses, for this was the duty of a specialist. He knew an architect who had built thousands of workmen's dwellings, but, if he received another kind of job, he got another architect to join with him, for he admitted he did not understand it. He contended that they ought not to put workmen's houses in the centre of the town. He strongly criticised the back to back houses of Leeds, and submitted that it was not a question of workmen liking them better, but merely a question of rent.

Mr. Alderman Lupton (Leeds) said they got as good ventilation in a back to back house as a person did who opened the window of his bedroom, but kept his door shut. It was all very well to theorise, but, after all, in their present state of civilisation a builder put up houses and properly looked for a return on the money invested.

Mr. Cowan (Chief Inspector, Irish Local Government Board) considered that the Leeds people had great courage in defending those back to back houses, because, in view of the trend of modern thought, it was idle to say such houses could be as good as those which had through ventilation. He had examined some of these houses being built and found upstairs rooms of 540 cubic ft. and no flue. Even in Ireland, which was supposed to be so backward in many ways, they insisted on the smallest room being 640 cubic ft., and they required a chimney in each room.

Mr. E. T. Hall, F.R.I.B.A. did not think that the workmen themselves were the best judges of the accommodation they required; for men used to poor habitations were so conservative that it took them a long time to get used to better surroundings. He thought the improvement scheme which Leeds had embarked upon was a magnificent one, but he thought it a pity that they had to build houses for workmen in a congested city instead of taking them out. The evil arose from the Act of Parliament which required workmen to be rehoused on the sites from which they were displaced; but this Act was passed before the development of the great tramway systems. It would be a great boon if the Act were altered so that workmen should be taken to well-planned suburbs. If that were done, they would get rid of the discussion as to what was the best type of house for workmen in a city. The reason why big tenement houses had been erected in the south, and more particularly on the Continent, was because of the desire of the people to be concentrated in the city, and there was no other way to find habitations for them. He was glad to hear that the people of Leeds did not take very readily to them, for great barracks of any purpose were to be avoided. It was curious how the barrack system was used on the Continent, even for hospitals. As to back to back houses, everyone would admit in principle that a through ventilated house must be better, but the argument there was that the back to back house was the best which could be got under the circumstances, having regard to the necessity for building in the area. If that were so he would make a suggestion: Why did they not provide ventilating gratings in the walls so that they would always have a current going through. A suggestion had been made that the rows of houses should be planned with an axis north and south. It sounded difficult, but in a relaying-out scheme it was a thing which could be done. He agreed with Mr. Cowan that no room ought to be constructed without a ventilating flue.

Mr. E. G. Mawbey (Borough Engineer, Leicester) illustrated on the blackboard the type of houses built in pairs in Leicester, with a passage between each pair, giving a private yard and garden to each house; facilities and drainage direct to the street sewer, and for the removal of refuse. He considered that the working classes should have separate houses wherever possible.

The Chairman said that as an architect he would like to point out that architects must not be blamed for the back-to-back houses. His experience was that such houses rarely passed through the hands of an architect, but were mostly in the hands of builders, and they were all more or less stereotyped, which was regrettable from the architect's point of view. From the point of view of cheapness it was a different thing. Mr. Cowan had advocated through houses without a back street, but in such cases the drainage had to pass under the houses, which was undesirable, and moreover the whole of the area round the dwellings was not likely to be kept well cleansed. He quite agreed that it was desirable to have a flue or fireplace in each sleeping-room.

The members of the Congress were invited to visit the Works of the Leeds Fireclay Company, Ltd., and a number of members availed themselves of the privilege. A special exhibition had been prepared, showing the products of the company's various works, including a section of a swimming-bath, a park urinal in vitreous terra-cotta, closet partitions and workmen's shower-baths erected in patent partition bricks, as well as examples of the company's productions in the way of glazed bricks, terra-cotta, porcelain baths, lavatories, drainage specialities, etc. The company provided tea and other refreshments for the visitors.

[Our report will be continued next week.]

THE WHITGIFT HOSPITAL, CROYDON.

THE foundation-stone of Holy Trinity, or, as it is more commonly called, the Whitgift Hospital, at Croydon, was laid in 1596, twenty-three years before Abbot's stately hospital at Guildford was commenced.

The Croydon charity was completed during Archbishop Whitgift's lifetime, he being unwilling, as he informed Stow, to be "a cause of their damnation" to his executors.

The building is built of red brick and is quadrangular in plan. The external gable of the west front exhibits the initials I. W., the arms of the founder and of the See of Canterbury, and an archbishop's mitre placed within a small recessed panel between two small windows. On the doorway is the motto, "*Qui dat pauperi non indigebit*" (He who giveth to the poor shall not want).

Strype, in his *Annals*, calls it "this memorable and charitable structure of brick and stone, one of the most notable monuments founded in these times, for a harbour and subsistence for the poor." Like its sister foundation at Guildford (see the *Builder*, January 9), Whitgift's Hospital has retained nearly the whole of its original doors, benches, tables, and fittings. The chapel, situated in the south-east corner of the quadrangle, is a small plain building the east window of which contains the arms of Whitgift and of Canterbury. At the west end is a portrait of the archbishop and one of an unknown lady in Elizabethan costume, which certain guide-book writers will insist on calling, somewhat unkindly, the archbishop's daughter, notwithstanding that Whitgift was a lifelong bachelor.

The old dining-hall has its original panelling and furniture; some fragments of old glass, and a quantity of ancient documents relating to the foundation. Above the dining-hall is a fine apartment used by the warden.

Whitgift was one of the most learned of the reformed archbishops. He had been master first of Pembroke and then of Trinity College, Cambridge. His reputation as a preacher caused him to be commanded to preach at Court, when Elizabeth is said to have expressed her satisfaction by the remark that this was a "White Gift"

Digitized by Google

indeed; and later in his career she was pleased to call him with the facetiousness allowed to royal and elderly maidenhood her "black husband."

The tomb of Whitgift is in the parish church of Croydon. The original, with the exception of a few fragments, had been destroyed by fire, and the present monument was restored by Mr. Oldrid Scott and unveiled by Archbishop Benson in 1888. Whitgift, however, needs no other monument than his Hospital of the Holy Trinity, which is not only a fine building, but a charitable institution as well. It is to be hoped that it will not be pulled down merely for the purpose of widening the road at this particular spot. The school house, in George-street, also built by Whitgift, has already been removed, but the authorities of Croydon will be dead to all feelings of decency and self-respect if they sanction the demolition of this noble foundation. Local authorities are apt to forget that they are but the temporary custodians of these ancient buildings, which it is their duty to hand on, unimpaired and uninjured, to the generations yet to come. Crosby Hall, and a host of old London buildings, have gone to fill the maw of the dragon called Progress; but if the monster starve his insatiable appetite must be denied so charming and delicate a morsel as the Hospital of the Holy Trinity, with its singularly appropriate motto, "*Qui dat pauperi non indigebit.*"

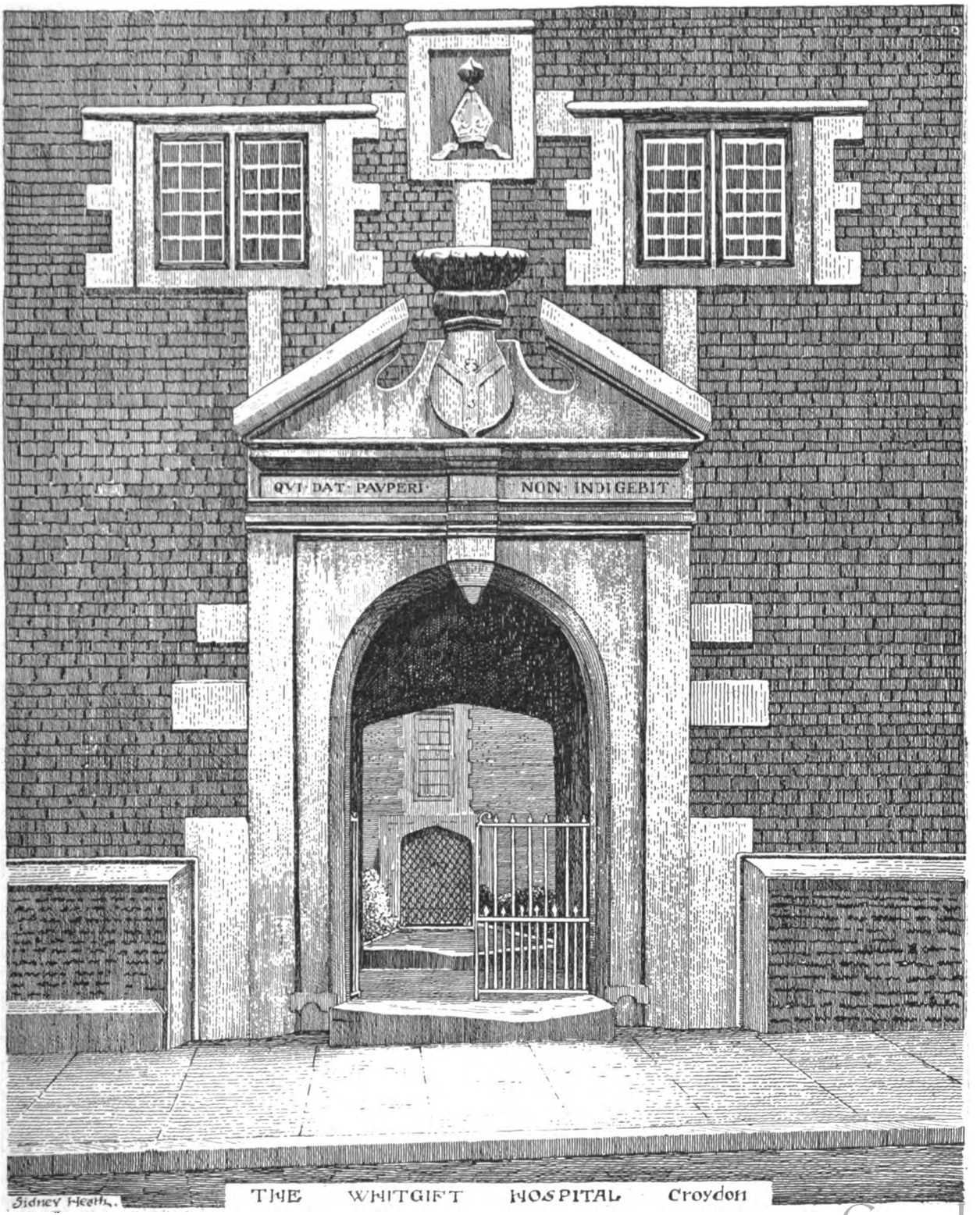
SIDNEY HEATH.

NOTES FROM FRANCE.

THE Department of Public Instruction and Art has appointed a Commission with the object of centralising the action of the various bodies which are more or less directly concerned in maintaining the monumental aspects of Paris. Among the members of the new Commission are the following architects—MM. Bouvard, Bonnier, Laloux, Selmersheim, Formigé, Grandjean, Girault, Umdenstock, and Sanson.

M. Tournaire, architect to the Department of the Seine, has been commissioned by the Conseil-Général of the Seine to make the plans and designs for the new Morgue, which is to be built on the Place Mazas, not far from the Gare de Lyon. The building, to the cost of which the Government will contribute, will be much larger than the existing Morgue, and will include, besides the exhibit-room and refrigeratories, laboratories and dissection-rooms and other installations necessary for the "service de médecine legale."

The Under-Secretary of State for Art has just inaugurated a new museum of Renaissance Art which has been arranged in the celebrated château of Azay-le-Rideau, purchased some years ago by the Government. This museum is to some extent a reconstitution of the furniture and decorations of a



THE WHITGIFT HOSPITAL Croydon

Digitized by Google

nobleman's residence of the XVIth century The scheme has been rendered possible in great part by the liberality of various wealthy collectors, who have presented to the Government a number of fine examples of ancient furniture and tapestry.

The death is announced, at the age of sixty-six, of M. Hannotin, architect, of Lille. He was a pupil of André and of Cendrier, and had acquired a special reputation for success in public competitions, as well as by some important buildings which he erected at Lille and in the Nord Department.

The Académie des Beaux-Arts has given its award on the architecture competition for the Prix de Rome. The Grand Prix is adjudged to M. Boutterin, pupil of MM. Raulin and Héraud. Two second prizes have been awarded; to M. Madeline, pupil of M. Deglane, and to M. Lauzanne, pupil of M. Laloux. All the three prizemen are Parisians.

M. Injalbert, the sculptor, has completed the commission given him by the Government for the decoration of the transept of the Panthéon. The work is a kind of apotheosis of Mirabeau, representing the orator at the Tribune. At the four angles of the pedestal are placed figures representing Royalty, Revolution, History, and Grief, the latter as weeping over the death of Mirabeau.

In the building of the Faculté de Médecine a monument to Professor Brouardel has been inaugurated. M. Denys Puech is the sculptor. The monument consists of a pedestal bearing a bust of Brouardel; at the foot of the pedestal is a group of two symbolical figures, a woman and a young girl.

The statue of Victor Hugo by M. Rodin is shortly to be placed in the garden of the Palais Royal.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE SUMMER EXAMINATIONS.

The Preliminary.

THE Preliminary Examination, qualifying for registration as *Probationer R.I.B.A.*, was held in London and the undermentioned provincial centres on June 14 and 15. Of the 178 candidates admitted, claims for exemption were allowed to the number of 52. The remaining 126 candidates were examined, with the following results:—

District	Number Examined.	Passed.	Relegated.
London ..	62	50	12
Bristol ..	9	6	3
Cardiff ..	9	7	2
Glasgow ..	8	7	1
Leeds ..	10	9	1
Liverpool ..	7	7	0
Manchester ..	14	11	3
Newcastle ..	7	7	0
	126	104	22

The passed and exempted candidates—numbering altogether 156—have been registered as Probationers, and are as follows:—

C. F. Aldous, Putney
G. A. Allen, Paddington, W.
W. G. Allen, Clifton, Bristol
W. H. Archbold, Middlesbrough, Yorkshire
A. J. Ashdown, Harrow-on-the-Hill
J. Atkinson, Dalton-in Furness
S. H. Bardens, Ipswich
J. W. Barrow, Morecambe
E. S. A. Baynes, London, S.W.
P. D. Bennett, Edgbaston, Birmingham
E. C. Bland, Wellingborough
G. A. Booker, Hillsbro', Sheffield
G. B. Booth, London, N.W.
W. H. Bowmer, Oxford.
L. C. Brewill, Edwalton Valley, Notts
G. D. Brough, Balham, S.W.
A. S. Brown, Slough
R. E. Brown, Dunedin, Portway, Wells
J. C. C. Bruce, Newcastle-on-Tyne
G. B. A. M. Brunelli, Lincoln's-inn, W.C.
D. Bush, Preston
A. J. Butcher, Weston-super-Mare
A. S. G. Butler, Kensington, W.
W. Butler, Normanton, Yorks
H. W. Cash, Harlesden, N.W.
F. M. Cashmore, Hampstead, N.W.
C. G. Catchpole, Ipswich
A. G. Chant, Lancaster
C. L. Clayton, Brighton
H. C. Cochrane, Rathgar, Dublin
R. D. Coldham, High Barnet, Herts
T. S. Copplestone, Southernhay, Exeter
C. W. Craske, Nottingham
W. L. Culverwell, Penylan Park, Newport, Mon
M. Day, Westbourne Park, W.
J. Dodd, Newcastle-on-Tyne
R. F. Dodd, Castletown, Isle of Man
W. J. Doherty, Londonderry
E. H. Edwards, Bradford
B. Farmer, Siddington, Cirencester, Glos
S. S. Fausset, Belfast
I. Fenner, Marfleet, Hull
T. P. Fish, Redland, Bristol
A. L. Freaker, Clapham Common, S.W.
E. Frear, Nottingham
A. S. Furner, Redland, Bristol
E. Gee, Waterloo, Liverpool
C. Goldschmidt, Withington
D. J. Gordon, Sevenoaks
J. Gray, Hyndford Bridge, Lanark, N.B.
C. Grellier, Epsom
W. H. Gunton, London, E.C.
W. B. Hall, Folkestone
N. G. Harland, Lower Clapton, N.E.
C. Harrington, Liverpool
M. Harris, Ealing, W.
A. R. G. Hart, West Kensington, W.
F. L. Hawes, St. Quintin Park, W.
S. B. Higgott, Branstone, Burton-on-Trent
C. Hoffman, Boscombe, Bournemouth
M. R. Hofler, Eastcote, near Pinner
C. E. Holaway, Chester
R. W. Holden, Bolton
K. Holst, London, E.C.
W. S. Holt, Linthorpe, Middlesbrough
E. L. Hooper, Launceston
J. H. Hopewell, Eastbourne
A. L. Horsburgh, Streatham Hill S.W.
C. C. Howell, Aberavon
F. E. Hudson, Streatham, S.W.
B. Hughes, London, E.C.
G. F. Ingham, Hullen Edge, Elland
C. H. James, Tuffley, Glos
W. H. Jamieson, jun., West Bridgford, Nottingham
E. P. Jay, Littlehampton
R. H. Jenkins, Hemel Hempsted
W. M. Jenkins, Port Talbot, Glam
B. H. B. Symons-Jeune, Henley-on-Thames
D. H. John, Cefn Cribbur, near Bridgend, Glam
A. G. Johnson, Leytonstone, N.
R. S. Johnson, Croydon
T. Johnson, Wigan
A. F. Jones, Oswestry, Salop
J. R. Jones, Yanwath near Penrith
G. A. Joslin, Beeton, North Woolwich, E.
G. S. Kessing, Melbourne, Victoria
A. J. Kitchener, Stevenage, Herts
R. E. V. Knights, North Kensington
L. H. Lait, Shepherd's Bush, W.
H. Lambert, Richmond, Surrey
H. Landy, Canonbury, N.
J. H. Lawrence, Skewen, near Neath
W. V. Lawton, York.
H. G. Leigh, Clapham Park, S.W.
E. C. Lemon, Birkdale, Southport
R. Lewis, Bridgend, Glam
T. D. Lindsley, Wakefield, Yorks
A. E. Lowes, Newcastle-on-Tyne
E. J. T. Lutyens, Bedford
C. J. McCausland, Carshalton, Surrey
J. Macgregor, Dunfermline
R. McLachlan, Lewisham, S.E.
G. McLean, Portmadoc, North Wales
F. G. Mant, Lincoln's-inn, W.C.
H. P. Maxwell, Purston, near Pontefract, Yorkshire
F. J. Maynard, Leytonstone, E.
J. S. Mellows, Stapleford, Notts
W. N. Milburn, Wetheral, Carlisle.
W. S. Millward, Roath Park, Cardiff
A. Mitchell, Aberdeen
W. G. Newton, Kensington, W.
C. E. Nichols, Eckington, Sheffield
G. B. Owen, Hampstead, N.W.
J. H. W. Perrin, Reading
C. L. Pope, Southampton
E. C. Preston, Chester
G. F. Quarmby, Earl's Court, S.W.
F. Ratcliff, Sheffield
W. D. L. Rayner, Chiswick, W.
C. B. Reid, Vauxhall, S.W.
H. G. Rhodes, Stockport
H. L. Rhys, Bridgend, Glam
C. G. Ripley, Ipswich
A. F. Robertson, Methven, Perthshire
P. G. Robinson, Chapel Allerton, Leeds
L. O. Ross, London, S.W.
E. W. Scammell, Bristol
S. B. Seabrook, Ipswich
A. N. Shelmerdine, Liverpool
R. R. Shipley, Gateshead
B. Sibbitt, Liverpool
A. Silcock Bath
F. H. Silcock, Bath
E. F. Smith, Walton-on-Thames, Surrey
E. K. Smith, Muswell Hill, N.
S. G. Soper, Brockley, S.E.
N. S. Stephen, Mallington, Chester
W. A. Taylor, Wandsworth Common, S.W.
K. C. M. Teather, Cardiff
R. Tinker Southport
J. B. L. Tolhurst, Beckenham, Kent
L. D. Tomlinson, Scarborough
C. W. Townsend, Denstone College, Staffs
W. M. Traylor, Newport, Mon
N. A. Walton, Bramhall, Cheshire
R. W. Wardill, Chelmsford
W. K. Webber, Bournemouth
J. R. Whipp, Ashton-on-Mersey, Cheshire
T. L. Wills, Hightown, near Liverpool
A. Wilson, Methil, Fifeshire
R. Wilson, Falkirk
A. M. Winder, Oldham
W. Wooler, Manchester
E. J. Wray, Hertford
C. J. M. Young, Perth
G. C. Young, Perth.

The Intermediate Examination.

The Intermediate Examination, qualifying for registration as *Student R.I.B.A.*, was held in London and at the undermentioned provincial centres on June 14, 15, 17, and 18, when 144 candidates were examined. The results are reported as follows:—

District.	Number Examined.	Passed.	Relegated.
London ..	87	36	51
Bristol ..	5	3	2
Cardiff ..	4	0	4
Glasgow ..	4	3	1
Leeds ..	19	8	11
Manchester ..	15	10	5
Newcastle ..	10	5	5
	144	65	79

The successful candidates, who have been registered as *Students R.I.B.A.*, are as follows, given in order of merit as placed by the Board of Examiners:—

N. W. Hadwen Kebroyd, Triangle, Yorks
F. J. Lenton, Stamford, Lincs
W. Smith, Lenton Sands, Nottingham
J. Hill, Heaton, Newcastle-upon-Tyne
T. H. Hughes, South Kensington, S.W.
A. D. Leroy, South Hackney, N.E.
L. E. Williams, Purley, Surrey
J. W. Paterson, Edinburgh
A. Winch, Leeds
C. R. Fowler, East Finchley, N.
G. E. Hedley, South Shields
B. Johnson, Mutley, Plymouth
R. V. Surgeon, Whalley Range, Manchester
R. Creed, jun., Gray's-inn, W.C.
P. Howard, Waterloo, Ashton-under-Lyne
W. Lawson, Gateshead-upon-Tyne
J. Brodie, London, W.
H. J. L. Barefoot, Balham S.W.
H. J. Chetwood, Waltham Abbey
H. O. W. Hill, Oughtrington, near Lymm, Cheshire
J. W. Kay, Kingsbarns, Fife
J. M. Clarke, Fulwood, Preston
W. H. Letheren, Fareham, Hants
G. E. Pearse, Shepherd's Bush, W.
F. R. Jelley, Swansea
S. G. W. Hunt, Brighton
R. T. Russell, Gray's-inn, W.C.
R. H. Dewhirst, Leeds
F. W. Nicholson, Anfield, Liverpool
T. P. Fish, Redland, Bristol
C. B. Hill, jun., Wombwell, near Barnsley
G. B. Owen, Hampstead
M. S. Rogers, C.-on-M., Manchester
H. Jones, Whalley Range, Manchester
N. A. Allen, Liverpool
V. S. Barnes, Stroud, Kent
W. S. Blount, Shepherd's Bush, W.
O. A. Bloxam, London, E.C.
C. W. Box, Lincoln's-inn, W.C.
A. W. G. Brown, Edinburgh
L. Brunati, Pinner, Middlesex
W. Carter, Sunderland
K. Dalgleish, London, E.C.
W. Dann, Gravesend
W. T. Garbutt, Bradford
E. H. Gibson, Harrogate
B. R. Hebblethwaite, Beckenham
G. M. Hedley, Cullercoats, Northumberland
R. M. Hilton, South Kensington, S.W.
C. O. Hooper, Earl's Court, S.W.
J. H. Horniman, Hastings
F. S. Hulbert, B.A.Cantab, London, S.W.
T. G. Jenner, Bath
B. Knowles, Bootle, Liverpool
W. J. Leahy, New Southgate, N.
W. L. B. Leech, Copdock, near Ipswich
A. M. Lushby, Fareham
K. Peters, East Putney, S.W.
B. W. Ridley, Nottingham
G. W. Ridley, Nottingham
H. J. Shepherd, Darnall, Sheffield
J. W. Stanley, C.-on-M., Manchester
C. A. L. Sutton, Nottingham
W. H. Thompson, Thornbarrow Mead, Windermere
F. P. Webster, Sheffield.

Exemptions from the Intermediate Examination.

The following candidates, who had attended the Four-year Course of the Architectural Association School of Architecture, were granted exemption from sitting for the Intermediate Examination, and have been registered as *Students R.I.B.A.*:—

M. S. R. Adams, Chiswick.
P. W. Pocock, jun., Egham, Surrey.
F. G. Troup, Ealing, W.

Final and Special.

The Final and Special Examinations, qualifying for candidature as *Associate R.I.B.A.*, were held in London from June 24 to July 2. Of the 132 candidates examined, 76 passed, and 56 were relegated to their studies. The successful candidates are as follows:—

P. T. Adams, London, W.C.
H. C. Anderson, Heywood, Lancs
W. C. Antcliffe, Fulham, S.W.
B. V. Bartholomew, Walthamstow, N.E.
W. Bell, Dundee, N.B.
A. Binning, Blackheath, S.E.
H. Boddington, jun., London, S.W.
A. H. Boss, London, N.E.
F. H. Brazier, Hale, Cheshire
C. Bristow, West Norwood, S.E.
W. Brough, Finsbury Park, N.
P. Caminesky, Maidenhead
H. Carnelley, Hampstead, N.W.
C. D. Carus-Wilson, Sevenoaks
W. D'Arcy Cathcart, Bayswater
G. S. Cockrill, Godleston
H. C. Constantine, London, W.C.
V. C. Cook, Wolverhampton
C. R. Corfield, Edgbaston, Birmingham
J. L. S. Dahl, South Hampstead, N.W.
W. F. Dickinson, London, S.W.
E. J. Dod, Liverpool
A. L. Edwards, Wimbledon, S.W.
A. H. Edwards, Leicester
J. S. Ferrier, Edinburgh
G. E. Fitzgerald, Bedford Park, W.
H. S. Fleming, Erith
C. A. Geen, Lewisham, S.E.
R. F. Gutteridge, Southampton
F. W. Hagell, Whitehall Park, N.
D. Harvey, Hull
A. G. Henderson, Glasgow
R. Hotz, Wandsworth Common, S.W.
J. W. Jarvis Harrow
J. M. Jenkinson, Sharrow, Sheffield
W. Kaula, Earl's Court, S.W.
H. Kenchington, London, W.C.
W. H. Ludlow, Clapham Common, S.W.
T. Y. Lusk, London, N.
A. J. C. McLean, Brighton
C. S. Madeley, Birmingham
J. T. Mair, Wellington, New Zealand

Digitized by Google

F. J. McC. Maxwell, Bedford Park, W.
W. L. Mellor, Manchester
C. B. Metcalf, Bradford, Yorks
G. A. Mitchell, Acton, W.
H. W. Mole, Newcastle-on-Tyne
E. E. Morgan, Crouch End, N.
H. S. Morris, London, S.W.
R. H. Nicholson, Sunderland
R. Orr, Longfleet, Poole, Dorset
E. S. Petch, Scarborough
H. M. Pett, Brighton
R. Pierce, London, W.
W. S. Purchon, Sheffield
S. H. Rainforth, Ravenscourt Park, W.
C. H. Rose, Wimbledon
H. A. Ross, Shepherd's Bush W.
H. S. Sawyer, Bromley
H. E. Seccombe, Weybridge
J. Seddon, Strand, W.C.
H. P. Shapland, London, N.
C. H. Simpson, Putney, S.W.
F. R. Smith, Acton, W.
D. W. Stewart, Tottenham
W. W. Tasker Jesmond, Newcastle-on-Tyne
A. Turnbull, Sunderland
H. Unwin, Wigan
G. Vey, jun., Chiswick, W.
H. Waller, London, W.C.
H. G. Warlow, Sheffield
J. D. D. Watt, Falkirk, N.B.
G. H. Williams Windsor
J. B. Wills, Highbury, N
G. C. Wingrove, Newcastle-upon-Tyne
J. G. Young, Alloa, N.B.

The following table shows the number of failures among the 56 relegated candidates in each division of the Final Examination:—

I. Design	44
II. Principles of Architecture	50
III. Building Materials	16
IV. Principles of Hygiene	22
V. Specifications	25
VI. Construction, Foundations, etc. ..	40
VII. Construction, Iron and Steel, etc...	28

THE CONCRETE INSTITUTE:
FIRST ANNIVERSARY.

THE Concrete Institute, which has now over 750 members, celebrated its first anniversary on Thursday, July 22, by a visit to the largest Portland cement works in Europe—*i.e.*, the Swanscombe branch of the works of the Associated Portland Cement Manufacturers, near Gravesend, better known as the J. B. White Brothers' branch. About 100 members of the Institute attended this visit, and were met at Cannon-street station at 10.30 a.m. by the Chairman of the Associated Portland Cement Manufacturers (Mr. F. A. White) and other directors, and were taken in saloon carriages to Northfleet, where they were entertained to luncheon at the Factory Club. They were then driven by special trams to the Swanscombe Works, which contain the largest installation of rotary kilns in this hemisphere. The output by this plant alone exceeds 600,000 tons per annum.

The visitors went over the works in eight groups, each group being under a technical guide and a director of the company, and so a most thorough and instructive inspection was insured. Mr. White, in welcoming the party, dwelt on the rapid development of the Concrete Institute into one of the most important institutions. Mr. Sachs, in his reply, commented on the broad-minded policy of the company in including in their invitation such members of the Institute as happen to be directors or chemists to competing cement works. This policy, he pointed out, made for a greater efficiency in the whole of the nation's Portland cement output, a factor of importance in such a great industry as that of the Portland cement trade. Others who spoke on the occasion were Mr. Bamber, Mr. Colson, and Mr. Munro.

THE ARCHITECTS' TECHNICAL BUREAU.
(COMMUNICATED.)

"THE first of the Bureau Illustrated Records is now being issued to the architect subscribers, the subject being the New Offices of the Government of Victoria in the Strand, W.C.

The record consists of an illustrated description of the building, extending to some twenty-seven pages, with interior and exterior photographic views and plan, and containing full particulars of all the materials, fittings, etc., which have been used to its construction, and the names and addresses of those firms supplying same.

It is proposed to issue a series of records of important buildings in this manner, and doubtless these will be found of great interest and usefulness to an architect when carrying out works of similar nature, the object being to assist architects in keeping *au courant* with modern construction, materials, fittings, etc.

These records are supplied free to the architect subscribers, or at 2s. each to non-subscribers."

THE ARCHITECTURAL ASSOCIATION:
THIRD SUMMER VISIT, JULY 24—ARDENRUN PLACE, NEAR GODSTONE, SURREY.

A FAIR attendance of members braved the rigours of this July and the tedium of the slow railway journey to Lingfield in order to inspect this house by Mr. Ernest Newton. Ardenrun Place was reached by a walk of about two miles across the wet fields, in the course of which Lingfield Church, with its series of Cobham tombs and stalls with misereres was briefly visited. The fine dower-house adjoining the churchyard could only be glanced at in passing.

A drawing of Mr. Newton's original design appeared in the *Builder* of May 12, 1906, but the house has been somewhat altered in execution, both in plan and detail. The main building is on an H plan, the entrance front being converted to an E by a central projecting porch. This front, with its forecourt piers and railings, is a very pleasing composition, perhaps a trifle inclined to be crowded in effect. Externally the walling is faced with purple-grey "Sussex clamps" from Selsea, with arches and jambs of Wrotham reds, and Portland stone dressings. A white painted modillion cornice and beautifully toned roof of Wrotham tiles with lead hips, broken by pedimented dormers and surmounted by a balustraded flat and cupola, complete the whole. The stone carving of the entrance front is finely executed by Mr. Aumonier, and there is also some very good ironwork by Mr. Shirley and charming leadwork by Mr. Bankart—the broad flat rainwater pipes are specially satisfactory. A dignified lay-out has been designed by Mr. Newton, and this has been partially executed with very good results, though the *tout ensemble* will be greatly improved when the transition from the strict formality of the garden to the rough poverty of the surrounding land is less abrupt.

Some noteworthy internal effects are achieved, the most striking being in the outer or staircase hall, which is approached directly from the entrance vestibule. To the right on entering is the staircase, rising through the central arch of the three arcaded bays leading to the inner hall. The staircase is of the splendid type of Thorpe Hall, Farnham Castle, and the well-known example at Guildford, the pierced balustrade panels having been well carved in limewood by Mr. Aumonier. All the remaining woodwork is of Italian walnut, the beautifully figured panels veneered on oak. The paving is of white striated marble squares, with borders of Irish green. Beyond the hall, on the entrance front, is the billiard-room, the three principal apartments being arranged *en suite* on the garden front. The inner hall occupies the centre of this front, with the drawing-room and dining-room respectively to right and left. The decoration of the former two is not the work of Mr. Newton, a French firm of decorators being responsible. The hall panelling appears to have been designed in carton pierre, but carried out in oak, and the contrast which it presents with the robust work outside is most marked. In the dining-room Mr. Newton, in turn, seems to have aimed at a French treatment, notwithstanding a boldly-modelled fruit and flower ceiling by the Bromsgrove Guild. The colour scheme is one of very light French grey panels with white mouldings and gilded enrichments.

All the principal rooms have auxiliary heating by radiators fixed behind metal grilles below the window-boards, and in some cases the necessary raising of the hearths to allow the circulating pipes to pass beneath has been turned to good account in the design of simple bedroom fireplaces very satisfactorily treated with white tile surrounds and white marble hearth slabs and risers.

The house has been built by Messrs. Trollope & Colls, and Mr. Spicer, who conducted the party over the premises, had acted as clerk of works.

SOCIETY OF ARCHITECTS:
SKETCHING PARTY TO GATTON AND MERSTHAM.

THE visit to Gatton and Merstham on Saturday, July 17, was not quite so successful as the previous sketching visits in point of numbers, owing to the fact that many of the most ardent sketchers are away holiday-making. On arriving at Merstham the party set out for a delightful walk across the fields to Gatton Park, the seat of Sir Jeremiah Coleman. Here the party viewed the curious little Doric structure in the grounds which was at one time used as the Town Hall. This is the smallest Town Hall in England. The residence was next visited. This is built in a severe classic style, with an entrance portico with a Corinthian order. The most striking feature of the house is the hall, which is built and paved in a variety of costly marbles. The church, which adjoins the house, is but a small structure, and with the beautiful trees and shrubs which surround it forms an exquisite subject for a colour sketch. But the interior is full of interest, being adorned with carvings of wonderful workmanship. Many sketches were made, but the lovely views and beautiful flowers of the gardens which surround the house proved irresistibly attractive to the majority of the party.

A saunter through Merstham village to admire the ancient houses and church concluded a really well-spent afternoon.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Tuesday morning.

The "Southfield," Wandsworth.—One of the brick structures on this site was ordered to be adapted as a housewifery centre for sixteen girls, and a portion of another brick structure adapted as handicraft centre for twenty boys, at a cost of about 237*l.*

St. Giles's Non-provided School, Holborn.—The Managers intimated their intention of carrying out improvements, at a cost of about 600*l.*

Leather Tanning School, Bermondsey.—The Worshipful Company of Leathersellers intimated that they were erecting a complete leather technical college on a site in Bermondsey, and that they proposed to transfer to the new building the old school which has been carried on at the Herold's Institute.

Appointments.—Mr. W. Taylor, as art master, 150*l.* a year, and Mr. T. A. Gilbert, 120*l.*, as woodwork instructor, at the Beaufoy Institute; Mr. C. H. Hancock, 100*l.*, as teacher of carpentry and joinery, at the Brixton School of Building.

Purchase of Sites.—Settlements as follows were announced:—9, Camden-street, St. Pancras, G. Norris, yearly tenancy and trade, 100*l.*; 5, Camden-street, leasehold, Mrs. E. Reed, 1,058*l.* 10s.; 13, Camden-street, Miss F. A. Buffery, leasehold and trade, 1,108*l.* 10s.; 131-139, Peckham-road, Mr. W. G. Reed, 2,574*l.*

New School at Beckenham.—The Beckenham education authority reported its intention of erecting an elementary school for 500 at Witham-street.

Woolwich-road Improvement.—In connexion with the widening of Woolwich-road, 488*l.* was voted for setting back the playground wall of the Lombard School.

New Secondary School at Brockley.—It was decided to provide accommodation for 450 on a site already in possession of the Council at Hilly-fields. The Committee said they had had preliminary plans, and the estimated cost came to 20,670*l.*

SUNDAY-SCHOOL, STOKE.—A new Sunday-school is being built in Frederick-street, Stoke. The plans have been prepared by Mr. E. G. Wildin, of Stoke, and the contractor is Mr. James Boston, of Stoke. The amount of the contract is about 1,100*l.*

Digitized by Google

JULY 31, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, JULY 31.

Manchester Society of Architects (Incorporated).—Visit to Stokesay and Ludlow, arranged for Bank Holiday week-end. Leave on Saturday, July 31, return Monday or Tuesday.

WEDNESDAY, AUGUST 4.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

SATURDAY, AUGUST 7.

The Institution of Municipal Engineers.—The first annual general meeting of the Institution, to be held at the Town Hall, Durham. (1) Presentation of annual report of the Council; (2) discussion of paper, "The Design and Requirements of Electric Power Works," by Mr. Horace Boot, M.I.E.E., A.M.I.Mech.E., which was presented at the general meeting held at Olympia on April 24 last; (3) paper, "Municipal History and Works of a Small City," by the President of the Institution, followed by discussion; (4) paper, "The Durham Main Sewerage Works," by Mr. Harry W. Taylor, Assoc.M.Inst.C.E.; (5) visit to Durham Castle and Cathedral; (6) the result of the ballot for election of the Council for the year 1909-10 will be announced.

Illustrations.

MUSEUM OF ARCHÆOLOGY AND ETHNOLOGY, CAMBRIDGE.

THE new museum for the Archæological and Ethnological collections of the University of Cambridge, now about to be built from the design of Mr. T. G. Jackson, R.A., will form the continuation of the Sedgwick Geological Museum and the Law Library and School, built by him a few years ago. The new building will complete the frontage to Pembroke-street, and run back along Tennis Court-road to inclose the inner quadrangle.

The first part of the new building will be begun at once with the aid of a large donation from the Foster family, and the remainder of it is hoped will follow without interruption.

KING'S COLLEGE HOSPITAL, DENMARK-HILL.

THE drawing from which our reproduction is taken was prepared for, and exhibited at, the ceremony of the laying of the foundation-stone by the King, who was accompanied by the Queen last week.

This forms part of the pilaster at the north-east corner of the portico of the administration and nursing block. The work on this block is being rapidly proceeded with, and forms part of a contract ending at the level of the ground floor; the work to the superstructure will immediately follow.

The great out-patient department, also comprising the casualty block and bathing establishment, is in an advanced state and is already roofed in. The architect is Mr. William A. Pite, of London.

HIGHER ELEMENTARY SCHOOL, LONG EATON.

THIS school is in course of erection at Long Eaton for the Derbyshire Education Committee, and provides accommodation for 300 students and pupil teachers. Five classrooms for students and three for pupil teachers are planned on the ground floor in wings radiating from the central hall, which is 80 ft. long by 33 ft. wide and 30 ft. high. The general arrangement of the rooms can be seen from the sheet of plans. A flat roof is planned over the art-room so that work may be carried on in the open air. The general plan has been so arranged as to enable all the rooms to have the maximum amount of sunshine, and cross-window ventilation is provided in all cases. To provide for future extension the assistant masters' and mistresses' rooms have been planned so that they can be readily converted into classrooms. Concrete floors are also constructed over the two end classrooms in each wing and over the cookery and manual instruction rooms, so as to enable extension in this direction without unnecessarily interfering with the work of the students.

Owing to the water-logged state of the site considerable expense has been entailed in the foundations, which will make the cost per head more than a school built under ordinary conditions. The walls are constructed with brick and stone, and the exterior walls are faced with Loughborough red and purple sand bricks. The stone for dressings, etc., is from the Tansley Moor Quarry, Matlock. The floors will be constructed with reinforced concrete and hollow tiles, and finished with oak blocks in the main hall and corridor, maple blocks in all other rooms except corridors, cloak-rooms, and workshop, where asphalt floors will be laid. All the rooms will be panelled to a height of 7 ft. with square-framed whitewood panelling stained and flat varnished, with the exception of the workshop, cookery and cloak rooms, laboratory and conveniences, the walls of which will be lined with salt glazed brickwork. All the windows to classrooms will have hopper lights to open in lower parts and swing casements above, so as to obtain as much fresh air as possible. The roofs will be covered with green Westmorland slates, and the building will be heated by the low pressure hot-water system, with ventilating radiators in all cases. Air flues are provided in the chimney breasts with grates at the floor and ceiling levels for ventilation purposes in each classroom. The total cost of the building will be about 14,000*l.*

The buildings have been planned and designed by Mr. G. H. Widdows, Architect to the County Education Board.

UPPER CHURCH OF S. FRANCESCO, ASSISI.

THIS is a view in the upper church of the famous three-storied church of S. Francesco at Assisi. According to Vasari it was built from the designs of a German architect, Jacopo Tedesco (an Italianising of his name) about 1230.

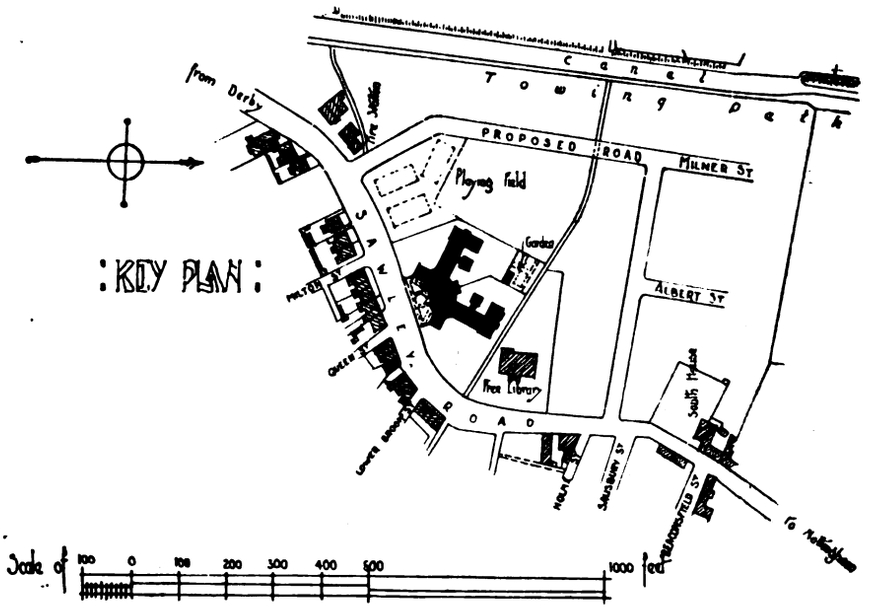
The church has a nave, apse, and transept, but no aisles. The vault and walls were decorated by Cimabue and his pupils. Beneath the windows are painted subjects from the life of St. Francis. The apse contains some fine stalls executed in 1501 from the designs of Andrea Sansovino.

The illustration is from a drawing by Mr. A. E. Martin, a student of the Royal College of Art.

THE RIVER: A SYMBOLICAL SKETCH.

THIS is a design made by Mr. T. C. Derrick, a student of the Royal College of Art, representing the course of a river from the uplands and past the country villages till it runs into the sea at a seaport town. The drawing has both poetic suggestion and decorative effect.

NEW CONCERT-HALL, ADELPHI, W.C.—The London County Council have approved the plans of a new concert-hall to be opened in John-street and Durham House-street, Adelphi. The building, which is to be adapted, was originally a portion of the old Coutts's Bank, and was connected with the Strand premises both by bridge and tunnel. Messrs. Hayward & Maynard, architects, of John-street, have prepared the plans. The entrance will be in John-street, and provision is made for a vestibule, foyer, refreshment-rooms, and performers' rooms, while there will be an emergency exit in Durham House-street. The hall, which will hold about 400 people, will be 54 ft. long and 44 ft. wide, and the platform will be 27 ft. by 25 ft. The total area of the property is 140 ft. by 84 ft., and the space that is not required for the concert-hall will be converted into flats.



Long Eaton Schools: Plan of Site.

Digitized by Google

THE LONDON COUNTY COUNCIL.

THE last weekly meeting of the London County Council prior to the summer recess was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Lambeth Borough Council 6,876*l.* for paving works, and Woolwich Borough Council 3,160*l.* for electric lighting mains and 1,117*l.* for sewer works. Sanction was also given to the borrowing by Lambeth Borough Council of 8,558*l.* for paving works.

Tramways and Improvements.—The Highways Committee recommended as follows:—

That authority be sought in the session of Parliament of 1910 to enable the Council to construct the undermentioned new tramways:—

(i.) Marble Arch to Harrow-road *viâ* Edgware-road.

(ii.) Harrow-road to Cricklewood *viâ* Edgware-road, Maida-vale, High-road, Kilburn, and Shoot-up-hill.

(iii.) Chalk Farm to Child's-hill *viâ* Chalk Farm-road, Adelaide-road, Upper Avenue-road, and Finchley-road.

(iv.) Seven Sisters-road to Hanley-road *viâ* Fonthill-road to Tollington-park (double line), and single loop line *viâ* Evershot-road, Hanley-road, Regina-road, and Tollington-park.

(v.) Herne-hill station to Brixton-hill *viâ* Dulwich-road and Water-lane.

(vi.) Putney Bridge to Wandsworth *viâ* High-street, Putney, Putney Bridge-road, and High-street, Wandsworth, to join the tramways in Garratt-lane.

(vii.) Wood-lane to Harrow-road *viâ* proposed new road between Wood-lane and Latimer-road, Silchester-road, Lancaster-road (double line), and a single line in Lancaster-road, St. Luke's-road, Cornwall-road, and Ledbury-road, and a single line in Ladbroke-grove, Cornwall-road, Powis-terrace, and Talbot-road, and double line in part of Talbot-road, and in Westbourne Park-road and Porchester-road, and on Lord Hill's Bridge.

(viii.) Extension of existing tramways in Tooley-street to near London Bridge.

(ix.) Single diversion line along Archer-street and Bond-street, Vauxhall.

(x.) Additional double line of tramways on Dog Kennell-hill, Camberwell.

(xi.) Diversion of a portion of one of the lines in Green-lanes.

(*b*) That the Highways Committee be authorised to negotiate with the Middlesex County Council with the view of settling, subject to approval by the Council, the terms of an agreement between the Council and the Middlesex County Council for the construction and working of the proposed tramways from Bridge-terrace to Cricklewood.

Mr. Shirley Benn, the Chairman of the Highways Committee, in moving the recommendations, drew attention to the fact that every mile of double tramway track paved with wood costs about 7,000*l.* on tramways account, and about 10 per cent. of that amount for annual depreciation and upkeep.

After a long discussion on details, the recommendations of the Committee were adopted.

The Improvements Committee recommended, and it was agreed:—

That, subject to the Paddington and Hampstead Metropolitan Borough Councils and the Willesden Urban District Council consenting to the construction of tramways from Edgware-road at Harrow-road to Cricklewood, and subject to the Paddington and Hampstead Metropolitan Borough Councils agreeing to contribute between them one-third of the Council's expenditure in respect of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Edgware-road, High-road, Kilburn, and Shoot-up-hill.

That, subject to the St. Pancras and Hampstead Metropolitan Borough Councils consenting to the construction of tramways from Chalk Farm-road to Child's-hill, and subject to the Hampstead Metropolitan Borough Council agreeing to contribute one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Upper Avenue-road and Adelaide-road.

That, subject to the Islington Metropolitan Borough Council consenting to the construction of tramways from Seven Sisters-road to Hanley-road, and agreeing to contribute one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Seven Sisters-road, Fonthill-road, Tollington-park, Regina-road, Evershot-road, and Hanley-road.

That, subject to the Lambeth Metropolitan Borough Council consenting to the construction of tramways from Herne-hill station to Brixton-road, and agreeing to contribute one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Dulwich-road and Water lane.

That, subject to the Wandsworth Metropolitan Borough Council consenting to the construction of tramways from Putney Bridge to High-street, Wandsworth, and agreeing to contribute one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Putney Bridge-road and High-street, Wandsworth.

That, subject to the Hammersmith and Paddington Metropolitan Borough Councils and the Kensington Royal Borough Council consenting to the construction of tramways from Wood-lane to Harrow-road, and agreeing to contribute between them one-third of the net cost of the necessary street widenings other than the construction of the new road from Wood-lane, Latimer-road, application be made to Parliament in the session of 1910 for authority to widen Wood-lane, Silchester-road, Walmer-road, Lancaster-road, Ladbroke-grove, Cornwall-road, St. Luke's-road, Powis-terrace, Ledbury-road, Talbot-road, and Porchester-road.

That, subject to the Lambeth Metropolitan Borough Council consenting to the construction of a single line of tramways from South Lambeth-road to near Vauxhall station, application be made to Parliament in the session of 1910 for authority to widen Archer-street at its junctions with South Lambeth-road and Bond-street.

That the supplemental estimate of expenditure on capital account of 81,500*l.*, submitted by the Finance Committee in respect of the Westminster improvement, authorised by the London County Council (Improvements) Act, 1900, be approved.

That the estimate of expenditure on capital account of 16,500*l.*, submitted by the Finance Committee in respect of the widening of High-gate-hill, be approved.

Housing Accommodation Provided.—It was stated that the dwellings completed and opened during the year contain accommodation for 2,274 persons in four tenements of one room, forty-nine tenements of two rooms, ninety-five tenements of three rooms, thirty-six tenements of three rooms and boxroom, thirty-six tenements of four rooms, and ninety-six tenements of five rooms, in addition to seventeen shops. Accommodation for 46,310 persons was provided by the Council up to March 31, 1909, the accommodation consisting of 1,845 cubicles in Bruce House, Carrington House, and Parker-street House, 1,768 cottages, and 6,428 tenements in block dwellings.

Trade Union Rates and Contracts.—The Education Committee recommended, for the erection of a new school at Manor-lane, Lewisham, that the tender, 16,235*l.*, of Messrs. F. & E. Davey, Southend, be accepted. (For full list see our last issue, p. 114.)

Mr. Dew proposed the addition of the following words:—"Provided that, in view of the great distress caused in London by the large number of unemployed in the building trade, and as the Amalgamated Society of Carpenters and Joiners allege that F. & E. Davey, Ltd., do not pay the trade union rate for carpenters and joiners at Southend, the joiners' work be prepared in the London district."

Mr. Edward White sympathised with Mr Dew, but said the firm had no workshops in London, and the amendment could not be enforced.

Mr. Jackson pointed out that in the case of the tenders, this firm had been requested to tender. As the work should proceed without delay, he hoped Mr. Dew would now content himself with having made his protest.

The Hon. W. R. Peel said he would have supported the acceptance of the next tender but for the fact that there were difficulties in the way.

The amendment was carried, the voting being fifty-one for and thirty-three against.

It was then suggested that the matter should be referred back, with instructions to the Committee to accept the next tender, that of Messrs. Thomas & Edge, 16,709*l.*

Mr. E. Collins said the Council was playing ducks and drakes with the ratepayers' money just to pander for a few votes at the next election.

Mr. Rowe said Messrs. Davey had done good work for the Council, and they should have the opportunity of doing the work on the conditions stipulated in Mr. Dew's resolution.

Eventually the matter was referred back to the Committee for further consideration.

Southern Low-level Sewer.—The Main Drainage Committee recommended the acceptance of the tender of 473,416*l.* 13s. 6d. for the construction of the southern low-level sewer from Deptford to Battersea. (For full list of tenders, see our last issue, p. 115.) The Committee reported that the next tender, 473,515*l.* 10s. 3d., by Mr. Nowell, was lower, if certain clerical errors were allowed, but Mr. Nowell would not agree to any reduction.

Mr. Eason, Chairman of the Committee, asked for the indulgence of the Council to draw attention to an existing situation in connexion with the tenders. The firm whose tender was recommended for acceptance had that afternoon written to withdraw the tender, the explanation being that they, owing to the increase in the price of cast-iron, could not place their contracts at the price anticipated. Under these circumstances he suggested that fresh tenders should be invited.

Mr. Ward said the wisest alternative under the existing circumstances would be to construct the sewer by a Works Department. In the past the Works Department had done successful work and made a profit of 10 per cent. to 20 per cent. Now the contractors were withdrawing their tenders, it was the time to let the Works Department be revived. Contractors had commenced to treat the Council as they did in the old days, and hence the Council should once more try the direct employment of labour. They still had their works manager, and some of the staff remained. The Council could do the work, and probably show a saving on the Engineer's estimate, which was 480,000*l.*

Mr. Edward White asked if the Chief Engineer still adhered to his estimate now that there had been a great advance in the price of iron. He had had that information from the officials. The price of iron had gone up. ("2s. 6d. a ton!") The market was unsteady. He objected to the Committee being allowed, *carte blanche*, to do as they liked. It was unwise to proceed too hastily, although he agreed that it would be better if the work could be put in hand at once. It would be well to get fresh tenders, and at the same time to ascertain what the cost of the work would be by direct labour.

Mr. Johnson proposed that the matter should be referred back to Committee to carry out the work by direct employment at a cost not exceeding 480,000*l.*

Mr. Eason stated that it would not be fair to ask the Engineer to carry out the work at his estimate in view of the difference in the iron market. It would be better to get fresh tenders, and a new estimate from the Engineer. Then the Committee could favourably consider any proposal by the Engineer.

Sir John McDougall said he had that day had a conversation with the Chief Engineer, who made no suggestion that he wished to revise his estimate. There had been too much of this revision of tenders by contractors lately, and it seemed as if the Council were going to be beaten by the contractors. It had been suggested that the third tender should be accepted, but that would be to give away 19,000*l.* of the ratepayers' money. If the Council gave way to the contractors, it would be disastrous.

Mr. Sanders said it would be playing into the hands of the contractors to invite fresh tenders now that the prices were known, together with the Engineer's estimate. The number of firms competing for these works was gradually getting smaller. The people of London would recognise the meaning, for it was reminiscent of the rotten old Vestry days.

Mr. Jessop said it would be possible, unless the Council now did the work by direct labour, to have firms agreeing together and scooping a nice sum.

Mr. Dove repudiated the possibility of contractors adopting the suggestion made by Mr. Jessop. In this case the two tenders were very low, and the firms found they had made a mistake. Well, the Council had before had tenders withdrawn. Because a tender had been withdrawn, it was no reason why the Works Department should again be bolstered up. It was absurd to suggest that contractors met together to arrange terms and divide the spoils.

Captain Hemphill said if this thing went on the Council would be putting the contractors in a position to plunder the ratepayers.

Mr. Gordon said it was absurd for the contractor to excuse himself on the ground that the price of iron had gone up. All big contractors got prices for iron fixed up, and no iron workers would withdraw their terms given to the contractors. In consequence of the abolition of the Works Department, contractors were able to raise their prices, and that was the experience of all corporations.

Sir John Benn said if they took this "lying down" they might put up a notice that "Contractors may have their own way with the Council." Sewer work was essentially work which should be done with safety by direct employment.

By fifty-one against thirty-one, the matter was referred back to Committee.

Schools, etc.—It was agreed:—

That a school for 140 physically defective children and a combined school for twenty-four blind and eighty deaf children be provided on the Tollit-street site (Mile End).

Digitized by Google

That the estimate of expenditure on capital account of 100*l.*, submitted by the Finance Committee in respect of the equipment of the County Secondary school, Putney, be approved.

That the supplemental estimate of expenditure on capital account of 160*l.*, submitted by the Finance Committee in respect of taking out and lithographing quantities in connexion with the erection on the "Furzedown" site (Wandsworth) of a training college for 264 women, and a hostel for forty-eight students, and the adaptation of the existing house on the site as a hostel for fifty-two students, be approved.

That the estimate of expenditure on capital account of 575*l.*, submitted by the Finance Committee in respect of the installation of electric lighting, bells, and telephones in connexion with the extension of the London County Council Paddington Technical Institute (Paddington, N.), be approved.

That the estimate of expenditure on capital account of 400*l.*, submitted by the Finance Committee in respect of the supply of the necessary equipment in connexion with the enlargement of the London County Council Paddington Technical Institute.

That the special estimate of expenditure on maintenance account of 250*l.*, submitted by the Finance Committee in respect of the execution of alterations and repairs and the maintenance of the premises, No. 498, Edgware-road, Paddington, for divisional offices in the education service, be approved.

That the special estimate of expenditure on maintenance account of 266*l.*, submitted by the Finance Committee, in respect of the supply of additional furniture to the London County Council Fulham Training College (Fulham), be approved.

That the special estimate of expenditure on maintenance account of 150*l.*, submitted by the Finance Committee in respect of the adaptation and hire of the premises at Smith-street (Kennington), be approved.

That, in cases where other suitable accommodation is not available, the use of school halls in London County Council schools as dining centres in connexion with the feeding of necessitous children, be approved.

That, subject to the adaptation of the room to be used for handicraft purposes at the Roehampton Parochial non-provided school (Wandsworth) being carried out to the satisfaction of the Architect (Education) at the cost of the Managers, such room be equipped and maintained for the purposes of instruction in handicraft; and that expenditure not exceeding 85*l.* be sanctioned in connexion therewith.

That the special estimate of expenditure on maintenance account of 300*l.* for the financial year 1909-10, submitted by the Finance Committee in respect of the adaptation of the premises at Avery-hill, used in connexion with the botany organisation, be approved.

That the estimates of expenditure on capital account, amounting to 28,684*l.*, and the estimates of expenditure on maintenance account amounting to 10,123*l.*, for the financial year, 1910-11, under standing order No. 359, submitted by the Finance Committee, in respect of the erection of a school for physically-defective children on the Venetian-road site (Norwood), and the enlargement of the Amberley-road and Essendine-road schools (Paddington, N.), be approved.

That the estimate of expenditure on capital account of 15,500*l.*, submitted by the Finance Committee in respect of the acquisition of property in Bolt-court, required in connexion with the re-erection of the School of Photo-Engraving and Lithography (City of London), be approved.

That the estimates of expenditure on capital account, amounting to 24,751*l.*, and the estimates of expenditure on maintenance account amounting to 2,835*l.*, for the financial year, 1910-11, under standing order No. 359, submitted by the Finance Committee in respect of the erection of a higher school on the St. Mark's-road site (Kensington, N.), and the enlargement of the Canonbury-road (Islington, E.) and Maryon-park (Woolwich) schools, be approved.

That the solicitor do prepare, and obtain execution of, the necessary contract for the work in each of the following cases; and that the seal of the Council be affixed thereto, when ready:—Bethnal Green, N.E.—Morpeth-street — Erection of higher school: Brixton—The "Reay"—Erection of higher school; Islington, E.—Canonbury-road—Enlargement; Kensington, N.—St Mark's-road—Erection of higher school; Norwood—Venetian-road—Erection of special school; Paddington, N.—Amberley-road and Essendine-road—Enlargement; St. George-in-the-East — Berner-street — Centres; Woolwich—The Maryon-park—Enlargement.

Award of Art Scholarships. — It was agreed:—

(*a*) That the art scholarships awarded to candidates who intend to become teachers of art be tenable at the Royal College of Art only, and be awarded subject to the condition that the candidate passes the entrance examination of that college.

(*b*) That forty of the evening art exhibitions, to be awarded annually by the Council, be reserved in the first instance for students who are under 18 years of age on July 31 in the year of competition; and that if there are less than forty suitable candidates under 18 years of age, the exhibitions so reserved be available for award to candidates not under 18.

(*c*) That the scholarship regulations, so far as they relate to candidates for art scholarships being required to submit in respect of bookbinding one large work or not more than three small works, be not further acted upon.

(*d*) That as from August 1, 1909, and until further order, candidates for art scholarships be required to submit in respect of bookbinding at least three books, one in a half-binding library style, one in a half-binding ordinary style, and one in full binding, plainly finished.

Manor Asylum.—It was agreed that the estimate of expenditure on capital account of 1,247*l.*, submitted by the Finance Committee in respect of the enlargement of the laundry at the Manor Asylum, be approved.

Woolwich Fire-station: Enlargement and Alteration.—It was agreed that tenders be invited from selected firms for the enlargement and alteration of the Woolwich fire-station.

Bow Fire-station.—The Fire Brigade Committee recommended, and it was agreed:—

That the supplemental estimate of expenditure on capital account of 12,500*l.*, submitted by the Finance Committee in respect of the erection of a new fire-station in Parnell-road, Bow, be approved, and that tenders be invited from selected firms.

Clerkenwell Fire-station: Enlargement and Alteration.—They also recommended, and it was agreed:—

That the estimate of expenditure on capital account of 1,900*l.*, submitted by the Finance Committee in respect of the acquisition of the premises No. 42, Rosebery-avenue, Clerkenwell, with a view to the enlargement of the adjoining fire-station in that thoroughfare, and in respect of the preliminary expenses in connexion with the enlargement and alteration of the station, be approved.

The Education Architect.—The General Purposes Committee reported having considered the arrangements to be made on the retirement of Mr. T. J. Bailey, the Architect of the Education Department, for the future direction of the execution of architectural works required for the education service. The Committee, however, would not be prepared to submit their proposals in time for them to be carried out by October 31, the period fixed for the Architect's retirement, and therefore the Committee suggested that Mr. Bailey's services should be retained until December 31, 1909.

The Rev. Stewart Headlam moved that the services of the Architect should be retained till October 31, 1910, so as to enable the work to progress and be completed.

Mr. Norman said there could never be any finality, for the time would never come when all works would be completed and no new schemes were needed. The Council could make up its mind by December and decide for ever what was to be done in the matter. The matter could not be periodically postponed.

Mr. Shepheard urged that the Education Department ought not to be deprived of the services of Mr. Bailey, who had a deal of work to finish. There were nine old schools yet to be remodelled.

Mr. W. Thompson said there was no necessity to retain Mr. Bailey, although there was an enormous amount of work to be done. It ought not to be difficult to go from one *régime* to another.

Mr. Dew said the uncertainty of Mr. Bailey's tenure was detrimental, inasmuch as the Architect's position in controlling the staff was weakened.

The amendment was defeated; the recommendation of the Committee to retain the Architect's services to the end of the year being adopted.

Crosby Hall.—It was announced that sufficient funds had been received to enable the re-erection of the fabric of Crosby Hall on the site in Chelsea.

Minor Improvements.—It was agreed:—

That the estimate of expenditure on capital account of 335*l.*, submitted by the Finance Committee in respect of the widening of Holloway-road near Highbury-corner, be approved.

That the supplemental estimate of expenditure on capital account of 400*l.*, submitted by the Finance Committee in respect of the additional widening of Highgate-road, be approved.

That the estimate of expenditure on capital account of 1,334*l.*, submitted by the Finance Committee in respect of the widening of High-street, Wandsworth, near St. Ann's-hill, be approved.

That the supplemental estimate of expenditure on capital account of 1,000*l.*, submitted by the Finance Committee in respect of the additional widening of Lavender-hill, be approved.

Holborn to Strand.—It was agreed that, subject to certain conditions made by the Improvements Committee on July 21, 1909, the drawings of the buildings proposed to be erected by Messrs. L. & C. Hardtmuth on a site at the junction of Kingsway and Kemble-street, be approved.

After transacting other business, the Council adjourned at a late hour.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

City of London.—An oriel window at Nos. 6 and 8, Ludgate-hill, City (Mr. R. Plumbe for the Chairman and Directors of the Temperance Permanent Building Society).—Consent.

Finsbury, Central.—A projecting clock at No. 24, Clerkenwell-road, Finsbury (Mr. E. G. Allen).—Consent.

Fulham.—Re-erection of Walham Green railway-station, Fulham-road, Fulham (the Metropolitan District Railway Company).—Consent.

Islington, West.—That the application of Mr. H. C. Braun for an extension of the periods within which the erection of buildings upon the site of Nos. 236 and 236, Pentonville-road, Islington, was required to be commenced and completed, be granted.—Consent.

Kensington, North.—An iron and glass covered way in front of No. 3, Dawson-place, Kensington (Messrs. E. Coules & Sons for Mr. J. P. Chadwick).—Consent.

Lewisham.—A projecting clock in front of No. 9, Tranquil-vale, Blackheath (Mr. H. A. Trigg).—Consent.

Lewisham.—A building on the south-eastern side of High-street, Lewisham, to abut upon the north-eastern side of Court Hill-road (Mr. A. C. Thomas for Temperance Billiard Halls, Ltd.).—Consent.

Lewisham.—A building on the western side of Burnt Ash-hill, Lewisham, southward of the bridge carrying the South-Eastern and Chatham Railway (Mr. A. Burr).—Consent.

Lewisham.—A building upon a site abutting upon Loampit-vale, Thurston-road, and Horton-street, Lewisham (Mr. A. Burr).—Consent.

Marylebone, East.—A building upon the site of Nos. 220 and 222, Great Portland-street, St. Marylebone (Mr. C. W. Ferrier).—Consent.

Marylebone, East.—A building with a one-story shop in front upon the site of the Colloseum public-house on the eastern side of Great Portland-street, St. Marylebone, southward of Carburton-street (Messrs. Boehmer & Gibbs for Messrs. R. Mickel & Co.).—Consent.

St. George, Hanover-square.—A wood and glass enclosure to the portico in front of No. 8, Grosvenor-square, St. George, Hanover-square (Mr. R. G. Hammond for Mrs. H. Coventry).—Consent.

Strand.—A new shop front at Nos. 84 to 86, Regent-street, W. (Messrs. E. Pollard & Co. for Hope Brothers, Ltd.).—Consent.

Strand.—Retention of an oriel window in front of No. 20, Brewer-street, Strand (Mr. J. Belcher).—Consent.

Wandsworth.—Bay windows, porches, wood cornices, and sham half-timber work to two semi-detached houses on the southern side of Voss-court, Streatham Common (Messrs. W. Mason & Sons).—Consent.

Kensington, South.—A porch and bay window in front of No. 67, Victoria-road, Kensington (Messrs. C. Saunders & Son for Mr. J. H. Lindsay).—Refused.

Width of Way.

City of London.—Rebuilding of Mark-lane Station, City, at less than the prescribed distance from the centre of Seething-lane (Mr. G. Sherrin for the Metropolitan and District Railway Companies).—Consent.

Islington, East.—A water-closet and lavatory addition at the rear of No. 56, Highbury-park, Islington, at less than the prescribed distance from the centre of the roadway of Kelross-road (Messrs. F. Boreham & Son for Mr. J. J. Griffiths).—Consent.

Woolwich.—Building upon the site of No. 12, The Avenue, Sandy-hill, Plumstead (Mr. A. Howard for Mrs. R. E. Griffiths).—Consent.

Lines of Frontage and Space at Rear.

St. Pancras, South.—Blocks of buildings to abut upon Hastings-street, Thanet-street, and Sandwich-street, St. Pancras, with projections to abut upon Thanet-street and Sandwich-street (Mr. A. Davis).—Consent.

Digitized by Google

Width of Way and Frontage.

Newington, West.—An addition to the electric lighting station on the northern side of Penrose-street, Newington (Mr. A. Harrison for the Southwark Metropolitan Borough Council).—Consent.

Southwark, West.—That the application of Messrs. C. Yates & Co. for an extension of the periods within which the erection of a building upon a site abutting upon Dantzic-street, Earl-street, and Providence-place, Southwark, was required to be commenced and completed, be granted.—Consent.

Strand.†—The retention of a showcase at No. 224, Regent-street, at less than the prescribed distance from the centre of the roadway of Argyle-place (Messrs. T. & J. Perry).—Consent.

Strand.†—Hoods and balconies at a building upon the site of No. 26, Gerrard-street, and 30, Wardour-street, Westminster (Mr. E. J. W. Hider).—Consent.

Chelsea.—A two-story workshop building at the rear of No. 64, Sydney-street, Chelsea, to abut upon the western side of Bury-street (Mr. J. Codrington for Mr. Shears).—Refused.

Width of Way and Construction.

Kennington.—An external iron service staircase at the rear of No. 117, South Lambeth-road, Kennington (Mr. J. Galpin for Mr. F. Challis).—Consent.

Width of Way and Deviation from Certified Plans.

City of London.—Rebuilding of No. 38, Hutton-street, City, and the erection of an addition at the rear (Mr. H. A. Satchell).—Consent.

City of London.—A building on the site of Nos. 2 and 3, Furnival-street, City (Mr. C. H. Townsend for the Food Reform Company, Ltd.).—Consent.

Width of Way, Frontage, and Construction.

Strand.—Iron and glass shelters at the Piccadilly and the Burlington-gardens entrances of the Burlington-arcade (Messrs. Slow, Preston, & Lyttelton for the Trustees of John Compton, Baron Chesham).—Refused.

Space at Rear.

Marylebone, West.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of an additional story to the rear portion of No. 19, Seymour-street, Portman-square (Mr. W. L. Lucas for Mr. A. Lichtenstadt).—Consent

Southwark, West.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of buildings at the rear of No. 51, Stamford-street, Southwark, whereby No. 51, Stamford-street will not have an open space at the rear exclusively belonging thereto (Mr. A. S. Tayler for the Trustees of the Unitarian Church, Stamford-street).—Consent.

Formation of Streets.

Lewisham.—Extension of the period within which the roadways of new streets for carriage traffic on the Hillyfields-park estate, Vicar's-hill, Lewisham, were required to be defined and thrown open to the public as highways (Mr. W. H. Collier).—Consent.

Buildings for the Supply of Electricity.

Bow and Bromley.—A modification of the plans approved for the erection of a fitting shop at the Poplar Electricity Works, on the northern side of Yeo-street, Poplar, to abut upon the western side of Violet-road, so far as relates to the substitution of concrete block walls of a total thickness of 9 in. instead of 10 in., in the construction of the fitting shop (Messrs. Nicholds & Reynolds).—Consent.

Uniting of Buildings.

City of London.—The uniting of Nos. 1 and 12 with No. 11, Paternoster-buildings, Paternoster-square, City (Mr. A. R. Conder for Messrs. Morgan & Scott).—Consent.

Dwelling-houses on Low-lying Land.

Peckham.—Thirty-one buildings on low-lying land situated on the northern side of Downes-street, Peckham (Mr. A. E. Mullins for Mr. M. J. Allen).—Consent.

Rotherhithe.—Three houses on low-lying land situated in Tower Bridge-road, Bermondsey (Messrs. Thompson Brothers).—Consent.

The recommendations marked † are contrary to the views of the local authorities concerned.

NEW CHURCH, EAST COWTON.—The foundation-stone of a new church at East Cowton, to be dedicated to All Saints, was recently laid. To Mr. Eccles, of Messrs. Woolfall & Eccles, Liverpool, was entrusted the preparation of the plans, and they provide for a building about 60 ft. by 30 ft., with the seating accommodation for 150. It will be built of Northallerton brick, with stone facings, from the Darleydale Quarry, Derbyshire. The contractor is Mr. T. Boyd, of Darlington.

Archæological Societies.

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.

The members of this Society, on Saturday afternoon last, by permission of the trustees, paid a visit to Morden College, Blackheath. They were received by the chaplain, the Rev. Dr. Lansdell, who had prepared for their information an account of the most ancient possession of the College, namely, the lordship or manor of Old Court, Greenwich. This estate of upwards of 200 acres of land is bounded on the north by the Thames, and occupies a considerable portion of Greenwich. Some think it the oldest of England's charities—that is, of property put in trust for religious and charitable purposes a thousand years ago, by a document still in existence, and which has been administered by trustees from the time of Alfred the Great to that of the XXth century.

Beginning at A.D. 854, the lecturer told of King Ethelwulf, and his son, King Alfred the Great, signing documents at Wilton and in Winchester Cathedral, whereby they and other signatories gave a tenth of the produce of their lands, for ever, for religious purposes, constituting the bishops of the church as their trustees. After this Ælfrida, daughter of Alfred the Great, in company with her two sons, on September 11, 918, signed a document giving over to the Abbey of St. Peter's, Ghent, for specifically religious purposes, her inherited lands of Lewisham, Greenwich, etc., and appointing the abbots and monks of Ghent as her trustees. After her death, nine or more Saxon Kings confirmed the gift of Ælfrida, and in some cases added thereto. King Edward III., about 1338, in time of war, took the property of alien monasteries more or less into his own possession, and Old Court so remained until the time of Henry V., in 1414. Henry V., however, did not keep Old Court as his own, but transferred it as endowment for the Carthusian Priory he was building at Shene, near what is now Richmond Park, and there the property of Ælfrida came into possession, as it were, of new trustees—the prior and monks of Shene, until 1531—that is, for 116 years.

Henry VIII., by a somewhat high-handed transaction with the prior, became possessed of Old Court Manor in 1531, and the freehold of Old Court remained in the hands of the Tudor and Stuart Kings and Queens for a period of 166 years. King James, on his coming to the throne, gave the Manor to Robert Cecil, afterwards Earl of Salisbury, and subsequently bestowed it on his queen, Anne of Denmark. On her death, he settled the fee upon his son, Prince Charles, who, in turn, settled it upon his queen, Henrietta Maria.

During the Commonwealth, Old Court was sold to Robert Tichborne, which sale was reversed on the coming to the Crown of Charles II.; and he, in 1662, granted it to his Queen Catherine. Meanwhile the leasehold had been granted by Henrietta Maria to Sir William Boreman, after whose death his widow appears to have fallen into needy circumstances, and mortgaged her property in Old Court Manor more than a dozen times, until Sir John Morden bought up her remaining interest for 9,000*l* (up to about 1775), and William III., for 1,276*l*., or three years' purchase of the estimated rent, sold the reversion of the freehold after 1775. And so the Manor of Old Court came into possession of Sir John Morden in the year before he opened Morden College for decayed merchants, at midsummer, 1700.

Wren, as is well known, was Sir John Morden's architect, and carried out the beautiful though simple design, a model of architectural treatment for such a building, at once dignified and home-like. It appears to have been completed in 1702.

SURREY ARCHÆOLOGICAL SOCIETY.

The annual excursion of this Society for the present year took place on Thursday, the 15th inst., and was to Godalming, Dunsfold, and Chiddingfold. Assembling at Godalming railway-station at 11.30 a.m. to the number of over 100 persons, the party were driven in conveyances to Dunsfold Church, where they were met by the Rev. H. Winn, the rector. Here the church was described by Mr. P. M. Johnston, F.S.A., architect. East of the church was the rectory-house, probably of the XVth century, and in the village were a great many ancient timbered houses of considerable interest. Mr. Johnston pointed out the spacious porch on the south side of the nave, and considered it as coeval with the church (a very rare thing), and also pointed out the oak tower and spire. The church was of one date (whether it had a predecessor or not), between 1270 and 1290, and was all of one style. He condemned certain features of the restoration of 1882. The south porch was remarkable for its antiquity, and the nave doorway possessed much of the original work, the wrought-iron work being very beautiful. Attention was called to the piscinæ and triple sedilia in the chancel, which Mr. Johnston thought was one of the most beautiful pieces of architecture left in Surrey. He next described the ancient roof over the nave and transepts, and the XIIIth century seating; the Elizabethan and Jacobean altar-table preserved in the vestry; the small frescoes, which were painted on the walls of the nave, and copies of which had been made and framed and hung in the nave; the font, a small circular bowl of Sussex marble, which he considered to be undoubtedly late XIIIth century. The party then walked across a typical Surrey village green to "Willards." This interesting old half-timbered house was inspected by permission of its owner, Miss Bovill, who received the visitors and escorted them over the house. "Burningfold" was the next mansion visited, by permission of its owner, Mr. C. T. A. Robertson. The old newel staircase and the timbering, which is very profusely used throughout the house, were examined with much interest. Mr. H. E. Malden here gave a short history and description of the building. He traced the ownership of the house from the March family, as early as the XIVth century down to the present time, and he pointed out that the front of the house was so singularly like the outside of Tangley Manor, which was dated 1580, that it led one to suppose that this front must have been put up about the same time; that would be by Richard March, or his son. March was one of the ironmasters of that neighbourhood, and got his resources from that industry. Chiddingfold Church was next visited, where the rector, the Rev. Canon Hunter, received the visitors. Here Mr. P. M. Johnston described the structure. He spoke of the exceptionally lofty arcades of small, narrow arches, dividing the nave and aisles, which, ugly as they were, were at least very interesting archæologically as belonging to the oldest phase of Perpendicular work; the actual date was about the close of the XVth or beginning of the XVIth century, and they replaced an earlier arcade. He drew attention to the XIIIth century font preserved in a recess behind the chancel arch, which Mr. Johnston thought closely resembled that at Dunsfold, and helped to strengthen the theory that both were of the XIIIth century. The "Crown" Inn, just opposite the church, was then inspected. This is probably the oldest inn in the county, and a great deal of information upon it was given in a paper written by the Rev. T. S. Cooper, F.S.A. (who was unavoidably absent through illness), but read by Mr. M. S. Giuseppi, the hon. secretary of the Society. The original part of the inn, which had been very considerably altered, dated from 1383. Dr. Nicholas F. Kendall's house was next visited. This antique mansion possesses on the first floor a room with some frescoes of very quaint design, but as to the date and origin of which there was no evidence.

Digitized by Google

Another old house at the top of Chiddingfold Green, known in the XIVth century as "Hanedmans," which is at present unoccupied and to let, was next visited, and a short description, also prepared by the Rev. T. S. Cooper, was read by Mr. M. S. Giuseppi. The day's excursion, which had been admirably arranged and successfully carried out by Messrs. M. S. Giuseppi and C. H. Jenkinson, the hon. secretaries, was then brought to a close. Valuable assistance was also rendered by Mr. W. T. Patrick, J.P., and Mr. F. H. Elsley, the Society's librarian, of Guildford. At 5.50 p.m. carriages left Chiddingfold Green for Witley railway-station.

Legal Column.

Workmen's Compensation.

Three decisions of the Court of Appeal on Workmen's Compensation require noting. In Brice *v.* Edward Lloyd, Ltd., a man employed as a general labourer had met with his death whilst employed on night shift by the respondents. On the premises where he was employed a dining-room, warmed and lighted, was provided where the employees could take their meals, but the evidence appears to have been that during the night shifts the workmen took their meals where and how they could, but the dining-room was always available. On the night in question the deceased, and others working with him, had gone some distance from where he was engaged at work to a tank room higher up in the building, and taken their supper on the cover of the tank, which was warm, and in leaving the top of the tank the deceased had fallen through an aperture into the tank. The County Court judge, on the authority of Blovelt *v.* Sawyer (1903) held that the accident arose out of and in the course of the employment. The Court of Appeal have reversed this finding, holding that the accident did not arise out of the employment. The cases Blovelt *v.* Sawyer and Morris *v.* Mayor, etc., of Lambeth (1905) were distinguished. In Blovelt *v.* Sawyer it was held that the contract of employment of a man paid according to the hours he actually worked included the dinner-hour, which meal he was at liberty to take on the premises; whilst in Morris *v.* Mayor, etc., of Lambeth it was held that in the absence of express prohibition certain latitude should be allowed in the place chosen in which to take the meals; but the Court pointed out that this did not imply that a workman could select any place, however dangerous or unsafe it might be. The case suggests to those employers who allow their workmen to take meals on the premises the advisability of specifying where these meals shall be taken. The mere provision of a dining-room was held in this case to have no bearing upon the matter unless the workmen were compelled to resort there.

The second case, Hughes *v.* Clover, Clayton, & Co., raised once again the question whether a man with some physical infirmity who meets with his death in the course of his employment, or suffers injury, is within the Act as suffering injury by "accident." The facts of the case are peculiarly noteworthy. The man, who was employed by shipbuilders, in the ordinary course of his avocation was screwing a nut with a spanner when he suddenly fell back dead. There was some attempt to prove that he had slipped, but the County Court judge held the evidence not to support this contention. The man was suffering from an aneurism of the aorta, and the medical evidence was that it was in such a condition that it might even have burst whilst the man was asleep, yet because it burst whilst the man was engaged at his work he has been held by the Court of Appeal, confirming the County Court judge, to have "suffered personal injury by accident arising out of and in the course of his employment." There is no doubt that, little by little, the cases have tended to increase the liability of employers under the Act in this respect.

In the first case on this point in the House of Lords, Fenton *v.* Thorley & Co., Ltd. (the *Builder*, August 22, 1903), there were two elements absent from the present case—(1) The man was in ordinary health; (2) there was some evidence that the press which he was unscrewing had unexpectedly become jambed. Between the decision of this case in the House of Lords and the case decided by them to which we shall refer in a moment, there have been several cases in the Court of Appeal. In Wicks *v.* Dowell (the *Builder*, May 27, 1905) a man subject to epileptic fits fell down the hold of a vessel, but the ground of the decision holding the employers liable in that case was that the nature of the man's employment compelled him to stand in a position of danger. The House of Lords in Brintons *v.* Turvey (the *Builder*, April 29, 1905) had held anthrax to be a personal injury within the meaning of the Act; and then in Ismay, Imrie, & Co. *v.* Williamson (the *Builder*, August 15, 1908) the majority of the House held that a man who was in a very enfeebled condition owing to want of food, and who suffered a heat-stroke in an engine-room, had died from an accident. This case can be reconciled with Wicks *v.* Dowell, on the ground that his duties compelled the man to be in a position of danger to himself in his condition; but the case we are now reviewing goes further than all previous decisions, and practically amounts to this, that if a man suffering from any disability dies whilst engaged at his work, if by any possibility the work he was at could contribute to his death or injury, then the employer is liable. The decision must render it extremely difficult for men suffering from any infirmity to obtain employment.

The third case, Hodgson *v.* Owners of West Stanley Colliery merely turned upon the question of dependency. The deceased man and two of his sons were all earning over 2*l.* per week, and the household was maintained out of their earnings, which were made one common fund. All three were killed in a colliery accident, and the question was whether the widow and other children were wholly dependent upon the father. The Court of Appeal, on the authority of previous decisions, held that in the absence of any evidence that the father's wages were inadequate to maintain the family his widow and children must be deemed to be wholly dependent upon him.

BOOKS RECEIVED.

Liverpool Committee for Excavation and Research in Wales and the Marches. First annual Report; 1908. Pp. 86. (Liverpool University Press.)

How Property is Valued: A Popular Explanation. By Marcus Esdale. Pp. 250. (The Cable Printing and Publishing Company. 6s.)

Small Estate Management. By Albert C. Freeman, M.S.A. Pp. 119. (Rebman, Ltd. 2s. 6d.)

The Practical Management of Sewage Disposal Works. By W. C. Easdale, M.S.E. Pp. 54. (The Sanitary Publishing Company. 2s.)

Trade Catalogues.

Messrs. Lockerbie & Wilkinson, of Tipton, have sent us an illustrated catalogue of acetylene generators, burners, and lamps. This firm has fitted complete acetylene installations in a large number of country houses, churches, and institutions, and manufactures "Thorscar" generators and "Thorlite" purifiers. The same firm has also sent us a small pamphlet, entitled "Acetylene: What it is and all about it," which has been approved by the Executive of the Acetylene Association, and which contains much useful information concerning acetylene and its uses.

Messrs. Samuel Goodby, sen., & Sons, of Wolverhampton, send us two leaflets describing and illustrating their bench cramp, with improved safety-pin, which, it is said, cannot become detached from the sliding jaw, as often happens with the ordinary pin. Another useful device of the same firm is the B.P. cramp for floor laying, and which can also be employed as a door or bench cramp by attaching it to a plank and adding the back jaw.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

Amersham.—The District Council has passed the following plans:—Dwelling-houses, Packhorse-road, Chalfont St. Peter, Mr. W. Watson; two houses, Great Missenden, Mr. A. Randall.

Barking.—The District Council has passed the following plans:—Two houses, James's-street, Mr. J. C. Garbett; eight houses, Cranborne-road, Mr. E. E. Cross; six houses, St. Awdry's-road, Mr. G. West; building for metal melting purposes for Messrs. A. W. Smith & Co., London-road, Barking.

Berkhamsted.—The District Council has passed plans for houses for Messrs. Whybrow & Taylor; also for shops, High-street, for Mr. Knowles.

Birmingham.—Skating-rink, John Bright-street. Mr. H. Lloyd, architect, 38, Bennett-hill, Birmingham; Mr. T. Hopkins, builder, Thorp-street, Birmingham.

Bridlington.—Enlargement at High School for Girls (5,987*l.*). Mr. T. A. Moore, builder, Bridge-street, Bridlington.

Cardiff.—Extensions to school. Mr. E. W. Corbett, architect, Estate Office, Castle-street, Cardiff.

Cornwall.—Rebuilding Polurrian Hotel. Mr. A. Gilbert, architect, Torpoint.

Cwmbran (Mon).—Police-station. *Mr. H.* Tanner, County Surveyor, Shire Hall, Newport.

Forton.—Additions, All Saints' *Church. Mr.* W. D. Caroe, architect, Great College-street, S.W.

Foxhole (Cornwall).—County school. *Mr.* B. C. Andrews, architect, Biddick-court, St. Austell.

Golfach, Fargoed.—County school (6,000*l.*). Mr. D. P. Jones, architect, Charles-street, Cardiff.

Hayes.—The District Council has passed the following plans:—Additions to Mead House, Hayes End-road, Dr. Higginson; five houses, Hammen-lane, Mr. W. Minet.

Hayle (Cornwall).—County school (2,000*l.*). Mr. Sampson Hill, architect, Green-lane, Redruth.

Hereford.—Additions to St. Nicholas Church. Mr. W. W. Robinson, architect, King-street, Hereford.

Heston and Isleworth.—The District Council has passed the following plans:—Six cottages, Worton-road, Isleworth, Mr. H. Harris; bioscope hall, Staines-road, Hounslow, Messrs. Humphries, Ltd.; four houses, Standard-road, Hounslow, and two houses, Treaty-road, Hounslow, Mr. W. G. Morgan.

Langley.—School, Titley-road. Mr. F. J. Gill, architect, Lloyd's Bank-chambers, High-street, Smethwick; Mr. G. H. Marshall, builder, 17, Hawthorn-street, West Smethwick.

Middleford (Burslem).—Buildings for Wholesale Co-operative Society (3,500*l.*). Mr. R. Worcester, architect, Balloon-street, Manchester; Mr. W. Sherratt, builder, Smallthorne, Stoke-on-Trent.

Newbury.—School, Stanford-road (16,000*l.*). Mr. H. C. Pegg, architect, Croydon.

New Charlton. Mission church, the Good Shepherd. Rev. E. C. Evans, New Charlton.

Northampton.—The Town Council has passed the following plans:—Four houses, Euston-road, Mr. R. Cleaver; two houses, Albany-road, Mr. A. Glenn; warehouse and shop, Mercers-row, Mr. S. Hawkes; extension of factory, Market-street, Messrs. Oakeshott & Finnemore.

Norton. Boys' department of school. Surveyor, East Riding, Yorks Education Committee, County Hall, Beverley.

Penparke. Church hall (650*l.*). Rev. Dr. M. J. Powell, Penparke, Aberystwyth.

Richmond.—Enlargement of Holy Trinity School, for the Managers.

Sudbury.—Rearrangement of Council school. Mr. H. G. Crothall, surveyor, Middlesex Education Committee, Guildhall, Westminster, S.W.

Sutton.—A plan lodged by Mr. F. A. Ginever, for alterations to the High School for Boys, Cheam-road, was passed by the District Council.

Sutton Coldfield.—Skating-rink (6,000*l.*). Mr. A. G. Latham, architect, 5a, Temple-row, Birmingham.

Swansea.—Buildings, East Burrows-yard, Messrs. Corker & Bevan, Ltd.; fifty houses on Craig Trewyddfa Common, Mr. F. H. Glynn Price, surveyor, 7, Picton-place, St. Helens-road, Swansea; alterations to Morriston police-station, Mr. M. Hoskins, estate agent,

Digitized by Google

Swansea Town Council; caretaker's house at Pentrepoth Council school, Mr. M. Hoskins, estate agent, Swansea Town Council. The Town Council has passed the following plans:—Motor garage, Approach-road, Manselton, Mr. R. J. Farman; two houses, Danygraig-road, Mr. John Thomas; two houses, Alice-street, Cwmdu, Mr. John Evans; two houses, Heol-y-Knap, Treboeth, Mr. Llew. Williams; operating-room and additions to female imbecile ward at Union Workhouse, for the Guardians; two houses, Llangyfelach-road, Brynhfryd, Mr. F. B. Yeo; shops and offices, Castle-street and College-street, Messrs. James & Gustavus; seven shops, Alexandra-road, and two houses, Orchard-street, Mr. Henry Billings; five lock-up shops and workshop, Carmarthen-road, Mr. T. Davies; four houses, Gorse-road, Mr. J. Hopkins.

Watford.—The District Council has passed the following plans:—Four houses, Princes-avenue, Mr. Charles Eames; twelve houses, Kensington-avenue, Messrs. W. & D. Wilkins; two houses, Lower Paddock-road, also four houses, Field-road, Mr. H. W. Grover: seven houses, Sandringham-road, Mr. J. W. Dudley; five houses, Hyde-road, Mr. J. Darvell.

Weaverthorpe.—School. Managers, Weaverthorpe C.E. School.

Whaplode.—Alterations to St. Mary's Church. Mr. W. W. Weir, architect, Winchmore-hill, London, N.

Winchcombe (Gloucestershire). — County school (3,000*l.*). Mr. R. S. Phillips, architect, Bank-chambers, The Cross, Gloucester.

Wolverhampton.—School. Mr. F. Fleeming, architect, Bank-chambers, Wolverhampton; Messrs. Willcock & Co., builders, Darlington-street, Wolverhampton.

Wrenbury. — Enlarging St. Margaret's Church (1,000*l.*). Mr. C. Russell Hall, architect, Congleton.

Correspondence.

"MEDIÆVAL ARCHITECTURE."

SIR,—In reference to your review of my "Mediæval Architecture" in the *Builder* of July 17, will you allow me to call your attention to the fact that a third volume on the architecture of the Middle Ages in England is in preparation? That the work is not complete in the two volumes which have appeared has been widely announced by the publishers, is implied in the preface, and would seem obvious from the title-pages, where it is distinctly stated that the first volume is limited to the "Origins," the second to "Normandy and the Ile de France." Had your reviewer glanced at this rather essential part of the book, he would not have made the statement that "there is no limitation implied on the title-page." A. KINGSLEY PORTER.

*** The facts are not exactly as Mr. Porter represents them. He sends us, now, a publisher's circular stating that he intends to take up the subject of English mediæval architecture in another volume. There is no indication of this in the two volumes sent to us with the title "Mediæval Architecture." They are complete in themselves; the author concludes the second volume with the words—

"The course of the architecture of the Middle Ages had been run. . . . . Mediæval art was dead, dead with the age, with the faith that produced it—utterly, irretrievably, for ever dead. *Requiscat in pace.*"

Those words indicate a summing up of the subject, and to the second volume is added a "General Index," a feature which it is customary to add only to a completed work. We were therefore perfectly justified in assuming that this history of mediæval architecture, from which everything but French work is excluded, was first put forth as a complete work on the subject.

That Mr. Porter will give us a very finely illustrated book on English mediæval architecture we have no doubt; but to treat the subject adequately he will have to learn some things which he does not know now. We reproduce from his book the illustration (taken originally from Ruprich-Robert) of the front of Pontorson, with the words in which he describes it. That front is one of the most patent examples that could be given of the early use of the pointed arch to guard against the dropping of the crown in a large constructional arch, all the smaller and decorative arches remaining circular. We should hardly think there was a student in the Architectural Association classes who would not see that for himself; and if an author has so little eye for structural conditions as not to see that, we can hardly see why he should write on architecture at all. Architecture is structure as well as æsthetic.—ED.

FERRO-CONCRETE.

SIR,—We notice in your issue of July 24 a paragraph on page 107 concerning some accidents in "ferro-concrete."

You are no doubt aware that the word "ferro-concrete" was introduced by the late L. G. Mouchel to designate the Hennebique system, and this fact being widely known it might be supposed that the accidents you refer to concerned this system of reinforced concrete, which is not the case.

The buildings in question were not given to our contractors, who tendered for them, because the prices for the Hennebique structures were somewhat higher than those quoted by other firms on other systems. It was a case of competition in design, which is becoming somewhat common at the moment, and which will no doubt lead to similar results here.

As we have a reputation to maintain, we will not adopt inferior materials, nor will we depart from our methods of calculation which have proved so highly successful hitherto. Over 19,000 works have up to date been successfully carried out in the Hennebique system in all parts of the world.

We hope that when commenting on similar failures in the future you will be able to use such generic terms as "reinforced concrete" or "armoured concrete," as the use of the word "ferro-concrete" on such occasions is liable to cause us damage.

For L. G. MOUCHEL & PARTNERS, LTD.,
J. S. E. DE VESIAN,
Director.

*** It is quite correct that M. Mouchel invented the term "Ferro-concrete," and wished, we believe, to get it registered as a "trade-mark," but there were some difficulties about this with the Patent Office. But at the present moment "ferro-concrete" is an accepted term in general use for combinations of steel and concrete, and is certainly not taken by anyone as denoting any special construction; and it would hardly be convenient now to drop a term which, whatever its origin, has come into general use.—ED.

THE XIIITH CENTURY SMITHFIELD GATEWAY.

SIR,—I am pleased to inform you that the gateway is secure.

A contract has now been signed for the purchase of the superstructure of the gateway and for a portion of the house on its south side, and we can enter into possession at once.

This satisfactory result is due, in the first place, to the generous response to my appeal in November last, which produced 1,575*l.* towards the 2,100*l.* required; and, in the second place, to the trustees who own the property, and who, although they have not come to an arrangement to rebuild the remainder of the property as they desired, have allowed us to obtain the part we required at once, and have throughout done all in their power to facilitate matters.

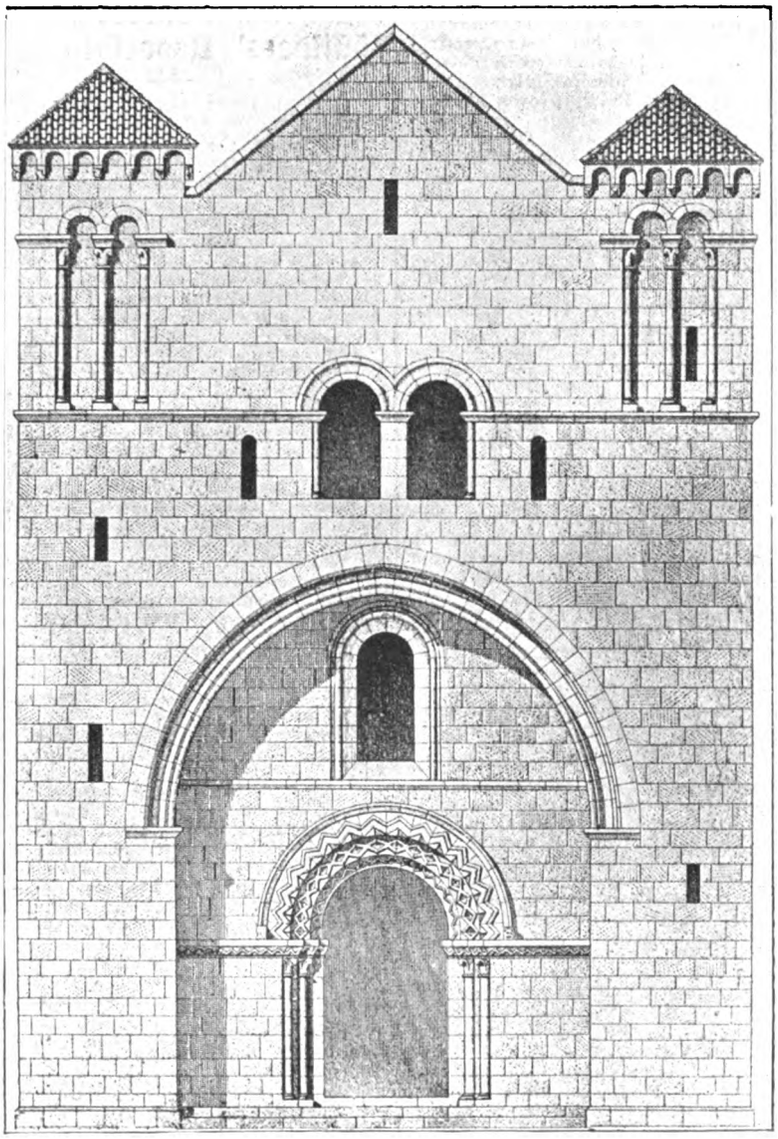
As the rest of the property is not now to be rebuilt, the whole block can remain in its present picturesque condition.

To complete the purchase and repair the building internally 525*l.* is still required, and I trust that this letter may enable me to express my gratitude for such further subscriptions as will render possible the completion of this important and interesting work.

W. F. G. SANDWITH.

LONDON AND DISTRICT BOROUGH COUNCILS.

Battersea.—Estcourt-road is to be repaved with tarred slag-macadam, at an estimated cost of 243*l.* The London County Council is to be offered a contribution of 1,000*l.* towards the cost of acquiring forecourts on the north side of Lavender-hill, between Queen's-road and Wycliffe-road. Alterations are to be made



The Façade of Pontorson, described by Mr. Kingsley Porter as an example of "the pointed arch . . . . used in a purely fanciful and decorative manner."

Digitized by Google

to the switch-board at the generating-station, at a cost of 120*l*. Plans have been passed as follows:—Messrs. J. H. Jenkin & Co., additions to the chapel at St. John's College, Vicarage-road; Rev. E. Rabagliati, workshops and recreation-rooms at the Salesian Schools, Surrey-lane.

Deptford.—Six roads are to be repaired, at an estimated cost of 508*l*. A plan has been passed for Messrs. Rogers & Covington for an extension to Rogers' factory, Bolina-road.

Fulham.—The Borough Surveyor is to make up and pave Ranelagh-avenue, at an estimated cost of 396*l*. Owing to an experiment of lighting portion of Fulham Palace-road with metallic filament lamps attached to the tramway poles being successful, this method is to be substituted in place of the present system of arc lighting in the road mentioned and High-street, Fulham. The estimated cost is 507*l*. It is believed that this initial outlay will be covered by the savings due to the alterations in two years. Nine hundred and thirteen metallic filament lamps are to be installed in the Town Hall in place of carbon lamps. The cost is put down at 218*l*. 200*l*. is to be spent in electrical fittings for the new Central Library. Plans, submitted by Mr. C. G. F. Rees, of Stanmore, Middlesex, for the erection of a mission church and a caretaker's cottage at the corner of Kempson-road and Musgrave-crescent, have been passed.

Lewisham.—A plan and estimate is to be prepared for the paving as a new street of Haseltine-road, Lower Sydenham. A plan for the paving and forming of Bankwell-road, Lee, at a cost of 334*l*., has been passed, as has also a plan for the paving and forming of Fernbrook-road, at a cost of 977*l*. The usual notices are to be served in connexion with a road widening at Brockley-rise, opposite Agnew-road, in connexion with the tramways. The estimated cost of the improvement is 850*l*. The following works are to be carried out:—Mr. E. W. Webb, making-up Bexhill-road, 395*l*.; Messrs. Fry Brothers, kerbing, etc., Sandrock-road, 473*l*.; Messrs. Apthorpe & Co., paving footways, Bexhill-road and Sandrock-road, with artificial stone, 3*s*. per super yard; Mr. W. Pearce, constructing sewers in Beckenham-lane, 476*l*. The following plans have been passed:—Mr. A. W. Osborn, buildings south side of Brockley Cottages, and also in Malyon's-road; Messrs. Norfolk & Prior, eleven houses, Tharnsbeach-road and Highclere-street; Mr. F. E. Wright, seven houses, George-lane; Messrs. Heath & Sons, five houses, Phœbeth-street; Mr. James Watt, eleven houses, Arran-road; Mr. A. Cooper, fifteen houses, Perry-hill, Datchet-road, and Catslands-lane.

Paddington.—Combined drainage schemes are to be carried out in Porchester-gardens-mews and Warwick-crescent, at an estimated cost of 270*l*.

Stepney.—Mr. D. T. Jackson, the contractor for the river work at Blyth's Wharf, is to receive 50*l*. per week for each week that he is beforehand with the completion of his contract, which was to expire on December 10. 250*l*. is to be laid out in paving Birchfield-street.

Walthamstow.—At a conference between representatives of the Metropolitan Electric Tramways, Ltd., the Essex County Council and Walthamstow Council, it was agreed that the tramways company should pay one-half of the total cost (but that this half was not to exceed 5,000*l*.) to construct a new bridge over the Lea at Ferry-lane. Two-thirds of the remainder is to be paid by Essex, and one-third by Walthamstow. In regard to the proposed new fire-station in Wood-street, Mr. Dunford has been directed to prepare sketch-plans and designs making provision for the following:—Engine-room about 40 ft. square, tower 65 ft. high, watch-room (also to be used as a recreation-room), kitchen (downstairs), workshop (with office for chief officer), flat containing four rooms for a married man to be put over the engine-room, workshop and storeroom at rear, petrol well, drill-ground, two gates for appliances, front and back. The consideration of a scheme to supply electricity to Highams Park, at an estimated cost of 6,828*l*., has been adjourned for two months. The Electrical Engineer is to submit a detailed report upon the proposed conversion of the whole of the street gas-lamps to electric light. The Surveyor is to make up Rosslyn-road, at an estimated cost of 406*l*., as soon as the money has been raised. Plans for twelve houses in Belle Vue-road, and three houses in Hillcrest-road, have been passed for Messrs. H. Slow & Sons. Rev. E. Ogden has lodged a block plan for a church in Highams Hill-road, and Mr. R. Brown for a skating-rink in Forest-road.

Westminster.—The Works Committee have entered into a provisional arrangement with the Commissioners of the Exhibition of 1851 to make up, pave, channel, etc., various roads in the vicinity of the Albert Hall, at an estimated cost, to be refunded by the Commissioners, of 9,662*l*. 10*s*. Ninety-five new hydrants are to be provided for thirty-nine streets, at an estimated cost of 20*l*. per hydrant. In May last plans were forwarded to the London County Council with regard to the proposed purchase from the Commissioners of Woods and Forests of land to widen Argyll-place, at its junction with Regent-street. A letter has now been received from the Improvements Committee of the Spring-gardens authority to the effect that they cannot recommend the County Council to make any contribution to the cost of the proposed improvement. It is intended to carry out alterations at the Farm-street depôt, at an estimated cost of 540*l*. The following contracts have been accepted by the several Committees interested, subject to the usual sanction of the Council:—Mr. C. F. Kearlay, 4, Great Marlborough-street, disinfecting-station, residences, etc., at Grosvenor Canal, 9,921*l*.; Messrs. D. R. Paterson, Ltd., brick sewers in Berkeley-street, Coventry-street, St. James's-square, and King-street, 2,201*l*.; Acme Flooring and Paving Company (1904), Ltd., repaving eastern half of Soho-square with yellow deal blocks, 1,210*l*. Plans have been lodged by M. de H. Duval for the erection of a skating-rink in Morpeth-terrace, and by Messrs. Haward & Maynard, for a building on the east side of Spring-gardens, abutting on Charing Cross.

Woolwich.—Electric mains are to be extended at an estimated cost of 278*l*., and distribution mains are to be extended at a cost of 360*l*. The sewer in Beresford-street is to be reconstructed; the cost is put down at 1,117*l*. The mission hall in Francis-street, North Woolwich, is to be purchased, if suitable terms can be arranged, and adapted for library purposes, at a cost not to exceed 900*l*. The following plans have been passed:—Messrs. W. T. Henley & Co., rubber mill and shops, Henley-road, North Woolwich; Messrs. Chinchen & Co., Berens-road, Kensal Green, N.W., additions to St. Paul's Church, Hector-street, Plumstead.

Master Builders' Associations, etc.

NATIONAL FEDERATION OF BUILDING TRADE EMPLOYERS.

Last week the Portsmouth and District Master Builders and Building Trades' Association entertained the members of the National Federation of Building Trade Employers of Great Britain and Ireland, who visited the borough for their bi-annual conference.

The delegates, numbering about sixty, arrived on Monday, and on Tuesday assembled in the Grand Jury-room, where they were accorded a hearty welcome to the borough by the Mayor, Councillor James Baggs.

The morning was spent in discussing important trade questions, and at the conclusion of the business of the conference the delegates were entertained at a complimentary luncheon held by the kindness of the Mayor. Mr. G. J. Davis, the President of the Portsmouth Association, occupied the chair, with the Mayor on his right, and Mr. E. T. Brown, the President of the Federation, on his left. The attendance included many prominent local builders.

Mr. S. Smethurst, the senior Vice-President of the Federation, gave "The Mayor and Corporation," and the Mayor, responding, gave some interesting figures showing the progress of the borough in the last fifty years. The reduction of the death rate from twenty-two per 1,000 to sixteen per 1,000 was largely due to the better housing and improved sanitation, for which the building science was mostly responsible.

Councillor J. W. Perkins submitted the toast, "The National Federation of Building Trade Employers." He said the building trade was the second most important branch of commerce, and it was a fact that out of every sovereign spent in the building trade 14*s*. 6*d*. of it went absolutely in labour directly or indirectly. The Association that they represented stood for protection, not of a selfish or personal sort, but a protection based on absolute justice to all parties concerned.

Mr. E. T. Brown, the President of the National Federation, whose name was coupled with the toast, replied. The Federation, he said, was extremely pleased to receive the invitation from Portsmouth, because it brought them into closer touch with a part of the country which really required attention. The southern counties were not up to date in association work, though the Portsmouth Association was engineered by excellent officers.

In proposing the toast, "The Portsmouth Association," Mr. Brown expressed thanks for the hospitality and friendship offered by the Portsmouth Association.

Mr. Davis replied to the toast.

COURT OF COMMON COUNCIL.

Holborn Viaduct.—On the recommendation of the Streets Committee, it was agreed that the Holborn Viaduct bridges crossing Farringdon-street and Shoe-lane be repainted, etc., at a cost of about 600*l*.

Pipe Sewer Reconstruction.—The same Committee recommended, and it was agreed, that the pipe sewer beneath Church-alley, Basinghall-street, be reconstructed, and asphalt be substituted for the existing York paving, at a total estimated cost of 175*l*.

Application for the Loan of Pictures.—An application of the Committee of the Canadian National Exhibition, Toronto, for the loan of two works from the Art Gallery for their approaching exhibition in September next was referred to the Library Committee.

The Surveyor's Department.—The Officers and Clerks Committee reported the retirement of Mr. A. L. Gosling, the chief assistant, and the death of Mr. F. H. Williams, the second assistant, in the City Surveyor's office, and submitted a proposed rearrangement of the staff, certain promotions, and a redistribution of the duties.

Office Fittings, etc.—The Overseers Committee were authorised to expend a sum not exceeding 1,525*l*. on furniture and fittings required in the new offices of the Valuation and Rating Department.

Gresham College.—The Special Committee reporting on the proposals that had been made with regard to this institution, stated that the following suggestions had been made to the Joint Grand Gresham Committee:—

"1. The abandonment of the proposed scheme for the remodelling of the interior of Gresham College, at an estimated cost of 4,000*l*.

2. To abolish the college, sell the site, and invest the proceeds, the income thereof to be earmarked for the cost of lectures elsewhere, and possibly the establishment of scholarships in connexion therewith. Assuming the foregoing, the lectures might be delivered at the London Institution or the City of London School; if the former be selected, the acquisition thereof by the Corporation and the Company, independently of the Gresham Trust, and, if acquired, the expenditure by those bodies conjointly of say 5,000*l*. a year in some scheme for the public good, consistent with, but separate from, the Gresham Trust; and

3. Failing the approval of the foregoing suggestion, to utilise the City of London School for the lectures, and, after providing for the expense thereof, to appropriate the surplus to the establishment of scholarships, say in connexion with the City of London School."

The Gresham Committee had accepted the first suggestion, and so much of the second as relates to the disposal of the income of the funds derived from the sale of the site of the college and the saving of expenditure through the closing, or such other sum as may be decided upon.

The Court agreed that the City of London Schools Committee be instructed to arrange with the Gresham Committee for the use of the school for the purposes of the Gresham Lectures at the forthcoming Michaelmas term, and to submit their recommendations as to its future use for the approval of the Court.

Furnishing.—The City Lands Committee were authorised to furnish the new Court-room and waiting-room at Guildhall, at a cost not exceeding 964*l*.

St. Paul's Churchyard Fountain.—The Coal and Corn and Finance Committee recommended that the fountain in St. Paul's Churchyard, which is to be removed from its present situation to make room for a memorial to the late Mr. Riches, K.C. be given to the Borough of Hornsey for erection by them in the pleasure-grounds at Middle-lane, Hornsey. After some discussion this was agreed to.

Obituary.

MR. CAMPBELL.

The death, on July 19, at 7, Greenhall-terrace, Edinburgh, is announced of Mr. John Archibald Campbell, of 124, St. Vincent-street, Glasgow. Mr. Campbell was elected a Fellow of the Royal Institute of British Architects in June, 1906. He was a member of the Glasgow Institute of Architects, serving on the Council in 1901-2. Mr. Campbell was the architect of, in Glasgow, the following:—No. 166, Buchanan-street (illustrated in the *Builder*, September 17, 1898); premises for the British Workmen's and General Assurance Company; a large block at the corners of Hope and West George streets; Nos. 122-8, St. Vincent-street, for the West of Scotland Branch Office of the Edinburgh Life Assurance Company, 1905; new premises for the Imperial Union Club; and, in conjunction with Mr. A. D. Hislop, of Glasgow, of the new buildings in St. Vincent-street for the Northern Assurance Company, 1909. He was the architect also of the Ewing Gilmour Institute, Dumbarton, and the cottage convalescent homes at

Digitized by Google

Drymen, for the workmen of Messrs. John Orr Ewing & Co.; for extensive alterations and additions at Carrick House, Ayr, for Mr. T. G. Arthur; and of the first premiated designs of the Falkirk and District memorial to the Argyll and Sutherland Highlanders, 1905. In April, 1904, Mr. Campbell was appointed, after a competition, to be the architect of the Queen Victoria Schools and Memorial for Scottish Sailors and Soldiers, the complete scheme providing for 300 boys, with future extension, at an estimated cost of about 70,000*l.* In 1885 Mr. Campbell won the Tite Prize for his designs for a seaside pavilion (illustrated, March 28 and April 11, 1885); he was awarded the third premium for the Glasgow Exhibition, 1891, buildings; and his designs, out of thirty-one sets submitted, were placed in the "final selection" group in the Dumfries and Maxwellton Public Library competition, 1900. He was awarded the first premium for his designs, out of twenty-six sets submitted, for the International Exhibition, Edinburgh, 1908.

General Building News.

FREE CHURCH, WYCHE, HEREFORDSHIRE.

It is proposed to build at Wyche a new Free Church to seat about 200 people, with two classrooms and other offices, at an estimated cost of 1,200*l.* Mr. Harold Seymour Scott, of Birmingham, has been appointed architect to the work.

MISSION CHURCH, BROOKWOOD.

The foundation-stone has been laid of the new mission church of St. Saviour, at Brookwood. The church has been designed by Mr. J. Henry Ball, and when completed will provide accommodation for 304 persons. For the present, however, seating for 258 only is to be provided. The builder is Mr. E. C. Hughes, of Wokingham.

THE CHAPEL OF THE THISTLE.

The Town Council of Edinburgh approved, on the 27th inst., of the plans for the Chapel of the Knights of the Thistle to be added to St. Giles's Cathedral, Edinburgh. The plans have been prepared by Mr. R. S. Lorimer, A.R.S.A., and show a chapel 33 ft. long, 19 ft. wide, and 35 ft. high to the apex of the vaulting. The west end of the chapel will be occupied by a stall for the use of the King, and stalls for the two special Knights, the Prince of Wales and the Duke of Connaught. The stalls for the sixteen Knights of the Thistle will be ranged round the side walls.

HIGHER GRADE SCHOOL, WICK.

The erection of a new institution for higher grade education in Wick has just been commenced. The designs have been prepared by Messrs. D. & J. R. M'Millan, architects, Aberdeen, and the contractors for the work are as follows:—Mason work, D. H. Harper, Wick; carpenter work, Hendry & Keith, Aberdeen; slater work, George Farquhar, Aberdeen; plasterer work, James Smith, Wick; plumber work, John Blaikie & Son, Aberdeen; painter work, John Mason & Son, Aberdeen; glazier work, Robert Shearer, Wick; iron beam work, Redpath, Brown, & Co., Edinburgh; gates and railings, Wares & Co., Wick; heating engineer, Robert Tindall, Aberdeen. The cost will amount to about 8,000*l.*

COUNCIL SCHOOL, WIMBLEDON.

The new Council school in Pelham-road has now been completed and opened. The length of the main front of the school is 165 ft., and the depth from front to back 55 ft. The general arrangements of all the floors are similar. For each department there is an assembly-hall of ample dimensions. The east side of the building is wholly occupied by the classrooms; the assembly-halls look to the west, and additional classrooms are placed at each end of the hall. All the classrooms are entered from the assembly-hall or from short corridors running north and south from the hall to the extreme ends of the building. With the exception of two classrooms in the infants' school, each for forty-five scholars, no classroom is for a larger number than forty pupils. In the basement there are the heating chambers, and there is a drying-room for children's wet garments, as well as caretakers' room. The ventilation is combined with the heating system by the use of ventilating radiators for the supply of fresh air. The total cost of the building has been 16,457*l.* 15s. 9d. Mr. H. P. Burke Downing was responsible for the plans.

SCHOOL, CAERPHILLY.

A new higher elementary school is to be erected at Caerphilly by the Glamorgan Education Committee. In addition to the ordinary classrooms and rooms for laboratories, lecture, cookery, manual instruction, and art rooms, dining-rooms and spray baths are to be provided, for which plans have already been approved. This will be the largest out of about eight higher elementary schools. Plans for similar schools have been approved for Bargoed and Routlottyn, the drawings having in both cases been prepared by the County Architect, Mr. D. Pugh-Jones, Cardiff.

ADDITIONS TO GROSVENOR HOSPITAL.

A small mortuary chapel and postmortem-room is being erected at the Grosvenor Hospital, Vincent square, from the designs and under the superintendence of Mr. R. St. A. Roumieu, who acts as honorary architect to the Hospital Committee. The King Edward's Fund have made the grant for the cost of this building, which is faced with red bricks and covered with tiles, all in keeping and accord with the hospital building.

EXTENSIVE BUILDING IN CHICAGO.

Although the transfers of land in Chicago in 1908 were not so numerous as in the previous three years, yet the mortgages of over 100,000,000*l.*, and the value of the buildings to be erected for which permits were given—13,700,000*l.* were the highest ever recorded in Chicago. Many large buildings for hotels and offices are being erected this year. The North-Western Railroad is building an enormous station in the centre of the city, covering 10 acres of land, and the Chicago, Milwaukee, and St. Paul, Pennsylvania, Alton, and other lines, which at present use the Union Station, are expected to build. In the outlying districts, houses and flats are being put up in every direction, and the demand seems to increase faster than the supply. In 1908 permits were granted for 10,771 buildings within the city limits, being the largest number since the three years before the World's Fair, but even then the value of the buildings to be erected was 1,000,000*l.* less than those designed for 1908.

PUBLIC BATHS, SHEFFIELD.

New public baths have been built at Sheffield to serve the district of Hesley. Mr. Arthur Nunweek has been the architect, and the total cost of the building and furnishing, but excluding site, has been about 12,500*l.* The large swimming bath is 75 ft. in length. There are douche-baths for both sexes, Russian baths, special committee-room, and ladies' retiring-room, and also a children's dressing-room. The large bath has been constructed of concrete reinforced by steel bars.

HOSPITAL PAVILION, TEIGNMOUTH.

A male hospital pavilion has been erected in the grounds of Tynemouth Union Workhouse. The new building is 184 ft. long, and consists of two floors. There are on the ground floor two wards, the larger one 84 ft. by 24 ft., and the smaller one 48 ft. by 24 ft., with accommodation for twenty-eight beds and sixteen beds respectively, the necessary sanitary arrangements being provided in off-shoots in the centre of each ward. Separating the two wards is a day-room; two separation wards, each containing two beds, are also provided, together with service-room and bathroom. The upper floor is a replica of the ground floor, with the addition of a glass-roofed balcony. The total accommodation thus provided is for ninety-six beds. Large airing-courts surround the building, and the sanitary conditions are on the most up-to-date principles. The heating of the building is carried out on the hot-water system, by means of radiators, heated by a caloriffer in the basement, while, in the case of emergency, Shorland's "Manchester" stoves, with underground flues, have also been installed. The approximate cost has amounted to 5,900*l.* The building has been erected from the plans and specifications of Mr. Henry Gibson, architect, the contractor being Mr. Jos. F. Newbold, both of North Shields. The sub-contractors were:- Mr. H. Taylor, iron and plumbing work; Messrs. W. W. Ward & Sons, painting and decorating; and Messrs. Dinning & Cooke, hot water engineers.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, GREAT PORTLAND-STREET, W.

On the 22nd inst. the King opened the new in-patients' department of this hospital. The hospital has frontages to Great Portland-street and Bolsover-street. The accommodation provided is for 200 beds in the wards and for thirteen on balconies, and a resident staff of twenty-two. The nurses' home and out-patients' department are connected by a subway under Bolsover-street. In the former the accommodation is for eleven sisters, thirty-three nurses, and six servants. The natural system of ventilation has been relied upon, the wards being open all round, permitting cross-currents of air between the windows. Mr. Roland Plumbe is the architect. The cost of the new building has amounted to 75,000*l.*

NURSING HOME, UCKFIELD.

A nursing home is being built for the Uckfield Nursing Association. The builder is Mr. C. H. Pelham, of Uckfield, and Mr. H. Alderton, of Piltdown, is the architect.

NEW BUILDINGS, ETC., IN SLOUGH.

The Slough Urban District Council have approved the plans of the following:—Two houses in Ragstone-road, for Mr. J. Spiller; motor-shed in Church-street, for Mrs. E. Weaver Adams; a house in Ragstone-road, for Mr. F. Mattingley; a house in Ledger's-road for Mrs. C. J. Jackaman; new street, Eton, Chalvey, and Ragstone-road, for Messrs. Goodacre, Harrison, & Darrell.

TRAINING COLLEGE, DUDLEY.

A new training college for pupil teachers has been built at Dudley. The building is faced externally with red Leicester sand stocks and Leicester stone dressings, and the roof covered with red Hart's Hill tiles. The internal joinery is of canary wood, stained green, and varnished, and simple wood panelling is substituted for the usual glazed brick dadoes. There is an elevated ground floor, with a half basement under the front portion of the front block. The accommodation on this floor comprises an entrance hall for officials and visitors, secretary's office, waiting lobby, library (or committee-room), and common-rooms for male and female students respectively. At the rear, in the centre of the building, is the assembly hall, a room capable of seating 200 persons. At either end are the staff-rooms, with lavatories. The half basement contains changing and cloak rooms, and stores for bicycles, sports implements, etc. These stores are approached by a sloping way at either end of the building so that students may deposit their cycles in the store, and then pass on to the cloak-room before ascending to the ground floor. On the first floor are located the science lecture-room and laboratory, rooms for the principal and vice-principal, and two music-rooms, in secluded positions in the towers. The building will be lighted by electricity, and warmed by low-pressure hot-water pipes and radiators. When completed the college will provide for 150 day students, and the total cost will amount to 25,000*l.* The buildings have been erected by Messrs. Oakley & Coulson, of Dudley, from competitive plans by Messrs. Crouch, Butler, & Savage, of Birmingham.

Appointments.

BRITISH MUSEUM.

Mr. Frederic George Kenyon, who since 1898 has been Assistant Keeper of MSS., has been appointed to succeed Sir Edward M. Thompson, retired, as Principal Librarian. Mr. Kenyon was elected a Fellow of Magdalen College, Oxford, in 1888, and is now an Honorary Fellow; he is a Fellow of Winchester College, a D.Litt. of Durham University, Ph.D. of Halle, corresponding member of the Academies of Bologna and Berlin, and six years ago was elected a Fellow of the British Academy.

CONGRESS OF ARCHÆOLOGY.

Mr. A. G. Chater, Secretary to the Earthworks Committee, has been elected (as from the close of the present Congress) to succeed Mr. Ralph Nevill, F.S.A., who, through ill-health, has resigned the post he has held fifteen years of Honorary Secretary to the Congress of Archaeological Societies in union with the Society of Antiquaries.

Sanitary and Engineering News.

SEWERS AND DRAINS IN THE CITY.

The annual report of the Engineer of the City of London, Mr. Frank Sumner, says that the length of new sewers constructed during the twelve months was 93 ft. 6 in.; 205-ft. run of brick sewer was demolished, 225 new gully grates, forty air grates, thirty-four earthenware pan gullies, 384 top boxes, three flushing boxes, and sixteen side entrance covers were fixed. The total number of side entrances to sewers existing in the City is now 207. The total number of gullies of all descriptions at the end of the year was 2,573, and of these 1,106 were iron pots, 687 were brick chambers, 286 were stoneware pans, 271 were brick shoots, and 223 were pipe shoots; 300-ft. run of brick invert of sewer was reconstructed, while three upcast pipe ventilating shafts were erected against the fronts of buildings, the surface sewer ventilators in the centres of the roadways adjacent to these being removed. The total number of such shafts now existing is 251, of which five have been renewed and

Digitized by Google

repaired during the year. Two new manholes were constructed for access to the sewers, and sundry repairs and small works were carried out in connexion with the reparation of the sewers and their appliances. Two hundred and seventy-three gullies were trapped during the year. Plans for the drainage of seventy-six premises were approved and the drains laid and inspected. The drainage of premises in Joiners' Hall-buildings, Upper Thames-street, was rearranged, and a portion of the ancient Walbrook sewer, into which they formerly drained, was demolished. The sewer beneath Barbican having been found to be in an exceedingly defective condition, plans and specifications were prepared, and tenders invited for its reconstruction at a lower level. The old sewer, which was of brick construction, 5 ft. by 2 ft. 6 in. by 2 ft. 6 in., was laid at an average depth of 14 ft. from the surface of the pavement, and the new one, 4 ft. by 2 ft. 6 in. by 2 ft. 3 in., is constructed at an average depth of 26 ft. from the pavement level.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Messrs. John Tanner & Son, slaters and plasterers, have removed from 470, Birkbeck Bank-chambers to 75, Church-street, King's-road, Chelsea, S.W.

PARISH CHURCH, WILLESDEN.

A fund is open for a restoration of St. Katharine's Chapel in St. Mary's parish church, Willesden. The fabric is mainly of the XIIIth and XIVth centuries, but the church has suffered much from subsequent alterations. The north aisle (pulled down in the days of the Reformation) and transept were rebuilt in 1872 by F. J. Tarver. There is a late Norman font, of Purbeck marble, square in shape, resting upon a middle and four corner shafts.

CONSISTORY COURT OF LONDON.

Having personally inspected the Church of St. Margaret, Lothbury, E.C., Dr. Tristram, Chancellor of the Diocese, has agreed, subject to the construction of a substantial physical division being erected between the proposed vestries, to grant a faculty for the building, on the north side of the church, of a choir vestry, with an enlargement of the clergy vestry, so as to adjoin the choir vestry. The estimated cost of the work is 850*l*. A faculty will be issued for the pulling down of the vestry, Holy Trinity Church, Kilburn, and replacing it with clergy and choir vestries and a schoolroom. The church was built for 1,160 seats, after designs by Francis, in the Decorated style.

A MEMORIAL OF TEMPLE BAR.

Elkington & Co., Ltd., have designed and executed, as an addition to the civic plate at the Mansion House, a silver inkstand which embodies a faithful model in all details of Wren's Temple Bar, which was taken down in the winter of 1878-9, and re-erected ten years subsequently at the entrance into Sir Henry Meux's grounds, Theobalds, Waltham Cross. In the interval the stones and statues lay in neglect in Farringdon Market. The Bar was built in 1670-2; John Bushnell carved the figures of James I., Queen Anne (of Denmark), Charles I., and Charles II.

STREET IMPROVEMENTS, NEWCASTLE.

A Local Government Board inquiry was held recently in the Council-chamber, Newcastle, before Major J. Stewart, R.E., to consider the Council's application for sanction to borrow 5,500*l*. for purposes of street improvement in Two Ball Lonnen, Fenham; 300*l*. for Hodgkin Park extension; 600*l*. for asphalting a footpath across the Town Moor; and 767*l*. for purposes of sewerage. The Deputy Town Clerk (Mr. H. Lee) and the City Engineer (Mr. C. R. S. Kirkpatrick) attended.

MIDDLESEX COUNTY COUNCIL.

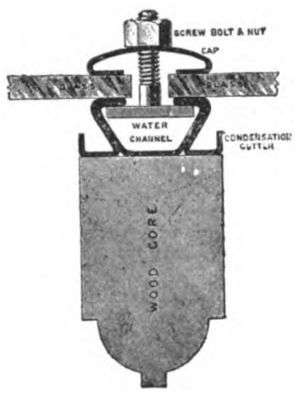
On July 22 the Council considered the adjourned report of the Guildhall Extension Committee, recommending that as the most convenient and economical course, and the one most tending towards ultimate efficiency the site of the Guildhall and that of the adjoining premises be cleared and new buildings constructed, at an estimated cost of 85,000*l*., or, if Portland stone was utilised, 90,000*l*. It may be remembered that the advice of Mr. J. S. Gibson, architect, was taken by the Committee, and he estimated that in the case of additions to the Guildhall the cost for the accommodation required would be 36,000*l*., or, alternatively, 43,000*l*. or 50,000*l*. A long discussion took place at the meeting on July 22, and an amendment was moved to the adoption of the report and recommendation that same be referred back to the Committee, with instructions to further consider and report upon adding to, improving, or altering the existing premises. A number of members objected to the pulling down of the present Guildhall, and urged that admittedly sufficient accommodation for the present could be obtained by adding to the existing buildings. If additional provision for the staff, etc., was required in the future, a policy of decentralisation to extend to other various towns in the county might be considered. A proposal to include in the amendment the rebuilding of the Guildhall having been negatived, the amendment as proposed was carried.

PROPOSED LEIPZIG CANAL.

An official report states that the scheme for giving the town of Leipzig a direct waterway to the sea, thus facilitating commerce with foreign countries, and not least with the United Kingdom, has during the past year developed considerably, after careful preparatory consideration extending over thirty years. A company, called the Leipzig Canal Company, has been formed to provide capital for the initial and technical expenses of a connexion between Leipzig and the River Saale.

GLAZING, VICTORIA AND ALBERT MUSEUM.

Messrs. W. E. Rendle & Co. send us the accompanying block showing the section of



their "Invincible" system as applied in the glass roofing at the Victoria and Albert Museum. The area of roof glazing carried out amounts to 63,000 sq. ft. The circular roofs were glazed with flat sheets of glass; the glass throughout being the ordinary plate, and the bars mounted on teak.

EXTENSION OF BIRMINGHAM.

The Duke of Northumberland's Committee of the House of Lords has passed the preamble of the Birmingham Extension Order, by which the district of Quinton is included in the city. The principal object which will be achieved by the annexation will be the disposal of the sewage of the district. Mr. H. E. Stilgoe, City Engineer and Surveyor of Birmingham, said that if a proper system of sewers was laid in Quinton without expense to the district houses would rapidly develop, but if a sewerage scheme were laid out by the rural district the rates would be so heavy that people would not embark in building speculations.

CASSIOBURY PARK BUILDING ESTATE, WATFORD.

The first portion of the Cassiobury Park Building Estate, embracing 109 freehold sites, was put up for sale by auction on Tuesday last. The lots have frontages to the Rickmansworth-road and to the newly-constructed roads called Cassiobury Park-avenue, St. Michael's-avenue, and the Shepherd's-road. The vendors are Messrs. Ashby & Brightman, and their intention is that the estate shall not be used for the erection of small property, but for detached houses of the minimum value of 600*l*. on certain sites, and 500*l*. on others, or 800*l*. a pair, semi-detached. There is to be allowed a liberal area of garden land to each house.

SALE OF THE ABBEY OF SOLESMES.

The celebrated Abbey of Solesmes is to be sold. Rumour says it is to be turned into a sanatorium, or an up-to-date hotel. M. Dujardin-Beaumetz has, it is true, announced that the abbey is included amongst the "Monuments Historiques" of France, and is therefore under the protection of the Government. All the ancient portions have been carefully classified, and thus future proprietors will be bound by certain restrictions. But it remains to be seen whether this measure is sufficient to preserve the fine abbey from the vandalism of speculators.

Law Reports.

APPEAL BY AN ARCHITECT.

In the Court of Appeal, before Lords Justices Vaughan Williams, Moulton, and Buckley, on the 26th inst., the hearing was concluded of the case of the Ham Hill and Doulting Stone Company, Ltd., *v.* Rees and others, on the appeal of the defendant Rees against a judgment of Mr. Justice Ridley at the Taunton Assizes.

In this case the plaintiffs, quarry owners and stone merchants at Norton, Stoke-under-Ham, Somerset, brought the action to recover 196*l*. 7s. 4d., balance of the price of stone supplied for building the Tabor Methodist Chapel at Maesteg, Glamorganshire. Plaintiffs sued the defendant, Mr. W. Beddoe Rees, the architect of the chapel, and alternatively the Building Committee of the chapel. Mr. Justice Ridley gave judgment for the plaintiffs against Mr. Rees for the sum claimed, with costs, and for the other defendants, with costs. Hence the present appeal of Mr. Rees, and there was also a cross-appeal by the plaintiffs against the refusal of the learned judge to direct that Mr. Rees should repay the plaintiffs the costs of the other defendants.

Mr. Clavell Salter, K.C., and Mr. J. A. Hawke appeared for Mr. Rees; and Mr. Foote, K.C., and Mr. Holman Gregory for the plaintiffs.

Mr. Salter said that the question in the case was whether Mr. Rees, the architect, had made himself personally liable to pay for the stone in question. The matter arose, as the plaintiffs said, altogether on the correspondence, but, as he maintained, partly on the documents and partly on interviews. The building contract, to which the plaintiffs were not parties, but in which Mr. Rees was named the architect, was for building the chapel for a sum of 3,443*l*.

Lord Justice Moulton asked if there was a formal contract between the plaintiffs and anyone.

Mr. Salter said there was correspondence between Mr. Rees on the one hand, and the plaintiffs on the other, as to the latter supplying the necessary stone for the building of the chapel. That correspondence went down to a certain point, namely, August 9, 1906. At that point there was said to be a contract between the plaintiffs and Mr. Rees. That was a contract which referred upon its face to a projected interview in a few days' time, and there was, in fact, an interview on August 14.

In reply to Lord Justice Buckley, the learned counsel said that his contention was that the persons liable in any view was the Building Committee. The chapel had been built and the stone used in the building of it. The money was sent to the plaintiffs as from the builder. Plaintiffs refused to take the money because costs in the action had been incurred. Mr. Justice Ridley had held that there was a written contract, and that under the law governing such contracts evidence was not admissible to disprove the liability of the person—in this case Mr. Rees—who was liable on the face of the contract. In other words, the learned judge had held that there was a written contract, and it was therefore immaterial to consider the interviews. His (counsel's) submission was that the contract in the correspondence was not the contract at all, the real contract being a verbal contract made at the interview of August 14 with disclosed principals, namely, the Building Committee.

Lord Justice Moulton: Mr. Justice Ridley has held that because there is a written contract in the letters it is impossible in law for the stone to have been delivered under the terms of a subsequent verbal contract.

Mr. Salter said that he was afraid the plaintiffs would have to go as far as that to support their judgment. The real point was whether the contract was made on behalf of disclosed principals. He submitted that the plaintiffs knew that Mr. Rees was the architect, and that he was acting for the building owners. That being so, there was a clear case that Mr. Rees was not the contracting party, but that the Building Committee was.

Mr. Foote, on behalf of the plaintiffs, supported the judgment of Mr. Justice Ridley. He said that, although plaintiffs knew that Mr. Rees was the architect, that gentleman did not disclose to them his principals, and there was nothing to show that Mr. Rees said or indicated that he was not going to be personally liable. On the other hand, Mr. Rees used his own name, and gave the plaintiffs no other name except that of the builder. There was no reference in the correspondence to a Committee until March 7, 1906, which was the first time that the plaintiffs were made aware that Mr. Rees was acting for undisclosed principals, who might possibly be a fluctuating

Digitized by Google

body. The real question was whether Mr. Rees said or did anything to limit his liability. On August 9 he entered into a contract, and he submitted that he was liable under the terms of that letter.

Mr. Holman Gregory, following on the same side, contended that the plaintiffs were entitled to go against the person from whose mouth the order came, viz., Mr. Rees. If Mr. Rees had no authority to make the contract, then he submitted that it was his own personal contract.

Without calling upon counsel for the appellant to reply, Lord Justice Vaughan Williams, in giving judgment, said that in his opinion it was a very unsatisfactory case. There was only one question which they had to decide, and that was whether the defendant, Mr. Rees, was liable on the contract as being a party to it. In his opinion Mr. Rees was not a party to the contract. If the evidence was looked at, it would be found that, when the negotiations first began, Mr. Rees told the plaintiffs that he was acting as the agent of the Committee. It was not said that there was no such thing as the Committee of the chapel, but it was plain that there was a Committee of the chapel. It was clear that Mr. Rees was acting from first to last as the agent of the Committee of the chapel. In these circumstances, he held that Mr. Rees was not liable.

Lords Justices Moulton and Buckley concurred, and the appeal was accordingly allowed, and judgment entered for Mr. Rees with costs, both on the appeal and in the Court below.

Plaintiffs' cross-appeal was also dismissed with costs.

CONTRACTORS' CLAIM AGAINST ARCHITECT.

MR. MUIR MACKENZIE, the Official Referee, on the 22nd inst., as briefly reported in the *Builder* of last week, delivered judgment in the case of Bankart *v.* John Tanner and Sons.

In this case the plaintiff, Mr. G. P. Bankart, an architect and decorative draughtsman, brought the action against the defendants, a firm of plastering contractors, for 1,000*l.* for work done, and judgment was given for the plaintiff for that amount, subject to the decision on the defendants' counter-claim, by which the defendants claimed damages against Mr. Bankart for the detention of certain scaffolding used in relation to the decoration of the Victoria and Albert Museum, South Kensington.

(The facts of the case have been fully reported in the previous issues of the *Builder*.)

Mr. Muir Mackenzie, in delivering judgment, after stating the facts, said the first question for his consideration was, was there a contract between the plaintiff and the defendants as regarded the scaffolding? But for the admissions on both sides that there was such a contract he should have held very decidedly that there was not. The document of April 20 directed the parties to enter into a contract, but they declined to do so. Defendants had reluctantly acquiesced in the directions of Sir Aston Webb. The plaintiff throughout had declined to admit any obligation of a contractual nature towards the defendants. If the essentials of an implied contract were mutuality and consent, he could not conceive a case in which there was less mutuality and less assent. The defendants took the risk on the contract as admitted of the artist being a slow worker, and of the architect changing the designs and making many alterations. They could not impose upon the plaintiff any special time within which his work of preparing models was to be done. If they had desired to do so they should have made a contract with him as they were directed to do. He thought the defendants had been kept waiting, and Sir Aston Webb was kept waiting, as the letters showed; but that was not sufficient to enable the defendants to establish their counter-claim. Defendants, to succeed, must show that they were kept waiting an unreasonable time by reason of the breach of contract. As regarded the defendants' alternative claim as to there having been a hire of the scaffolding, that could only be established if one substantiated the use of the scaffolding in circumstances in which an agreement to pay for its use could be implied, and he could not conceive circumstances which were less consistent with any such agreement. Plaintiff claimed that he had the right to use the scaffolding, and he repudiated any clam for the hire of it. He (Mr. Mackenzie) held that there was no agreement to pay hire, and he dismissed the counter-claim with costs.

Order accordingly.

Mr. Radcliffe, K.C., and Mr. Francke appeared for Mr. Bankart; and Mr. Greer and Mr. Roche for Messrs. Tanner.

BUILDER'S CLAIM AGAINST THE FULHAM COUNCIL.

AT the West London County Court recently, before his Honour Sir William Selfe, Mr. Robert Benjamin Mason, of Hesketh-avenue, Fulham, sued the Fulham Borough Council for 55*l.* 14s., half the cost of a party wall at Fulham-road. Mr. W. Compton Smith was counsel for the plaintiff, and Mr. Mackenzie represented the defendants.

The plaintiff's case was that in 1895 he was building in the Fulham-road, and was in possession of a plot of land, on one side of which was an old wall. The wall separated his land from premises belonging to the Commissioners of the Free Library for Fulham, the predecessors of the present defendants. In due course, the plaintiff desired to build, and pulled down the old wall, replacing it by a new wall of a more substantial character, this being done under the supervision of the Borough Surveyor and the surveyor of the estate. A certificate was given that the party wall was worth 111*l.* 9s. Subsequently the plaintiff agreed to sell the property to a Mr. Slater, and, as the Fulham Council were using the party wall, the plaintiff claimed the half value of the said wall, it being contended that, under sect. 95 of the London Building Act, the defendants were liable, as adjoining owners, to contribute to the wall which had been built.

In answer to his honour, the plaintiff said that when he conveyed the premises to Mr. Slater he only conveyed the freehold, which he had acquired from the Purey Cross Estate, which did not include his claim for the half of the party wall.

The defence was that the agreement of 1896 come to between the commissioners and Mr. Mason was void, inasmuch as it was contrary to the law of perpetuity, as it provided for no definite term of years over which the payment for the wall was to take place. The agreement, it was urged, stipulated that the payment was to be made to Mr. Mason or his successors in title at any time when the commissioners decided to use the wall. Further, it was contended that they had exercised that option, and on their giving notice under the Building Act to use the wall, they paid to Mr. E. Galsworthy, who is the present owner of the property, the 55*l.* 14s. specified.

His honour gave judgment for the defendants, with costs. Mr. Compton Smith asked for leave to appeal, which was granted.—*Standard*.

Patents.

APPLICATIONS PUBLISHED.*

14,336 of 1908.—Thomas Daniel Kelly: Manufacture of cement.

15,507 of 1908.—William Henry Harvey: Covering plates for roofs and other surfaces.

16,118 of 1908.—Sigmund von Medevecsky: Slabs or blocks composed of concrete and wire netting.

17,705 of 1908.—James Knutton and Edwin Frederick Goodall and William George Moore: Combination tool for use as a wrench, pipe-cutter, spanner, vice, die holder for screwing, and the like.

19,628 of 1908.—Bernard Robert Parkinson and Henry Woodall: Securing the ends of service pipes to mains.

20,132 of 1908.—Charles Southwell: Construction of pivotal joints of casement fastening levers.

24,034 of 1908.—Todd Churchill Woodworth: Nut locks.

26,455 of 1908.—Vereinigte Porphyr Werke G.m.b.H.: Method of manufacturing a coating for walls, floors, and the like.

28,140 of 1908.—Wheatley Bovill and Arthur John Bovill: Locks.

4,670 of 1909.—Florence Belle La Belle: Means for opening and closing fanlights.

8,729 of 1909.—Christian Dietz: Stays and fastenings for hinged windows.

9,336 of 1909.—Morris Jacobs: Means for locking nuts and the like.

11,374 of 1909.—John Peart: Glazing devices.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 13.—By HARRY H. ARNOLD (at Tonbridge).
Sundridge, Kent.—Winkhurst Green Farm, 100 a. 0 r. 5 p., f. (including timber) £2,435
Goldencrofts Cottages 175
Chevening, Kent.—Bushes Farm, 93 a. 0 r. 8 p., f. (including timber) 2,102
Chiddingstone, Kent.—Four cottages, f. 480
Winkhurst Wood, 55 a. 3 r. 9 p., f. 775

July 14.—By NASH, SON, & ROWLEY (at Royston).
Ashwell, Herts.—Hare Park Farm, 149 a. 3 r. 8 p., f. and c. 2,650

By SAMUEL ALDRED & SON (at Yarmouth).
Martham, Norfolk.—Damgate and Cess Farms, 231 a. 3 r. 24 p., f. £4,820
Acle, Norfolk.—Ash Tree Farm, 20 a. 2 r. 2 p., f. 600

By ESCRITT & BARRELL (at Boston).
Thornton-Le-Fen, Lincs. — Freehold farm, 62 a. 1 r. 7 p. 2,500
Sutterton, Lincs.—Small holding, 22 a. 3 r. 2 p., f. 1,400
Leake, Lincs.—Pasture land, 4 a. 3 r. 30 p., f... 200

July 15.—By R. & C. SNELL (at Axminster).
Musbury, Devon.—Knights Farm, 77 acres, f.. 2,890

July 16.—By GEO. S. ANDREWS (at East Dereham).
Beeston, Nolfolk.—Occupation Farm, 106 a. 0 r. 10 p., f. and c. 1,650

July 17.—By ABREY & GARDNER (at Colchester).
Peldon, Essex.—Harveys Farm, 60 a. 0 r. 12 p., f. 1,000

By THORNBORROW & Co. (at Carlisle).
St. Cuthbert, Cumberland.—Scalescough Farm, 111 a. 3 r. 22 p., f. and c. 4,150
Wragmire Moss cottage and 14 a. 1 r. 5 p., f. 307

By T. W. GAZE & SONS (at Norwich).
Moulton St. Michael, Norfolk.—White House Farm, 66 a. 1 r. 7 p., f. and c. 700

By ESCRITT & BARRELL (at Grantham).
Corby, Lincs.—Corby Heath Farm, 342 a. 3 r. 36 p., f. 7,250
Colsterworth, Lincs.—Meadow land, 14 a. 0 r. 34 p., f. 200

July 19.—By WM. HOUGHTON.
Alton, Hants.—Whitedown-la., freehold hop and pasture land, 27 a. 0 r. 37 p. 1,000
Leyton.—7, Gurney-ter., f., y.r. 20*l.* 365
Dalston.—57, 58, and 59, Regents-row, u.t. 34 yrs., g.r. 8*l.* 5s., w.r. 88*l.* 8s. 325
Bow.—80 Malmesbury-rd., u.t. 37¼ yrs., g.r. 4*l.*, w.r. 36*l.* 8s. 160

By KEMSLEY.
Millwall.—40 to 46 (even) Mellish-st., u.t. 49 yrs., g.r. 11*l.*, w.r. 140*l.* 8s. 490
13, 15, 21, 23, 33, and 35, Mellish-st., 22 to 28 (even), Malabar-st., u.t. 26 to 45 yrs., g.r. 27*l.* 5s., w.r. 314*l.* 12s. 710
West Ham.—181, Upton-la. (s.), f., e.r. 30*l.* 190

By PRICKETT & ELLIS.
Brondesbury.—43, Buckley-rd., u.t. 78 yrs., g.r. 10*l.* 10s., e.r. 65*l.* 525

By S. WALKER & SON.
Fleet-st.—Salisbury-sq. (The Salisbury Hotel), f.g. rents 728*l.*, reversion in 51½ yrs. 20,000
1 to 6, Dorset-buildings, f.g. rents 640*l.*, reversion in 45½ and 46½ yrs. 16,900
16, Dorset-st., f.g.r. 160*l.*, reversion in 45½ yrs. 4,500
15, Dorset-st., f.g.r. 150*l.*, reversion in 47½ yrs. 5,000
22, Whitefriars-st., f.g.r. 100*l.*, reversion in 7½ yrs. 6,500
22, Whitefriars-st., 21 and 22, Primrose-hill (The Harrow, p.h.), area 1,080 ft., f., y.r. 90*l.* 2,450
19 and 20, Primrose-hill, area 1,300 ft., y.r. 85*l.* 1,150

By THORNBORROW & CO., (at Kirkby Stephen).
Brough, Westmorland.—Mount Pleasant Farm, 163 a. 3 r. 7 p., f. 2,225

July 20.—By H. J. BROMLEY.
Sydenham.— 6, Myrtle-gr., f., e.r. 27*l.* 6s. 100

THOS. DIXON & SONS.
Horton, Bucks.—Milton Lodge and 3 acres, f... 1,700
Chelsea.—25, Walpole-st., u.t. 31 yrs., g.r. 5*l.*, e.r. 90*l.* 620

By HASLETT & DEFFEE.
Stoke Newington.—Matthias-rd. (Army and Navy, p.h.), f.g.r. 50*l.*, reversion in 34 yrs.. 1,240
South Kensington. — Earl's Court-rd. (Earl's Court Tavern), f.g.r. 10*l.*, reversion in 51 yrs. 500
Childs-st., f.g. rents 6*l.*, reversion in 46 yrs... 155
Earl's Court-rd., f.g.r. 5*l.*, reversion in 51 yrs. 170

By HOBSON, RICHARDS, & Co.
Notting Hill.—87, Oxford-gdns., u.t. 66 yrs., g.r. 10s., e.r. 80*l.* 460

By DEBENHAM, TEWSON, RICHARDSON, & Co.
South Kensington.—3, 5, and 7, Earl's Court-rd. (s.), f., y.r. 270*l.* 6,300
Camberley.—Tekells Castle Estate, plot of land, f. 400

By ARTHUR RUTTER, SONS, & Co. (at Ipswich).
Clopton, Suffolk.—Shop Farm, 82 a. 0 r. 5p., f. 950

By MOORE, GARRARD, & SON (at Ipswich).
Laxfield, Suffolk.—Wood Farm Estate, 502 a. 1 r. 5 p., f. 8,400
Mills Farm, 60 a. 1 r. 29 p., f. 1,400

By J. W. FLORANCE, FOSTER, & BARBER (at Birmingham).
Lapworth, Warwick.—Ardenhill and 82 a. 3 r. 8 p., f. 6,000

By R. L. ASHTON (at Bideford).
Parkham, Devon.—Bocombe Farm, 108½ acres, f. and l. 2,650

July 21.—By WALTON & LEE.
Creeksea, Essex.—The White House and 17 a. 1 r. 3 p., f. 2,000

By T. WOODS.
Isleworth.—70, 74, and 76, St. John's-rd., f., y.r. 98*l.* 10s. 1,200
Newton-rd., plot of land, f. 155
Hounslow.—58 to 64 (even), Cromwell-rd., f., w.r. 101*l.* 8s. 1,005

By HAMPTON & SONS.
Kensington.—35, Holland villas-rd., u.t. 42 yrs., g.r. 25*l.*, y.r. 140*l.* 1,450

By JAMES ELEY (at Boston).
Kirton, Lincs.—Close of arable land, 4 a. 3 r. 34 p., f. 330

By KEMSLEY (at Romford).
Romford.—28, Market-pl. (s.), f., y.r. 68*l.* 1,000
Kings Arms-yard, Mineral Water Factory, f., y.r. 55*l.* 700

By DOLMAN & PEARCE (at Camden Town).
Kentish Town.—12, Maitland Park-rd., u.t. 42 yrs., g.r. 5*l.*, e.r. 46*l.* 320

July 22.—By C. C. & T. MOORE.
Whitechapel.—114, High-st. (s.), f., y.r. 160*l.* .. 3,000
Hackney.—108A, Pritchards-rd., f., e.r. 70*l.*.... 575
10, Wharf-rd., f., gross rental 196*l.* 6s..... 400
98 and 100, Pritchards-rd., f., y.r. 103*l.* 10s... 750

RECENT SALES.—*Continued on page* 142.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments, xvi.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

JULY 31. — **Glasgow.** — LAYING-OUT LAND.—**The Patrons of the Royal Incorporation of Hutchesons' Hospital in the City of Glasgow invite competitive designs for laying-out for feuing and building their lands of Thornliebank, in the Parish of Eastwood and County of Renfrew, near the City of Glasgow. The terms and conditions of the competition, and, upon deposit of 3*l.* 3s., skeleton plans showing the situation and boundaries of the different portions of the lands, may be had from the Chamberlains of the Hospital, Messrs Hill & Hoggan, 194, Ingram-street, Glasgow, with whom designs must be lodged not later than July 31, 1909. Premiums of 100*l.*, 75*l.*, 50*l.*, and 25*l.* respectively will be awarded.**

JULY 31. — **Reading.** — OFFICES.—The Berkshire C.C. invite competitive designs for proposed new offices, committee-room, etc., at the Forbury, Reading. Premiums of 100*l.*, 75*l.*, and 50*l.* Particulars from Mr. J. Fred. Hawkins, County Surveyor, Bank-chambers, Cross-street, Reading. Deposit of 1*l.* 1s. For further particulars see advertisement in our issue of April 17.

AUGUST 5.—**Cardiff.**—CASKET.—Tenders are invited for a silver-gilt casket, to be presented to the Right Honourable Viscount Tredegar, a copy of the specification of which may be obtained from Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50, 25, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

Contracts.

BUILDING.

AUGUST 2.—**Ballintemple.**—SCHOOL.—Erection of a new school and teacher's residence at Ballintemple, Garvagh, Co. Derry. Plans, etc., can be seen at the office of Mr. Wm. O'Kane, Solicitor, Garvagh.

AUGUST 2. — **Bishop Auckland.** — WALL.—Bishop Auckland U.D.C. invite tenders for pulling down and rebuilding wall in Cricket Field-road, supplying and erecting iron palisading where necessary, building of turnstile house, etc.; also for supplying and laying flags, channel, and making roadway. Plan, etc., may be seen, and further particulars obtained, on application to the surveyor.

AUGUST 2. — **Clitheroe.**—ALTERATIONS.—For works in connexion with alterations to Moor-lane premises, for the Clitheroe Co-operative Society. Plans, etc., can be obtained at the Society's office, 2, Moor-lane. Mr. W. J. Povey, Secretary.

AUGUST 2. — **Keighley.** — SHED AND WAREHOUSE.—Shed and warehouse in West-lane, Keighley. Names and addresses to Messrs. John Haggas & Sons, architects, North-street, Keighley.

AUGUST 2. — **Orchardtown.** — HOUSE, ETC.—Estimates are wanted for the mason, carpenter, slater, and plaster works of the reconstruction of dwelling-house and extension of steading at the Farm of Allathan (Mr. George Watson, tenant), situated about 1¼ miles from Logierieve Railway Station. Plans and specifications may be seen with the tenant. Mr. Thos. Fotheringham, Factor, office, Gordon's College, Aberdeen.

AUGUST 2.—**Risca.**—GOODS SHED.—Great Western Railway Directors invite tenders for the erection of a new goods shed at Risca, Monmouthshire. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer at Newport Station.

AUGUST 3.—**Bridlington.**—HOUSE, ETC.—Tenders are required for the erection and completion of house and premises in Medina-avenue, for Mr. H. Rudd. Drawings, etc., may be inspected at the office of Mr. J. Earnshaw, architect, Carlton House, Bridlington.

AUGUST 3.—**Keighley.**—PARK SHELTER.—Tenders are invited for the pulling down of the tramways office, Town Hall-square, and re-erecting same as a park shelter. Full particulars from Mr. William Fowlds, Borough Engineer.

AUGUST 3. — **Manchester.** — PLASTERING.—The Sanitary Committee invite tenders for plastering the exterior of cottages on the Blackley Estate. Specification may be obtained at the office of the City Architect, Town Hall upon payment of 10s. 6d. Cheques or postal orders to be made payable to the order of "The Corporation of Manchester."

AUGUST 4.—**Bailiffe Bridge.**—ADDITIONS TO SHED.—Masons', joiner's, iron and steel work, plumber's and glazier's, slater's, concretor's, and patent glazier's work required in additions to weaving shed at Victoria Works, Bailiffe Bridge. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh, F.S.I., & Graham Nicholas, F.R.I.B.A., architects, Museum-chambers, Halifax.

AUGUST 4.—**Barnard Castle.**—AUCTION MART.—Erection of a new auction mart at Barnard Castle. Plans, etc., may be seen, and particulars obtained, at the office of Mr. F. H. Livesay, architect and surveyor, Newgate-street, Bishop Auckland.

AUGUST 5. — **Aberaman.**—ALTERATIONS.—Alteration and renovation of Albion Hotel, Aberaman, Aberdare, for Messrs. W. W. Nell, Ltd., brewers, Cardiff. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect, Treharris.

AUGUST 5. — **Bangor.** — HOME.—Shankhill-road Mission Committee invite tenders for the erection of new holiday home near Bangor. Plans, etc., may be seen with the architect, Mr. W. C. Maxwell, 13, Lombard-street, Belfast.

AUGUST 5.—**Holyhead.**—NEW ENGLISH WESLEYAN CHAPEL.—The Trustees invite tenders for new chapel and school. Plans can be seen, and bill of quantities obtained, at the Gasworks Office, Holyhead, on payment of a deposit of 10s. 6d.

AUGUST 5. — **Penyrheol.**—HOUSES.—Erection of eighteen houses at Penyrheol, near Caerphilly, for the Bargoed and Abertridwr Building Club No. 2. Plans, etc., can be seen at office of Mr. P. Vivian Jones, P.A.S.I., architect and surveyor, Hengoed.

AUGUST 5. — **Sheffield.** — TRAMWAY DEPÔT.—The Tramways Committee invite tenders for the following work required in the erection of new central tramways depôt at Shoreham-street and Leadmill-road, viz.:—(1) General building work; (2) structural steelwork. Drawings may be seen, and bills of quantities, etc., obtained, on application to the City Architect, Town Hall, Sheffield.

AUGUST 5. — **Templebreedy.** — WAR SIGNAL STATION.—The Board of public Works invite tenders for the erection and completion of a war signal station and an auxiliary look-out station at Templebreedy, Co. Cork. The plans and specification can be seen at the office of the carpenter in charge, Queen's College, Cork, where forms of tender can be had.

AUGUST 6. — **Cassop Colliery.** — ALTERATIONS.—Alterations to the Black Bull Inn, Cassop Colliery, for the N.E. Breweries, Ltd. Plans, etc., may be seen at the Black Bull Inn.

AUGUST 6. — **Laverton Dallowgill.** — SCHOOL WORKS.—The West Riding Education Committee invite tenders for builder, etc., works at Laverton Dallowgill Provided School (alterations and additions). Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 6. — **Rawmarsh, etc.** — SCHOOLS.—The West Riding Education Committee invite whole or separate tenders for the following works:—Rawmarsh, Ryecroft New School; Shitlington, Netherton New School; Barnoldswick, Rainhall-road Provided School—alterations, etc. (builder, joiner, plasterer, plumber, slater, painter). Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 6. — **Shitlington.** — SCHOOL.—The West Riding Education Committee invite whole or separate tenders for Shitlington, Netherton New School. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 6. — **Willington.**—ALTERATIONS.—Alterations to the Blue Bell Inn, Willington, Durham, for the N.E. Breweries, Ltd. Plans, etc., may be seen at the Blue Bell Inn. Mr. T. H. Murray, architect and surveyor, Consett.

AUGUST 7.—**Bethesda.**—SCHOOL ADDITIONS, ETC.—Additions and improvements to the Bethesda County School. Plans, etc., to be seen at the office of Mr. Rowland Lloyd Jones, M.S.A., architect, 14, Market-street, Carnarvon.

AUGUST 7. — **Chatham.** — ADDITIONS TO HOME.—Additions to Royal Sailors' Home, Chatham. Plans, etc., to be seen at the office of the architect, Mr. George E. Bond, 384, High-street, Rochester. A deposit of 1*l.* 1s. for bill of quantities will be required.

AUGUST 7.—**Duloe.**—FARM BUILDINGS.—The Small Holdings Committee of the Cornwall C.C. invite tenders for the erection and completion of a farm-house, farm buildings, and water supply at Blackdown, Duloe, near Liskeard. For plans, etc., apply to the County Land Agent, Public Rooms, Truro.

AUGUST 7.—**Kirton Lindsey.**—SCHOOL ENLARGEMENT.—Enlargement of Manton School, Kirton Lindsey. Specifications in accordance with County Council requirements. For particulars apply to Rev. G. Norwood, Manton Rectory, Kirton Lindsey.

AUGUST 7.—**Oswestry.**—WALL, ETC.—The T.C. of the Borough of Oswestry invite tenders for the reconstruction of a portion of the front wall and the re-roofing of front portion of the Powis Hall. Plans, etc., may be seen, and bill of quantities, etc., obtained, on application to Mr. G. William Lacey, M.Inst.C.M.E., Borough Engineer and Surveyor, Guildhall, Oswestry.

AUGUST 7. — **Staincliffe.** — HOUSES.—Tenders required for six houses at Staincliffe Plans, etc., at offices of Messrs. John Barton & Son, architects and surveyors, Halifax-road, Dewsbury.

AUGUST 7. — **Walker.** — WALL, ETC.—Newcastle-upon-Tyne Corporation invite tenders for the erection of a stone dwarf wall and ornamental wrought-iron railing at Lady Stephenson Library, Walker. On payment by the contractor of 10s. to the City Treasurer, Town Hall (which sum will not be returned), specification, etc., can be obtained, and drawing inspected, at the City Engineer's Office, Town Hall, Newcastle-upon-Tyne.

AUGUST 9. — **Caerau.** — HOUSE. — A steward's dwelling-house adjoining club premises and for additions and alterations to the club building, for the Trustees of the Constitutional Club, Caerau, near Bridgend. Plans, etc., may be seen (on payment of a deposit of 1*l.* 1s.) at the office of Mr. J. R. Snape, 3, Talbot-street, Maesteg, solicitor to the trustees.

AUGUST 9. — **Merthyr Vale.**—COTTAGES.—Erection of five pairs of semi-detached cottages at Merthyr Vale for the Merthyr Vale Building Club. Plans, etc., may be seen at the offices of Mr. William Dowdeswell, architect, Treharris.

AUGUST 9.—**Uxbridge.**—LAVATORY ACCOMMODATION.—The Guardians invite tenders for additional lavatory accommodation in the aged men and women's quarters at the Workhouse. Specification can be seen at the offices of the Guardians' Surveyor, Mr. Wm. L. Eves, 54, High-street, Uxbridge.

AUGUST 10.—**Newcastle-on-Tyne.**—EXTENSION OF COLLEGE.—Newcastle-upon-Tyne Education Committee invite tenders for extensions to Rutherford College. Plans, etc., at the Education Offices, Northumberland-road. A copy of the bills of quantities may be obtained by depositing 2*l.* 2s.

AUGUST 10. — **Pontypridd.**—CATTLE MARKET.—Construction of a cattle market at Pontypridd for the Pontypridd Market Company. Plans, etc., can be seen at offices of Messrs. A. O. Evans, Williams, & Evans, architects, Pontypridd.

AUGUST 12. — **Quaker's Yard.** — COTTAGES.—Erection of twelve or more cottages at Quaker's Yard for the Quaker's Yard Model Cottage Building Club. Plans, etc., can be seen, and full particulars obtained, at the office of the architect, Wern-crescent (opposite P.O.), Nelson.

AUGUST 12. — **Bedlinog.** — CHURCH.—Erection of church at Bedlinog, for the Vicar, Rev. Richard David. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect, Treharris, and quantities obtained on the deposit of 1*l.* 1s.

* AUGUST 12.—**Denton, Kent.**—SCHOOL.—The Kent Education Committee invite tenders for the erection of a school for 250 children. See advertisement in this issue for further particulars.

AUGUST 13. — **Nantyglo.**—HOSPITAL.—Tenders are invited for the erection of a cottage hospital and its appurtenances, to be erected at Nantyglo, Mon. Drawings, etc., may be inspected at office of Mr. N. Gasenius Lewis, F.I.A.S., architect and surveyor, Abertillery. Bills of quantities, etc., will be supplied on payment of a deposit of 2*l.* 2s.

AUGUST 14.—**Erith.**—PORTER'S LODGE.—A porter's lodge at Erith Sanatorium, Little Heath, Belvedere, for the Erith U.D.C. Plans, etc., may be seen, and copies of the bills of quantities, etc., obtained from the Surveyor, Council Offices, upon deposit of 1*l.*

AUGUST 21.—**Eccles.**—SCHOOL.—The Eccles Education Committee invite tenders for the erection of a new secondary and technical school to be erected at Park-road, Monton. The plans may be seen, and bills of quantities obtained at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 3*l.* A copy of the plans may also be seen at the Education Office, Town Hall, Eccles.

AUGUST 21.—**Preston.**—OFFICES.—Lancashire C.C. Finance Committee invite tenders for taking down the existing buildings between the present County Offices in Fishergate-hill and the County Constabulary Offices in Jordan-street, Preston, and erecting new offices on the site thereof. The plans may be seen, and bills of quantities may be obtained, at the office of the County Architect, Mr. Henry

Digitized by Google

Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 3l.

✱ AUGUST 25.—**Chatham.**—SCHOOL.—The Chatham Education Committee invite tenders for an elementary school at Luton, Chatham. See advertisement in this issue for further particulars.

✱ AUGUST 23.—**Eastleigh.**—SCHOOL.—The Southampton C.C. invite tenders for Elementary School at Eastleigh. See advertisement in this issue for further particulars.

✱ AUGUST 31. — **Halstead.** — SCHOOL.—The Essex Education Committee (Halstead District Sub-committee) invite tenders for an elementary school at Halstead. See advertisement in this issue for further particulars.

NO DATE. — **Acrefair.**—HALL.—Hall adjoining the Trinity Presbyterian Church, Acrefair, near Ruabon. Names to Messrs. Dickens-Lewis & Haymes, architects, Talbot-chambers, Shrewsbury, together with a deposit for 2l. 2s.

NO DATE. — **Cawood.** — RECONSTRUCTION.—Reconstruction of the Thompson's Arms, Cawood. Names to Messrs. Samuel Jackson & Son, architects, 11, Tanfield-chambers, Bradford.

NO DATE. — **Coxlodge, Gateshead, and Long Benton.**—CLUB, HALL, AND COTTAGES.—The erection of social club at Coxlodge, picture hall at Gateshead, and block of cottages at Long Benton. Names to Mr. Henry Gibson & P. J. Steinlet, architects, 56, Camden-street, North Shields, together with a deposit of 2l. 2s.

NO DATE.—**Creswell.**—CLASSROOMS.—The Managers of the Creswell Church of England Schools invite tenders for the erection of three additional classrooms to the existing infants' schools at Creswell. Bills of quantities will be furnished on application to Mr. Percy B. Houlton, architect, Furnival-chambers, Chesterfield.

NO DATE. — **Cudworth.** — PLASTERING. — To let, labour only, the plasterer's work of seventy houses and new offices. Apply Messrs. Salmon & Co., contractors, Cudworth.

NO DATE.—**Filey.**—HALL.—Erection of a Masonic Hall at Filey. Names, together with a deposit of 1l., to Mr. Arthur Easton, architect, 7, Land-of-Green-Ginger, Hull.

NO DATE. — **Hereford.**—SCHOOL WORKS.—Tenders are desired for remodelling and extending the boys' and girls' departments, for the Managers of Blue Coat School, Hereford. Apply in writing for quantities to Mr. W. W. Robinson, architect, Hereford.

NO DATE.—**Hull.**—SMOKE-HOUSE.—Mr. Ernest Whitlock, architect and surveyor, 26, Scale-lane, Hull, invites single tenders for the erection of smoke-house, etc., in Eastbourne-street, for Messrs. Blazier & Carr.

NO DATE. — **Keighley.**—CHURCH.—Erection of St. James's Church, Cross Roads, Keighley. The drawings may be seen, and quantities obtained, at offices of Messrs. J. B. Bailey & Son, architects, 3, Scott-street, Keighley.

NO DATE. — **Pulham St. Mary Magdalen School, Norfolk.** — ALTERATIONS, ETC. — Apply to Messrs. Lacey & Upcher, architects and surveyors, 6, Upper King-street, Norwich, where plans, etc., can be seen, and copies of quantities, etc., obtained.

NO DATE. — **Summerseat.**—HOUSES.—Tenders are wanted for the whole of the work required in the erection of four houses in Railway street, Summerseat, for the Summerseat and Brookbottom Co-operative Society, Ltd. For quantities address Mr. J. R. Warburton, architect, Holcombe, Ramsbottom.

NO DATE. — **Sutton.** — RESIDENCE.—Tenders are required for the erection of a detached residence at Sutton. Messrs. Moore & Crabtree, architects, Cooke-street, Keighley.

ENGINEERING, IRON, AND STEEL.

AUGUST 3.—**Great Sutton.**—BRIDGE WORKS.—Tenders are invited for reconstructing and widening Damage County Bridge No. 2 (Arch) at Great Sutton. Plans, etc., can be seen, and quantities obtained, at office of Mr. Harry F. Bull, County Bridgemaster, The Castle, Chester.

AUGUST 3.—**Kinson.**—BRIDGE.—Poole R.D.C. invite tenders for the building of a brick bridge at Millhams Ford, in the Parish of Kinson, Dorset. Plans, etc., may be seen at the office of Mr. R. T. S. Seymour, District Surveyor, Wimborne Minster.

AUGUST 4. — **London.** — STEEL SLEEPERS.—South Australian Government invite tenders for the supply and delivery of steel railway sleepers. Copies of specification, etc., can be obtained, on payment of 1l., from the office of the Agent General for South Australia, 28, Bishopsgate-street Within, London, E.C.

AUGUST 5.—**Milford.**—GASHOLDER.—Milford Haven U.D.C. invite tenders for the supply and erection at their Gasworks of a gasholder and steel tank. Full particulars may be obtained from Mr. R. J. Calderwood, Gas and Water Manager to the Council.

AUGUST 5.—**Sheffield.**—HEATING WORKS, PROPOSED NEW CAR DEPOT, SHOREHAM-STREET. — The Tramways Committee invite tenders for the installation of heating and hot-water supply apparatus at the above. Specifications, etc., may be obtained on application to the City Architect, Town Hall, Sheffield, on deposit of the sum of 1l. 1s.

AUGUST 6. — **Cardigan.**—WIDENING BRIDGE.—For widening Nantyferwig Bridge, for the Corporation. Plans, etc., at the Town Clerk's Office.

AUGUST 9.—**Kilpeddar.**—ENGINE, ETC.—Rathdrum R.D.C. invite estimates for the erection of an oil engine sewage pump, and other work in Kilpeddar, Co Wicklow, about four miles from Greystones, in accordance with the specification prepared by Mr. Geo. T. Moore, A.R.C.S.I., M.Inst.C.E.I., Engineer to the Board, 1 and 2, Foster-place, Dublin. Specification can be had on application and lodgment of 1l. 1s.

AUGUST 9. — **Leamington.**—PUMPS.—The Corporation of Royal Leamington Spa invite tenders for the construction and erection at one of their pumping stations of a set of deep well pumps (capacity 2,000 gallons per hour). Drawing, etc., may be seen at the once of their Engineer, Mr. W. de Normanville, at the Town Hall, and copies of the specification may be obtained on application.

AUGUST 18.—**Enniscorthy.**—ELECTRIC LIGHTING.—The Committee of Management of the Enniscorthy District Asylum invite tenders for lighting Kilcarberry House from existing plant according to specification, which can be had on application to the Clerk, District Asylum, Enniscorthy. Contractors required to lodge the sum of 1l. at the time of applying for specification.

AUGUST 21. — **Bury.** — HEATING AND VENTILATING.—The Education Committee invite schemes and tenders for heating and ventilating a new secondary school to be erected in the Borough. Particulars, etc., may be obtained from Mr. Robert Wilkinson, Director of Education, Education Offices, 8, Bank-street, Bury, on payment of a deposit of 1l. 1s. Complete plans of the building may be inspected at the offices of Mr. J. Theo. Halliday, A.R.I.B.A., 14, John Dalton-street, Manchester.

NO DATE. — **Dewsbury.** — ELECTRIC LIGHTING.—Electric lighting of the Nurses' Home at the Dewsbury and District Infirmary. Names and addresses to Messrs. Kirk, Sons, & Ridgway, F.R.I.B.A., architects, Dewsbury.

MISCELLANEOUS.

AUGUST 3. — **Malling.**—STEAM ROLLERS.—Malling R.D.C. invite tenders for the use of steam rollers and scarifiers at such times and places as may be directed by the Surveyor, Mr. John Marshall, from whom tender forms and conditions of contract may be obtained.

AUGUST 4. — **Auchaber, Forgue.** — PREPARING GROUND.—Estimates are wanted for the following work in connexion with preparing ground for planting at the Home Farm, Auchaber, Forgue, Huntly, viz.:—(1) Cutting 2,000 yds. or thereby of open ditches for draining ground; (2) erecting 3,000 yds. or thereby of wood and wire fence, with wire netting, for enclosing the ground. The work and conditions will be shown by Mr. Peter Niven, Lilybank, Ythanwells, by Insch. The conditions may also be seen at Messrs. Hunter & Gordon, advocates, 80, Union-street, Aberdeen.

AUGUST 4. — **Huddersfield.** — TELEPHONE LINES.—The Corporation of Huddersfield invite tenders for the erection of telephone lines from the Central Police-station to the Moldgreen, Deighton, and Lockwood Police-stations. Specifications, etc., may be seen, and bills of quantities, etc., obtained, on application at the offices of the Borough Electrical Engineer, St. Andrew's-road, Huddersfield.

AUGUST 4.—**Manchester.**—BALANCERS.—The Electricity Committee of the Manchester Corporation invite tenders for the supply, delivery, and erection at their Dickinson-street generating station of three five-wire balancers. Specifications, etc., may be obtained on application to Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Further particulars and information can be obtained from Mr. S. L. Pearce, Chief Electrical Engineer, Dickinson-street, Manchester.

AUGUST 5. — **Hull.**—GATES.—Designs and tenders are invited for a set of wrought-iron entrance gates, etc., for the Pickering Park, Hull. With such designs and tenders may also be submitted designs and tenders for wrought-iron fencing, posts, and chains on the Park frontage. Further particulars may be obtained of the City Engineer, Hull.

AUGUST 7.—**Merthyr Tydfil.**—FURNISHING TREHARRIS PUBLIC LIBRARY.—Designs, etc., may be seen, and all further particulars obtained from the architect, Mr. W. Dowdeswell, Treharris.

AUGUST 10. — **London.** — WARD LOCKERS.—Poplar and Stepney Sick Asylum District Managers invite tenders for the supply of thirty-five ward lockers. Sample may be seen upon application to the Engineer at the Asylum, Devon's-road, Bromley, E. Printed forms of tender may be obtained upon application to Mr. Walter R. Foskett, Clerk to the Managers, Clerk's Offices, Devon's-road, Bromley-by-Bow, London, E.

AUGUST 12.—**Blandford.**—STEAM ROLLING.—Blandford R.D.C. invite tenders for the work of steam rolling the District roads during the half year ending March 31, 1910. For forms of tender and other particulars apply to Mr. Edward Phelps, District Surveyor, Blandford.

AUGUST 12. — **Eastbourne.** — WROUGHT-IRON FENCING.—The Pleasure Grounds Committee invite tenders for the supply and delivery of approximately 147 lin. yds. of wrought-iron fencing and gates, to be erected as part of the boundary wall to Motcombe Pleasure Garden. Plans, etc., may be seen, and form of tender obtained, at office of Mr. A. Ernest Prescott, Borough Surveyor, Town Hall, Eastbourne, on payment of 1l. 1s.

AUGUST 18.—**London.**—BATTERY SINKS.—The Commissioners of His Majesty's Works and Public Buildings invite tenders for the supply of battery sinks and mud troughs (leadless glaze only). Particulars of the samples and estimated quantities required and a copy of the conditions, etc., may be had on application to the Board's Architect, Mr. Rutherford, 17, Delahay street, S.W.

NO DATE. — **Bury.** — CLEANING TUNNEL.—Messrs. James Kenyon & Son, Ltd., Roach Bank Mills, Bury, are open to receive tenders for cleaning tunnel running from mills to River Roach. Particulars given on applying at the mill.

NO DATE. — **Hanley.** — SINKING SHAFTS.—Tenders wanted for sinking a pair of shafts in North Staffordshire. For specifications and forms of tender write A 6, "Sentinel" Office, Hanley.

NO DATE. — **Selby.**—ROAD ROLLER.—Selby U.D.C. invite tenders for a 12½-tons steam road roller, with scarifier, etc., complete. Particulars may be obtained from the Engineer and Surveyor to the Council.

PAINTING, etc.

AUGUST 3. — **Cambridge.**—PAINTING.—Cambridge and Chesterton U.D. Councils invite tenders for painting the Victoria Bridge. A specification of the work can be seen at the office of the Borough Surveyor, Guildhall, Cambridge, and at the office of Mr. J. D. Bland, the Surveyor to the Chesterton U.D.C.

AUGUST 3. — **Huddersfield.**—PAINTING.—The Corporation of Huddersfield invite tenders for the painting of bridges, urinals, and street name-plates. Specifications, etc., may be seen, and bills of quantities, etc., obtained, on application at the offices of the Borough Engineer and Surveyor, 1, Peel-street.

AUGUST 3. — **Liverpool.** — PAINTING.—The Select Vestry invite tenders for painting required at their Cottage Homes Institution at Olive Mount, Wavertree, according to a specification which may be obtained at Parish Offices, Brownlow-hill, Liverpool.

AUGUST 3.—**Lydney, etc.**—PAINTING.—The Great Western and Midland Railways Joint Committee invite tenders for cleaning and painting the following station buildings on the Severn and Wye joint line, viz.:—Lydney Town Station, Lydney Junction Station, Whitecroft Station, and Parkend Station. Specifications may be seen, and quantities, etc., obtained, on application at the Engineer's Office, Midland Railway, Derby Station.

AUGUST 4. — **North Dublin.** — PAINTING. — The Board of Guardians invite tenders for painting works in connexion with the Workhouse and dispensaries, in accordance with the specification, which can be seen and copied at office of Mr. John O'Neill, Clerk of the Union Board-room, North Brunswick-street, Dublin, on payment of a sum of 10s.

AUGUST 4. — **Ryhope, Sunderland.**—PAINTING.—The Corporation of Sunderland invite tenders for the outside painting, etc., of the Borough Asylum at Ryhope. Specifications may be seen, and schedule of work, etc., obtained, at the Borough Engineer's Office, Town Hall.

AUGUST 5. — **Huddersfield.**—PAINTING.—The Corporation of Huddersfield invite tenders for painting the overhead tramway poles and waiting-rooms, situate along the various routes of the tramway system. Specifications, etc., may be obtained on application at the offices of the Tramway Manager, Northumberland-street.

AUGUST 9.—**Nottingham.**—EXTERNAL PAINTING AT THE EXCHANGE BUILDINGS.—The Estates Committee of the Nottingham Corporation invite tenders for external cleaning and painting at the block of property known as the Exchange Buildings, Smithy-row, Great Market-place and Cheapside. Specifications, etc., may be obtained from Mr. Frank B. Lewis, City Architect, Guildhall, on payment of deposit of 1l. 1s.

AUGUST 11. — **Nottingham.** — PAINTING, ETC.—The Watch Committee invite tenders for the following:—(1) Internal cleaning and painting at various sub-police-stations; (2) external cleaning and painting at Leen-side Police-station, Fire-station, cottages, etc. Specifications, etc., may be obtained from Mr. Frank B. Lewis, City Architect, Guildhall, on payment of a deposit of 1l. 1s. on each contract.

✱ AUGUST 25. — **Hampstead.**—PAINTING, ETC.—The Guardians of St. John, Hampstead, invite tenders for cleaning and painting work at Workhouse premises, Hampstead. See advertisement in this issue for further particulars.

NO DATE.—**Batley.**—PAINTING.—Batley Corporation invite tenders for painting greenhouses, etc., at the Cemetery. Specifications can be seen on application to the Registrar.

NO DATE.—**Smallwood.**—PAINTING, ETC.—Painting of the interior of Smallwood Church and for various decorations and repairs. References required, showing approved experience of similar church work. For particulars apply to Mr. R. W. Taylor, Ivy Farm, Smallwood, or the Vicar.

NO DATE. — **Stafford.**—PAINTING, ETC.—Repointing Nos. 37 and 38, Rowley-street, Stafford, and painting and papering No. 38 both inside and outside. Particulars may be obtained from Messrs. Morgan & Co., solicitors, Stafford.

ROADS, SANITARY, AND WATER WORKS.

AUGUST 3.—**Tottenham.**—MAKING-UP.—Tottenham U.D.C. invite tenders for making-up Ashfield-road. The plans can be seen, and general conditions, etc., obtained, on application to Mr. W. H. Prescott, A.M.Inst.C.E., Engineer to the Council, at the Council Buildings, the Green, Tottenham, any day during office hours. The sum of 10s. 6d. will be charged for the quantities. Deposit of 5l.

AUGUST 4. — **Luddenden Foot.** — PAVING.—The U.D.C. invite tenders for the excavating, draining, concreting, paving with granite setts, kerbing, and flagging a certain portion of the Todmorden, Halifax, and Burnley main road. Plans, etc., can be seen, and specification, etc., obtained, on application to Mr. F. Clayton, Surveyor to the Council.

AUGUST 4. — **Skegness.**—TAR PAVING.—Skegness U.D.C. invite tenders for the supplying and laying of about 13,000 super. yds. of granite tar paving on the carriageway in Drummond-road, Skegness. Specifications, etc., may be obtained on application to Mr. Ralph Hudson, the Surveyor to the Council.

AUGUST 4.—**Stoke-upon-Trent.**—DRAINAGE, ETC.—The Guardians invite tenders for the following for the Cottage Homes, Penkhull, Stoke-upon-Trent:—(1) Furniture, fittings, bedding, etc.; (2) machinery and fittings for the laundry; (3) drainage and road-making. Specifications of No. 1 may be had on application to Mr. T. Rowley, Clerk to the Guardians, Union Offices, Stoke-upon-Trent, and for Nos. 2 and 3 on application to Mr. A. R. P. Piercy, architect, at Union Offices.

AUGUST 5. — **South Brent.** — SEWERS.—Totnes R.D.C. invite tenders for the construction of sewers, with manholes and shafts, etc., in connexion with the sewerage of South Brent. Plans, etc., may be seen, and copies of the bill of quantities obtained, at the offices of the Engineer, Mr. R. Hansford Worth, A.M.Inst.C.E., 42, George-street, Plymouth, or on application to Mr. C. Ellis, Sanitary Inspector, South Brent.

AUGUST 7.—**Radcliffe.**—SEWAGE WORK.—Radcliffe U.D.C. invite tenders for the following, viz.:—(*a*) The supply and erection, complete, of a semi-portable multitubular boiler, with all steampiping and connexions complete; and (*b*) the construction and fitting-up complete of a 60-ft. bacteria and contact bed, at the Sewage Works, Mount Sion-road, Radcliffe. Drawings, etc., may be seen, and bill of quantities, etc., obtained, on application to Mr. W. L. Rothwell, Engineer to the Council, on payment of 1l. 1s.

AUGUST 9.—**Bedlington.**—SEWERAGE WORKS.—Bedlingtonshire U.D.C. invite tenders for the execution of sewerage works. Drawings, etc., may be seen, and quantities, etc., obtained, by appointment, at

Digitized by Google

the office of the Surveyor of the Council, Mr. J. E. Johnston, Front-street, Bedlington.

AUGUST 9. — **Southport.**—PIPELAYING.—Southport, Birkdale, and West Lancashire Water Board invite tenders for carting, laying, and jointing about 3¼ miles of cast-iron pipes 18 in. in diameter. The plans may be seen, and a copy of the specification, etc., may be obtained, at the offices of Messrs. H. Rofe & Son, civil engineers, 8, Victoria-street, Westminster, S.W., upon the payment of the sum of 5*l.* 5s. Copies of the plans may also be seen at the Water Works Office, Portland-street, Southport.

AUGUST 9. — **Warrington.** — ROAD WORKS.—The Paving and Sewerage Committee invite tenders for the forming and paving of twelve streets and forty-four passages. Drawings, etc., may be seen, and forms of tender, etc., obtained, at the office of the Borough Surveyor, Town Hall. A deposit of 1*l.* 1s. will be required for quantities.

AUGUST 10.—**Leyland.**—THIRLMERE WATER SUPPLY SCHEME.—Tenders are invited by the Leyland Council for (1) supplying, etc., at (*a*) Chorley and Heapey railway stations, or (*b*) on the wharves of the Leeds and Liverpool Canal Company, at Heapey and Whittle, and depositing on the line of route about 240 tons of 8-in. cast-iron pipes and specials, valves, etc.; and (2) excavating, laying and jointing mains, erecting meter-house, meter chamber and valve chambers. Copies of the general conditions, etc., may be obtained, the drawings inspected, and any further information obtained, on application to the Surveyor to the Council, Mr. M. H. Wilkinson, M.Inst.C.M.E., Public Hall Buildings, Leyland, on payment of a deposit of 2*l.* 2s.

AUGUST 11. — **Wembley.** — SLUDGE ELEVATOR.—Wembley U.D.C. invite tenders for the supply and erection of a sludge elevator and fittings at the Sewage Outfall Works. Specification, etc., to be obtained from Mr. Cecil R. W. Chapman, Engineer and Surveyor to the Council, Public Offices, Wembley.

AUGUST 13.—**Birmingham.**—ST. STEPHEN'S-STREET, BRACEBRIDGE-STREET, AND WESTERN-ROAD.—The Public Works Committee invite tenders for the construction of a length of about 800 yds. of 18-in., 12-in., and 9-in. pipe sewers, together with manholes and other incidental works. Plans, etc., may be seen, and quantities and forms of tender obtained, on deposit of the sum of 2*l.*

AUGUST 16. — **Lincoln Waterworks.**—ELKESLEY SUPPLY.—Contracts Nos. 11, 12, 13, and 14 (21-in. rising main to Lincoln, pipelaying).—The Lincoln Corporation invite tenders for pipelaying in the four sections of the above. Specifications, etc., may be obtained, and drawings inspected, at the office of the Engineer, Mr. Neil McK. Baron, Waterworks Engineer, Lincoln, upon production of a receipt from the City Accountant for 5*l.* 5s.

AUGUST 16. — **Rainham and other Levels.**—SLUICES.—The Honourable Commissioners of Sewers for Rainham and other Levels in the County of Essex invite tenders for the renewal of three timber sluices, etc., under the Red Bridge, in the Parish of Rainham. The drawing, etc., can be seen at the offices of the Commissioners' Engineer, Mr. A. H. Case, M.Inst.C.E., Broad Sanctuary-chambers, Westminster.

AUGUST 17. — **Dulverton.** — ROAD WORKS. — The Dulverton R.D.C. invite tenders for widening, improving, and coating about 14 miles 6 furlongs of the District road from Coupleham Cross, near Winsford, to the County boundary at Brendon Two Gates. Full particulars, etc., may be seen, and forms of tender obtained, on application to the Clerk to the Council, or to the Council's Engineer, Mr. W. F. Siddalls, 2, Hammett's-square, Tiverton, upon payment of a deposit of 2*l.* 2s.

AUGUST 21.—**Cosford.**—DRAINAGE.—The Guardians invite tenders for making alterations and additions to the system of drainage at the Workhouse at Semer. Plans, etc., may be seen at the office of the architect, Mr. Henry J. Wright, M.S.A., 4, Museum-street, Ipswich, and at the Master's office at the Workhouse.

AUGUST 21. — **Yardley.**—STREET WORKS.—Yardley R.D.C. invite tenders for the making-up of St. Agnes-road (part of) and Colmore-crescent, Wake Green. Plans, etc., can be seen on application to Mr. Arthur W. Smith, Engineer and Surveyor to the Council, at the Council House, Sparkhill, near Birmingham, on payment of a deposit of 2*l.* 2s. to Mr. Francis Ladbury Thompson, Clerk of the Council, Council House, Sparkhill.

AUGUST 25. — **East Saltney.**—SEWAGE WORKS.—Hawarden R.D.C. invite tenders for sewerage and sewage disposal works for the Parish of Saltney and part of Chester. Plans, etc., can be seen at the office of the Engineers, Messrs. Elliott & Brown, A.M.Inst.C.E., Burton-buildings, Parliament-street, Nottingham, and copies of the bills of quantities, etc., obtained on deposit of 3*l.* 3s.

AUGUST 31.—**Manchester.**—THIRLMERE AQUEDUCT: THIRD LINE OF PIPES.—CONTRACT B.—The Waterworks Committee invite tenders for the laying and jointing of the middle section of the third line of pipes from Thirlmere to Manchester. Plans, etc., may be seen, and printed specification, etc., obtained, at the offices of Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, on receipt of cheque for 5*l.* 5s.

* SEPTEMBER 13.—**Wandsworth.**—MAKING-UP.—The Council of the Metropolitan Borough of Wandsworth is prepared to receive tenders for the making-up and paving of Clairview-road, Streatham. See advertisement in this issue for further particulars.

NO DATE. — **Barnsley.**—SINKING PITS.—Sinking a pair of pits, 22 ft. diameter, finished to the Barnsley seam, about 920 yds. in depth. Specifications will be forwarded on receipt of a deposit of 5*l.* Apply Messrs. Pease & Partners Ltd., Thorne, near Doncaster.

STONES, MATERIAL, AND STORES.

AUGUST 4.—**Manchester.**—TIMBER.—The Cleansing Committee of the Manchester Corporation invite tenders for the supply of fifteen standards spruce deals and two balks pitchpine. Specifications may be obtained from Mr. Robert Williamson, Superintendent of the Cleansing Department, Town Hall, Manchester.

AUGUST 6. — **London.** — WROUGHT IRON.—The Bengal and North-Western Railway Company, Ltd., invite tenders for the supply and delivery of 287 tons wrought iron, as per specification to be seen at the Company's Offices, 237, Gresham House, Old Broad-street, London, E.C. For each specification a fee of 10s. will be charged, which cannot under any circumstances be returned.

AUGUST 10.—**London.**—TOOLS, ETC.—The Board of Directors of the Madras and Southern Mahratta Railway Company, Ltd., invite tenders for miscellaneous tools and stores, as per the specifications which may be seen at the offices of the company. The charge for the specifications is 1*l.* 1s., which will not be returned. Mr. H. Bonham-Carter, Secretary, offices, 91, York-street, Westminster, S.W.

AUGUST 12.—**Salford.**—PURIFYING MATERIAL.—Salford Gas Committee invite tenders for the supply of 1,100 tons of oxide of iron purifying material. Full particulars may be obtained on application to Mr. Wm. W. Woodward, Engineer, Gas Offices, Bloom-street, Salford.

AUGUST 31. — **Dublin.**—MATERIALS, ETC.—Tenders are required for the triennial contract for South Dublin from October 1, 1909, to March 31, 1911, in the Dublin Sub-District R. E. Office, Lower Castle-yard, Dublin. Forms of tender, etc., may be obtained on application at the above-named Royal Engineer Office, by letter, addressed to the Sub-District Commanding Royal Engineer, or in person.

AUGUST 31.—**Rochester.**—ANNUAL CONTRACTS.—The Corporation invite tenders for the supply of articles. Also for a period of three years for the cartage and disposal of night soil. Copies of specifications and forms of tender can be obtained on application to Mr. William Banks, A.M.Inst.C.E., City Surveyor, Guildhall, Rochester

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF THE WORKS	Surrey C.C.	120*l.*, etc., per annum	Aug. 7
*LECTURER ON ENGINEER'S ESTIMATES (CIVIL ENG.)	London C.C.	See advertisement in this issue	Aug. 16

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
*BUILDING MATERIALS OF MANSIONS—Sheen Elms	Hooker & Webb	Aug. 5
*STOCK-IN-TRADE OF IRONMGRS'. & BLDRS'. MERCHANTS—55, Camberwell-road, S.E.	J. T. Skelding & Holland	Aug. 18
*CONTRACTOR'S PLANT, MACHINERY, ETC., N. KENSINGTON, W.—On the Premises	Fuller, Horsey, Sons, & Cassell	Aug. 25

RECENT SALES.—*Continued from page* 139.

By NEWBON, SHEPHARD, & EDWARDS.

Barnsbury.—16 and 28, Brooksby-st., f., w.r 78*l.*	£620
Holloway.—57, Brecknock-rd., u.t. 28 yrs., g.r. 7*l.* 10s., y.r. 50*l.*	365
Islington.—30, Delhi-st., u.t. 49 yrs., g.r. 6*l.*, y.r. 32*l.* 10s.	250
Barnsbury.—1, Cumberland-st., u.t. 24½ yrs., g.r. 8*l.*, w.r. 59*l.* 16s.	165
Hoxton.—9 to 13 (odd), Wimbourne-st., u.t. 27½ yrs., g.r. 68*l.*, w.r. 151*l.*	105

By RAWLINS, CULVER, & RYLAND.

Catford.—Blythe Vale, plot of land, f.	500
14, Vancouver-rd., f., y.r. 40*l.*	400
2 to 10 (even), 18 and 20, Carholme-rd., f., y., and e.r. 252*l.*	2,100

By SALTER, REX, & CO.

Stroud Green.—86A, Florence-rd., u.t. 69 yrs., g.r. 8*l.*, e.r. 45*l.*	330
Kentish Town.—Clarence-rd., l.g.r. 26*l.*, u.t. 20 yrs., g.r. nil	280

By TOPLIS & HARDING.

Hyde Park.—2, Great Cumberland-pl., u.t. 20¼ yrs., g.r. 31*l.* 10s., y.r. 560*l.*	4,700

By STIMSON & SONS.

Balham.—8 to 25, Boulevard-mansions (s. and flats), f., e.r. 900*l.*	4,000
Dulwich.—Goodrich-rd., f.g. rents 14*l.*, reversion in 70 yrs.	300
3 to 9, Mount Adon-pk., f., y. and e.r. 490*l.*	3,790
Tottenham.—111 to 119 (odd), Tewkesbury-rd., u.t. 67 yrs., g.r. 19*l.* 10s., w.r. 110*l.* 10s.	150
50, Asplins-rd., u.t. 76 yrs., g.r. 4*l.* 10s., w.r. 22*l.* 2s.	175
Ilford.—15, Albert-rd., u.t. 986 yrs., g.r. 6*l.*, w.r. 36*l.* 8s.	190
80 and 82, Richmond-rd., u.t. 984 yrs., g.r. 8*l.* 8s., y. and w.r. 50*l.* 12s.	350
Old Kent-road.—9 and 10, Glengall-ter., f., y.r. 66*l.*	740

By WORSFOLD & HAYWARD (at Dover).

Dover.—149, Snargate-st. (s.), f., y.r. 28*l.*	325
24, Liverpool-st., u.t. 7 yrs., g.r. 1*l.* 18s. 1d., p.	100
West Houghton.—6, Young's-pl., f.	175

July 23.—By VENTOM, BULL, & COOPER.

Stepney.—1 to 6, Brunton-pl., u.t. 40 yrs., g.r. 21*l.*, w.r. 156*l.*	£400
Mile End.—30 to 38 (even), West-st., 2, 4 and 6, Ann-st., f., w.r. 179*l.* 8s.	580
468, Mile End-rd., f., w.r. 31*l.* 4s.	280
114, Cannon-st.-rd. (s.), f., w.r. 78*l.*	400
Whitechapel.—59 and 60, High-st., and stable, c., y. and e.r. 316*l.* (one-fourth share)	600

By ROBSON & PERRIN.

Catford.—42, Arngask-rd., u.t. 986 yrs., g.r. 4*l.* 14s., e.r. 24*l.*	255

By GEO. PRATT.

Bermondsey.—Farncombe-st., The Old Justice p.-h., f., y.r. 85*l.*	2,010
33, 35, 53 to 59 (odd), Farncombe-st., f., w.r. 156*l.*	1,080
Farncombe-st., f.g.r. 30*l.*, reversion in 43 yrs.	730

By CRONK.

Sevenoaks.—Holly Bush-la., Sevenoaks School Lands, 12 a. 1 r. 30 p., f.	4,000
Pimlico.—Grosvenor-rd., Medway Wharf, lease for 11½ yrs. at 100*l.*	980

By GODDARD & SMITH.

Clapham.—78, New Park-rd., f., p.	730
Holborn.—60, Huntley-st. and 65, Chenies-mews, u.t. 15½ yrs., g.r. 62*l.*, y.r. 112*l.*	125
Canning Town.—46 to 56 (even), Hemsworth-st., u.t. 54 yrs., g.r. 30*l.*, w.r. 138*l.* 9s.	110

By LINNETT & LANE.

Harlesden.—4, Florence-ter. (s.), f., y.r. 65*l.*	810

By MORGAN, BAINES, & CLARK.

Carshalton.—Carshalton-rd., Fernleigh, f., p.	600

By RIDER & SONS.

Notting Hill.—3, Blagrove-rd., u.t. 54 yrs., g.r. 7*l.*, e.r. 34*l.*	225

By A. E. WILLIAMS & CO.

Ilford.—159, Coventry-rd., f., y.r. 30*l.*	430
St. John's Wood.—16, Mortimer-cres., u.t. 41½ yrs., g.r. 12*l.*, e.r. 65*l.*	420
Willesden.—46, Chaplin-rd., u.t. 69 yrs., g.r. 6*l.*, y.r. 28*l.*	£240
Hampstead.—89, Sumatra-rd., u.t. 78 yrs., g.r. 5*l.* 10s., y.r. 36*l.*	320
Herne Hill.—24, Ruskin-walk, u.t. 92 yrs., g.r. 7*l.* 10s., y.r. 36*l.*	305
Battersea.—9, Rosenau-rd., u.t. 71 yrs., g.r. 7*l.*, q.r. 40*l.*	300
Erith.—11, 13, 15, 17, 21, and 23, Northumberland-pk., u.t. 85½ yrs., g.r. 18*l.*, w.r. 124*l.* 16s.	570

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Best Stocks	1	6	6	per 1000 alongside, in river.	
Picked Stocks for Facings	2	10	0	,,	delivered
Flettons	1	4	6	,,	at railway depôt
Best Fareham Red	3	12	0	,,	,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire	3	15	0	,,	,, ,,
Do. Bullnose	4	0	0	,,	,, ,,

Digitized by Google

BRICKS, &c. (*continued*).

	£	s.	d.	
Best Stourbridge Fire Bricks	3	14	0	per 1000, deld. at rly. depôt
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Best Dipped Salt Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft. average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "

	s.	d.	
Ancaster in blocks	1	10	per ft. cube, deld. rly. depôt.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks	2	4	" "
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto. ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "
HARD YORK—			
Scappled random blocks	3	0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	13	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000, at rly. depôt.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "

TILES (*continued*).

	s.	d.	
Best "Rosemary" brand plain tiles	48	0	per 1000 at rly. dept.
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	£	s.	d.		£	s.	d.
	At per standard.						
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13	10	0	...	15	0	0
Deals: best 3 by 9	13	0	0	...	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	...	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.			
Deals: seconds	1	0	0	less than best.			
Battens: seconds	0	10	0	"			
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	...	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	...	9	10	0
Foreign Sawn Boards—							
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.			
¾ in.	1	0	0	"			
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft						
	4	10	0	...	5	0	0
Seconds	4	0	0	...	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	...	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	...	3	10	0
Swedish balks	2	10	0	...	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	...	4	15	0

JOINERS' WOOD.	£	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	At per standard.						
	24	0	0	...	25	0	0
3 in. by 9 in.	22	0	0	...	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	...	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	...	20	0	0
3 in. by 9 in.	17	10	0	...	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	...	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	...	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	...	22	10	0
Do. 3 in. by 9 in.	18	0	0	...	19	10	0
Battens	13	10	0	...	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	...	17	0	0
Do. 3 in. by 9 in.	14	10	0	...	16	0	0
Battens	11	0	0	...	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	...	14	0	0
Do. 3 in. by 9 in.	12	10	0	...	14	0	0
Battens	10	0	0	...	11	0	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	14	10	0	...	15	10	0
" " 3 in. by 9 in.	13	10	0	...	14	0	0
Battens	11	0	0	...	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	...	14	10	0
" " 3 in. by 9 in.	12	10	0	...	13	10	0
Battens	10	0	0	...	11	0	0
Pitch-pine: deals	18	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.			
Oddments	32	0	0	"			
Seconds, regular sizes	33	0	0	"			
Oddments	28	0	0	"			
Kauri Pine—Planks, per ft. cube	0	3	6	...	0	5	0
Danzig and Stettin Oak logs—							
Large, per ft. cube	0	3	0	...	0	3	9
Small " "	0	2	6	...	0	2	6
Wainscot Oak Logs, per ft. cube	0	5	6	...	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	...	0	0	9½
¾ in. do. do	0	0	7	...	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	...	0	1	0
Selected, Figury, per ft. super. as inch	0	1		...	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak per load	17	0	0	...	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	...	0	5	0
Prepared Flooring, etc.—	Per square.						
1 in. by 7 in. yellow, planed and shot	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	...	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	...	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. " "	0	14	0	...	0	18	0
¾ in. by 7 in. white " "	0	10	0	...	0	11	6
1 in. by 7 in. " "	0	12	9	...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.						
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	...	7	10	0
Compound Girders, ordinary sections	9	0	0	...	10	0	0
Steel Compound Stanchions	11	0	0	...	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	...	10	0	0
Flitch Plates	9	0	0	...	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	...	8	10	0

METALS.

	Per ton, in London. £	s.	d.		£	s.	d.
IRON—							
Common Bars	8	10	0	...	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	...	9	5	0
Staffordshire "Marked Bars"	10	10	0	...	—		
Mild Steel Bars	8	15	0	...	9	5	0
Hoop Iron, basis price	9	5	0	...	9	10	0
" " Galvanised	17	0	0	...	—		
(*And upwards, according to size and gauge.)							
Sheet Iron, Black—							
Ordinary sizes to 20 g.	9	15	0	...	—		
" " 24 g.	10	15	0	...	—		
" " 26 g.	12	5	0	...	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	...	—		
Ordinary sizes to 22 g. and 24 g.	15	10	0	...	—		
" " 26 g.	13	10	0	...	—		
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	0	0	...	—		
" " 22 g. and 24 g.	18	10	0	...	—		
" " 26 g.	20	0	0	...	—		
Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	...	—		
" " 22 g. and 24 g.	14	15	0	...	—		
" " 26 g.	16	5	0	...	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	...	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	...	—		
" " " 26 g.	15	0	0	...	—		
Cut Nails, 3 in. to 6 in.	10	10	0	...	11	0	0
(Under 3 in., usual trade extras.)							

LEAD, &c.	Per ton, in London. £	s.	d.		
LEAD—Sheet, English, 3lb. and up.	16	0	0	...	—
Pipe in coils	16	10	0	...	—
Soil pipe	18	10	0	...	—
Compo pipe	19	10	0	...	—
ZINC—Sheet—					
Vielle Montagne	26	10	0	...	—
Silesian	26	5	0	...	—
COPPER—					
Strong sheet per lb.	0	1	0	...	—
Thin " "	0	1	1	...	—
Copper nails "	0	0	10	...	—
Copper wire "	0	0	10	...	—
BRASS—					
Strong Sheet "	0	0	11	...	—
Thin "	0	1	0	...	—
TIN—English Ingots	0	1	5	...	—
SOLDER—Plumbers' "	0	0	7	...	—
Tinmen's "	0	0	9½	...	—
Blowpipe "	0	1	0	...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d.	per ft. delivered.	
" fourths	1½d.	" "	
21 oz. thirds	3d.	" "	
" fourths	2½d.	" "	
26 oz. thirds	4d.	" "	
" fourths	3d.	" "	
32 oz. thirds	4½d	" "	
" fourths	4½d.	" "	
Flute Sheet, 15 oz	3½d.	" "	
" 21 oz.	4½d.	" "	

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d.	per ft. delivered.	
⅜ "	2¾d.	" "	
½ "	2½d.	" "	
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d.	" "	
" " tinted	5d.	" "	

OILS, &c.	£	s.	d.	
Raw Linseed Oil in pipes	per gallon	0	2	2
" " ,, in barrels	"	0	2	3
" " ,, in drums	"	0	2	6
Boiled ,, ,, in barrels	"	0	2	6
" " ,, in drums	"	0	2	9
Turpentine in barrels	"	0	2	11
" in drums	"	0	3	1
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERDARE.—For the erection of new laboratories at the Aberdare Intermediate Schools, for the Glamorgan Education Committee. Mr. D. Pugh-Jones, County Architect, Cardiff:—

S. Shail, Llandaff† £3,093

Digitized by Google

ABERDARE.—For erection of unclimbable iron railings round the Aberdare Intermediate School playfield, for the Glamorgan Education Committee. Mr. D. Pugh-Jones, County Architect, Cardiff:—
Hill & Smith, Brierley Hill Ironworks, Staffs.* £139

ABERDEEN.—For cement concrete culvert at Scatterburn, for the Town Council. Mr. W. Dyack, Burgh Surveyor, Town House, Aberdeen:—
P. Bisset & Son, Willowdale-place £76 13 6

ANNFIELD PLAIN (Durham).—For private street works at the back of Ryde-terrace, for the Urban District Council. Mr. T. J. Trowsdale, Surveyor, Council Offices, Annfield Plain:—
Johnson & Strong, Stanley, Durham £224 19 9

AUDENSHAW (Lancs.)—For street works, Wellington-street, etc., for the Urban District Council. Mr. W. Clough, Engineer and Surveyor, Audenshaw:—

W. Clarke ..	£2,269 8 7	Gosling & Stafford ..	£1,647 1 4
F. Marland ..	1,840 19 7	W. Worthington, Manchester* ..	1,500 11 10
A. Hobson ..	1,773 7 6		
J. Randall ..	1,678 18 6		

BIGGLESWADE.—For the erection of Church of England schools, for girls and infants, at Biggleswade, Beds, for the Foundation Managers. Mr. Thomas Cockrill, A.M.Inst.C.E., architect, Market-square, Biggleswade, Quantities by Mr. Henry Bushell, F.S.I., 33, New Bridge-street, E.C.:—

—	School Buildings.	Offices and Latrines.	Drainage.	Playgrounds and New Road.	Boundary Walls and Fences.	Bell Turret.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. Raban & Sons	2,669 17 0	472 11 6	119 18 2	386 4 10	439 5 1	50 10 11	4,138 7 6
A. Henman & Son	2,641 10 0	455 14 1	183 6 6	414 5 8	381 10 8	52 4 2	4,128 11 1
Shrouder & Matthews	2,667 19 1	439 5 8	125 18 1	332 7 11	473 17 8	53 0 0	4,092 8 5
W. Haynes	2,716 10 0	471 5 0	94 17 0	199 3 8	462 9 4	53 3 8	3,997 8 8
F. Newton	2,372 2 1	486 16 3	161 6 8	348 9 8	453 11 8	51 13 8	3,874 0 0
Coulson & Lofts	2,411 17 0	425 16 0	151 10 0	360 11 0	419 6 0	48 0 0	3,817 0 0
W. Wade	2,425 0 0	450 0 0	108 0 0	355 9 6	412 0 0	49 0 0	3,799 9 6
F. Welham	2,410 0 0	450 0 0	100 0 0	347 1 7	398 0 0	48 0 0	3,753 1 7
A. Negus & Sons.....	2,370 0 0	438 14 3	109 6 10	362 13 4	411 19 10	46 18 2	3,739 12 5
G. Page & Son.....	2,380 13 0	438 19 0	101 0 0	395 11 0	384 10 0	46 12 0	3,687 5 0
C. Wright.....	2,400 0 0	380 0 0	85 0 0	350 0 0	400 0 0	48 0 0	3,663 0 0
H. Hinkins	2,227 1 1	420 4 8	92 7 8	379 16 2	419 3 11	49 17 6	3,583 11 0
Clarke & Sons.....	2,304 3 9	398 16 1	102 5 7	305 14 0	401 4 8	51 8 10	3,582 12 11
S. Redhouse & Son.....	2,271 8 0	412 4 9	85 14 7	344 18 0	377 14 0	48 11 8	3,540 11 0
T. Higgs	2,223 17 7	322 17 10	103 16 1	425 12 8	384 14 7	51 16 2	3,512 14 11
G. Bartle & Son	2,350 0 0	330 0 0	100 0 0	290 0 0	376 7 8	53 0 0	3,499 7 8
J. Bailey & Co., Ltd.....	2,246 0 0	377 0 0	99 2 6	325 8 0	402 15 6	47 14 6	3,498 0 0
Treasure Bros.....	2,250 0 0	395 0 0	119 0 0	255 0 0	410 0 0	46 0 0	3,475 0 0
Beardmore & West.....	2,122 0 0	367 0 0	99 0 0	369 10 6	387 0 0	46 13 0	3,391 3 6

BILSTON.—For private street works, Myrtle-street, for the Urban District Council. Mr. Vincent Turner, A.M.Inst.C.E., Engineer and Surveyor, Town Hall, Bilston:—

Tarmac, Ltd. ..	£193 15 5	W. H. Reading	£131 10 0
G. P. Trentham	170 0 0	H. Holloway, Wolverhampton*	130 9 8
J. Owens	152 10 0		
M. A. Boswell ..	146 9 2		

BRENTWOOD (Essex).—For cleaning and painting at High Wood School, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

R. Athey	£171	A. H. Inns	£122
B. Richards & Son ..	145	W. Hussey, 32, Albert-Hall-mansions, Kensington*	115
F. W. Jarvis	139		
R. Brown Bros.....	135		
R. Woollaston & Co. .	128		

BUSHEY.—For sewerage works, Coldharbour-lane, for the Urban District Council. Mr. E. E. Ryder, Engineer to the Council, Bushey:—

R. M. Swaker	£6,573 0 0
W. Muirhead & Co.....	4,465 8 2
Brebner & Co.....	3,961 0 0
W. G. Wilmott	3,634 2 8
W. Iles	3,600 0 0
E. T. Bloomfield	3,492 9 4
G. Wimpey & Co.....	3,460 6 0
T. Adams	3,328 5 10
G. Pitkin	3,223 10 11
W. Cunliffe & Sons, Ltd.....	3,152 12 4
Wilson, Border, & Co.....	3,049 1 0
Bell & Sons	2,983 8 9
W. J. Jackson	2,908 0 6
Bracey & Clark	2,884 0 0
W. & C. French	2,825 19 9
Wickstead & Beardsell	2,816 16 0
G. Jaggard	2,798 1 6
F. P. Bliss	2,664 15 2
W. Wilson	2,651 11 2
W. Bailey & Sons, Bushey Heath*	2,447 17 8

CHESHAM.—For 460 yds. of 9-in. stoneware pipe sewer in Kartoum-avenue, for the Urban District Council. Mr. Percy C. Dormer, Engineer and Surveyor, Council Offices, Chesham, Bucks:—

T. Free & Sons, Ltd.....	£465 0 0	J. Killett.....	£325 0 0
F. W. Southern	368 11 9	J. Mead, Chesham*.....	309 0 0
J. Jackson	325 0 0		

COLESHILL (near Birmingham).—For additional wing, containing laundry, chapel, and babies' rooms, for the Rev. G. V. Hudson. Mr. Henry T. Sandy, architect, 22, Greengate, Stafford. Quantities by architect:—

		Date of Completion.
T. Rowbotham.....	£3,199 ..	—
W. J. Whittall & Son ..	3,189 ..	—
W. Sapcote & Sons	3,157 ..	—
J. E. Williams	3,148 ..	Jan. 31, 1910.
W. H. Gibbs.....	3,077 ..	Dec. 31, 1909.
W. Bishop.....	3,065 ..	—
R. Fenwick, Ltd.....	3,050 ..	Feb. 15, 1910.
J. Smith & Sons	2,975 ..	Jan. 31, 1910.
T. Elvins	2,890 ..	Dec. 18, 1909.
J. Webb.....	2,888 ..	Dec. 31, 1909.
T. & S. Ham.....	2,855 ..	Dec. 31, 1909.
W. Moss & Sons	2,854 ..	Jan. 31, 1910.
W. Hopkins	2,800 ..	Mar. 31, 1910.
T. Lowe & Sons	2,799 ..	Five months.
J. Barnsley & Sons	2,766 ..	Dec. 25, 1909.
J. Bowen & Sons, Ltd.*	2,759 ..	Ten weeks.

EAST HAM.—For erecting school buildings to accommodate 1,032 children, Vicarage-lane, for the Education Committee. Mr. R. L. Curtis, architect, 11 and 12, Finsbury-square, E.C.:—
Mr. W. J. Maddison, Clarkson-street, Canning Town*..... £13,229

EAST KESWICK.—For sewerage works for Wetherby Rural District Council. Mr. H. A. Johnson, M.Inst.C.E., 15, The Exchange, Bradford:—

B. Riley	£2,340 0 0
H. Barker	2,292 3 8
W. Morley & Co.....	2,070 13 0
A. Graham & Son	2,070 0 0
M. Arundell	2,069 8 0
Messrs. Sugden	2,051 1 0
Arnold & Sons	2,050 0 0
Barker Bros.	2,018 4 0
Swinton & Dodd.....	2,013 7 10
C. Bushby & Sons	1,977 6 0
Barker & Sharp	1,944 8 0
A. Schofield	1,936 0 0
W. Briggs.....	1,924 9 3
R. Naylor & Son	1,878 0 0
Greaves & Wheater.....	1,863 14 10
Messrs. Kell Bros., 15, Park-place*	1,756 0 0

EAST TUDDENHAM AND HONINGHAM.—For alterations and additions to school, for the Managers. Messrs. Lacey & Upcher, architects and surveyors, 6, Upper King-street, Norwich. Quantities by architects:—

H. C. Tofts ..	£1,220 10 6	Spencer, Santo, & Co.	£898 0 0
H. C. Greengrass	1,137 0 0	A. Hipperson..	888 0 0
A. E. Palmer..	1,047 0 0	Neal Bros.....	835 0 0
J. J. Howes ..	999 15 0	W. & J. Larner, E. Dereham*	799 15 0
Scarles Bros...	982 0 0		

EWELME.—For erecting a parish reading-room, for the Committee. Mr. Edwin G. Hearness, architect, 24, St. Martin's-street, Wallingford:—

G. Vernon	£230 0 0	Bosher, Son, & Co.....	£185 15 0
Organ Bros.....	210 0 0	Bailey & Sons ..	169 10 0
H. Bowden	208 0 0	J. Bartlett, Wallingford*	169 0 0
S. Robbins	196 10 0		
Burgess & Son..	188 10 6		

GUILDFORD.—For walling and a sanitary outbuilding on the workhouse premises, for the Guardians. Mr. E. L. Lunn, architect, 36, High-street, Guildford:—
H. Brand, 84, Woodbridge-road, Guildford* £295

HALLING.—For painting and general repairs at the Council School, for the Education Committee. Mr. W. H. Robinson, architect, etc.:—

T. C. Bines	£350 0	A. Osborne	£160 18
H. Goodwin.....	246 0	Swain & Stanley, Gillingham* ..	128 0
W. H. Biddlecombe	210 10		
J. Sellick & Son ..	170 0		

HANDSWORTH.—For making Arden-road, for the Urban District Council. Mr. H. Richardson, A.M.Inst.C.E. Surveyor, Council House, Handsworth:—

W. Thorpe	£356 0 0	H. Cooper	£316 7 6
Hill & Co.....	349 0 0	S. Wood, Handsworth*	316 0 0
Currall, Lewis, & Martin	347 15 6	R. Harris & Son	260 0 0
G. Trentham ..	320 0 0		

HELSBY.—For alterations and additions to house and business premises, Helsby, Cheshire, for Mr. Arthur Priestner. Mr. Samuel Davies, architect, Frodsham:—

R. Gleave & Son	£920	J. G. Davies & Co. ..	£815
G. Gleave	889	H. Davies, Helsby*..	785
J. Littler	887		

HEREFORD.—For additions to Council school, Burghill, for Herefordshire County Council. Mr. G. H. Jack, County Surveyor, Hereford:—

R. L. Friend ..	£1,088 10	W. Powell	£956 0
T. Hills.....	988 0	W. Bowers	940 0
C. Cooke	984 0	E. W. Wilks*	899 10
Beavan & Hodges	965 0		

[All of Hereford.]

HERNE BAY.—For erecting a cloak-room and for improved heating, at the Council School, for the Kent Education Committee. Mr. H. W. Robinson, Architect to the Kent Education Committee:—

Horlocks	£1,250	Ingleton Bros., Herne Bay*	£1,080
Adams	1,187		

LEWISHAM.—For tarpaving at the Park Fever Hospital, Hither Green, S.E., for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.Inst.C.E., Engineer-in-Chief:—

W. Pearce	£345 0 0
A. Field & Co.....	326 11 5
H. Woodham & Sons	269 0 0
S. Hobman & Co.....	259 3 9
J. Wainwright & Co., Ltd.	248 5 0
A. C. W. Hobman & Co.	191 10 0
Chittenden & Simmons, Ltd., West Malling, Kent*	185 0 0

LONDON.—For repairs and decorative work at the Infirmary, Lower-road, Rotherhithe, S.E., for the Bermondsey Guardians. Mr. A. H. Newman, F.R.I.B.A. Quantities by Messrs. W. T. Farthing & Son:—

For Infirmary, Rotherhithe, S.E.

B. E. Nightingale, Albert Works, Albert Embankment, S.E.* £2,393

For Workhouse, Parish-street, S.E.

W. Reason, 47, Rosebery-avenue, E.C.* .. £115

LONDON.—For painting and repairs at the workhouse, Parish-street, S.E., for the Guardians of the Poor of the Parish of Bermondsey. Mr. Arthur H. Newman, F.R.I.B.A., Architect to the Board, 31, Tooley-street, London Bridge, S.E.:—

E. Dyke	£250 0 0	H. L. Holloway ..	£140 0
F. & F. H. Higgs	181 0 0	F. G. Minter	140 0
H. Welch	176 12 5	W. Nash	133 0
Vigor & Co.	152 0 0	J. Greenwood, Ltd.	131 0
B. E. Nightingale	144 0 0	W. Reason*.....	115 10

LONDON.—For painting and repairs at the Bermondsey Infirmary, for the Guardians of the Poor of the Parish of Bermondsey. Quantities by Messrs. Farthing & Son, 46, Strand, W.C. Mr. Arthur H. Newman, F.R.I.B.A., Architect to the Board, 31, Tooley-street, London Bridge, S.E.:—

T. F. Wright	£4,878	J. Greenwood, Ltd.	£3,287
J. A. Renwich	3,930	J. Hocking.....	3,236
H. L. Holloway....	3,774	Vigor & Co.....	3,156
Harris & Wardropp	3,500	W. Reason	2,897
F. & F. H. Higgs ..	3,497	W. McCarthy	2,407
W. Nash.....	3,463	B. E. Nightingale*	2,393

LONDON.—For the exterior painting, etc., of Leadenhall Market and approaches, for the Corporation:—

G. Candler & Sons	£849 5 6	W. Johnson & Co., Ltd.	£579 0
J. Kirkaldy & Son, Ltd.	644 0 0	W. G. Beaumont & Son	577 0
Harrison & Spooner	643 0 0	Holliday & Greenwood, Ltd.	542 0
W. Shurmur & Sons, Ltd. ..	607 0 0	A. Porter	537 5
		A. H. Inns*.....	493 0

LONDON.—For repairing Charterhouse-street and West Smithfield, for the Corporation:—

Greig & Matthews	£7,120 0	Mowlem & Co...	£5,673 0
W. Griffiths & Co.	6,151 10	G. J. Anderson*.	5,187 0

LONDON.—For erecting a toolhouse and store in West-mall, Notting Hill-gate, for the Royal Borough of Kensington Council:—

H. & S. Jones ..	£127 10 0	Abraham & Baker	£89 10 0
J. C. Richards & Co.....	113 15 9	L. F. Lamplough	83 10 0
E. W. Jacobs ..	109 10 0	G. Eyles.....	79 0 0
F. & G. Foster..	90 0 0	J. R. Collins & Co.*.....	79 0 0

LONDON.—For pulling down and rebuilding shop premises, High-road, Streatham, S.W. Mr. Frank Bethell, architect, 23, Queen Anne's-place, Bush Hill Park, Enfield, N. Quantities supplied by the architect:—

W. Mason & Sons	£13,880	Mattock Bros.....	£9,850
Johnson & Co.....	11,060	Friday & Ling....	9,700
T. J. Messon & Sons	10,150	A. Fairhead & Son	9,663
W. H. Gaze & Sons	9,975	Thomas & Edge ..	9,649
A. Burrage	9,950	A. Monk*.....	9,420
H. L. Holloway ..	9,937		

LONDON.—For advertisement poster, for London County Council dwellings:—

S. Putney, Ltd. ..	£165 0	A. Morland.....	£117 10
Holloway Bros., Ltd.	151 5	C. Wall, Ltd., Lloyd's-avenue, E.C.*	91 15
F. Sage & Co., Ltd.	125 0		
W. Gladding & Co.	125 0		

LONDON.—For erection of sheds, Millbank estate, for the London County Council:—

Spencer, Santo, & Co., Ltd.....	£79 0	H. L. Holloway ..	£68 0
C. Wall, Ltd....	75 0	R. Harding & Son, Brixton*	67 15
F. W. Fletcher	68 10		

[The Architect's estimate, comparable with the tenders, is £70.]

HOVE.—For internal painting, etc., and other works, at Connaught-road, East Hove (Davigdor-road), Ellen-street, etc., schools, for the Education Committee. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove:—

—	Connaught-road.	East Hove.	Ellen-street.	George-street.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
J. S. Hill	19 10 0	5 10 0	135 0 0	80 0 0	240 0 0
W. A. McKellar	11 8 0	7 6 0	148 0 0	62 0 0	225 0 0
A. W. Leney	6 0 0	6 15 0	96 10 0	40 0 0	149 5 0
Gates & Sons	5 5 0	5 10 0	79 10 0	35 0 0	120 0 0
Olliver & Sons, St. Mark's-street, Kemp Town, Brighton*.....	3 15 0	5 10 0	83 11 0	29 0 0	118 15 0

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3470. AUGUST 7, 1909.

Contents.

	PAGE
The London Building Acts Amendment	147
The National Trust Report	149
Notes	149
The Trade Disputes Act	150
Cottage Exhibition Manchester	151
The Royal Archæological Institute at Lincoln	151
The Chemical and Microscopic Study of Mortar, Cement, and Pozzuolana	152
Jesus Hospital, Lyddington	153
Notes from France	155
Projected New Buildings in the Provinces	155
A Concrete Reservoir	155
The Royal Sanitary Congress at Leeds	156
Meetings	160
Westminster City Council	160
Fifty Years Ago	160
Illustrations:—	
St. Leonard's, Shoreditch, Church	160
"Egypt House," New Broad-street, E.C.	160
Tomb of Philippe Pot	161
Sword Rest, All Hallows Church, Lombard-street	161
Design for a Fountain	161
Competition News	161
Correspondence:—	
Cheddar Cliffs	161
Whitgift Hospital	162
The Budget and Building	162
London and District Borough Councils	162
Metropolitan Asylums Board	163
Builders' Benevolent Institution	163
Obituary	163
General Building News	163
Appointment	164
Miscellaneous	164
Capital and Labour	165
Law Reports:—	
Case under the London Building Act, 1894	165
Architect's Action against Builders and Contractors	165
Borough Engineers as Arbitrators	166
Patents	166
Some Recent Sales	167
List of Competitions, Contracts, etc., Open	168
Prices Current	171
Tenders	172

Illustrations.

Late Renaissance Churches of London.—VIII. St. Leonard's, Shoreditch. Drawn by Mr. John Quekett.

"Egypt House," New Broad-street E.C. Mr. F. W. Marks, F.R.I.B.A., Architect.

Tomb of Philippe Pot (in the Louvre). From a Sketch by Mr. Sidney Toy.

Sword Rest, All Hallows, Lombard-street. Drawn by Mr. F. J. Carmichael.

Design for a Fountain for a Public Park. By Mr. Percy May (*Builder* Competition: Fourth "Mention").

Illustrations in Text.

	PAGE
The Hall, Lyddington Bede House	153
Jesus Hospital, Lyddington, Rutland	154
Illustrations of Concrete Reservoir for the London Hydraulic Power Company:—	
Figs. 1 and 2	155
Figs. 3 and 4	156
Figs. 5 and 6	157
St. Leonard's, Shoreditch. Plan	160
"Egypt House," New Broad-street	161
Whitgift Hospital, Croydon: Overmantel, the Audience Chamber	162

The London Building Acts Amendment.

In the proposals formulated by the County Council for the amendment of the London Building Acts 1894 to 1908 before inclusion in the General Powers Bill brought before the present session of Parliament, the clauses relating to steel skeleton construction and reinforced concrete structures were somewhat modified, so that the proposed regulations took the form in which they appeared in the *Builder* of July 3. Subsequent to that date further amendments were made, as the result of suggestions put forward during the consideration of the rules by Mr. Mooney's Select Committee of the House of Commons.

Although the amendment of the existing Acts was undertaken in consequence of urgent requests from the Royal Institute of British Architects, the Institution of Civil Engineers, and the Surveyors' Institution, it is somewhat unfortunate that the Building Acts Committee of the County Council did not adopt the very desirable policy of taking those bodies fully into their confidence and of inviting them to collaborate in the delicate and highly technical work of preparing acceptable regulations. One consequence of this isolated action was that all three institutions felt bound to appear in opposition to the Bill; and another of far more consequence is that several clauses, notwithstanding the amendments successively introduced, are still capable of improvement.

In the present article we draw attention to some of the clauses still requiring amendment, hoping that our suggestions may be taken in good part by the technical advisers of the County Council, and considered also by the professional institutions concerned, before the regulations are passed by the House of Lords' Committee.

Clause 29 contains a definition which is not quite adequate. We refer to the words, "the expression 'girder' shall mean a metal girder." The definition is inadequate because it takes no account of beams not acting as *girders*, or of joists which are specifically mentioned in other clauses, and does not explain what is meant by a girder. Although the terms *beam* and *girder* are sometimes used indiscriminately, it should be clearly understood that a *girder* is a main beam girding or binding a structure and in turn supporting secondary beams or *joists*. Consequently the definition in the clause should read "the expression 'beam' shall mean a metal beam whether acting as a girder or as a joist."

The same clause seems to allow just a little loophole for undesirable work. If read literally we think the words in lines 3 and 4 of the second paragraph may be interpreted to sanction the construction of a pillar by bolting together a number of independent stanchions. Any piece of rolled or otherwise prepared metal can be applied as a stanchion. Consequently there is nothing in the wording of this clause to hinder a builder from bolting together a number of T or channel bars to form a pillar, instead of having them riveted as they should be. The practice of bolting together the elements of a pillar requires some clearly defined limitation.

Clause 30 refers in the opening paragraph to "buildings wherein the loads and stresses are transmitted to the foundations by a skeleton framework of metal." Here there is obviously a little slip, for the stresses developed in structural members cannot be transferred from one to another, and each must necessarily retain the stresses to which it is subject, the loads alone being transmitted down to the foundations, where, of course, other stresses, due to the transmitted loads, are developed, these stresses being additional to the intransferable stresses in the construction above.

This clause is also rather vague in the respect that it does not state what is meant by a skeleton framework. If lines 25 and 26 are to be taken as a criterion, the idea apparently is that the skeleton consists merely of exterior pillars and beams, the foundations, interior pillars, and interior beams, being apart from and independent of the main framework. Decidedly that is not the proper conception of skeleton framework, the stability and rigidity of which depend very largely upon connexion with the foundations (which may be or not part of the skeleton) and upon the bracing afforded by transverse and other interior structural members, including roof principals. By altering the wording so as to include in the framework all essential structural members there would be no risk of misconception on this important point.

Sect. (1) properly specifies the quality of rolled steel to be used in skeleton construction, but nothing whatever is said concerning the quality of steel which has not been rolled, nor is there a single word relative to the quality or physical properties of wrought iron or cast iron. As Clause 29 authorises any kind of iron, steel, or other standardised structural metal to be used for the skeleton framework, we certainly ought to have some stipulation as to the quality of iron and steel other than rolled steel. We refer hereafter to powers for defining the conditions applying to the "other standardised structural metal" mentioned in this clause.

Sect. (6), as altered by the Select

Digitized by Google

Committee, allows considerably greater latitude than was originally offered by the County Council in respect of security against buckling, a reasonable concession which will be appreciated generally.

Sect. (8) now contains a wise addition limiting the employment of separators to the connexion of girders or joists "closely adjacent to one another," the clause as originally drawn having overlooked this very essential detail. Even as the section now stands it does not err on the side of stringency, girders connected by separators and bolts being allowed in the skeleton framework, and no stipulation being made as to the form of separators to be used. In cases where two or more rolled sections are to be applied side by side and intended to act together as one beam in the main framework, the object desired would be more satisfactorily attained by riveting cover plates to the top and bottom flanges so as to form a compound girder. It is true that the nature of the connexions must be such as to satisfy the District Surveyor, a safeguard which may not improbably lead to some differences of opinion between that official and the advocate of bolted connexions. Two minor points in this section to which the attention of the County Council should be directed are that, as now worded, no metal other than iron may be used for separators, and that no indication is given as to the metal of which bolts and rivets and plates are to be made. It is just as well to say exactly what is meant in a document of this kind.

Sect. (10), providing that "Rivets shall be used in all cases where reasonably practicable," is apparently not limited in its application, and we assume is intended to govern the formation of connexions such as those mentioned in Sect. (8) as well as the making of joints throughout every part of the skeleton. This section also stipulates that "where bolts are used the ends shall be burred over." It might be added with advantage that bolts shall fill the holes with a specified minimum clearance, as loosely fitting bolts not only conduce to rickety joints, but are liable to severe shearing stresses and bending moments. The section would be improved by the addition of words defining the metal to be used in the form of rivets and bolts.

Sect. (11) (*a*), stating the requirement "that all party walls shall be of the thicknesses prescribed by the principal Acts," may appear at first sight injudicious on the ground that this demand will discourage the use of steel in the ends or sides of contiguous buildings, and thereby detract from the completeness and consequent rigidity of the metal framework. Similarly, it may appear to constitute a restriction upon those desiring to adopt the skeleton system in its entirety. But the requirement is quite reasonable, for there cannot very well be joint proprietorship in part of a steel skeleton. The remedy, as we understand the new regulations, is very simple—the only thing needful to obviate the disadvantage and possible hardship of having to build ordinary masonry walls being to construct all the outer walls of every building independently of adjoining structures, so that these parts of the construction come under the head of enclosing walls, the thickness of which need not exceed 13 in. This alternative is very common in the United States, and causes no difficulty, although it often becomes necessary to design cantilever foundations for some or all of the wall columns situated alongside adjoining premises.

Sect. (12) permits "the use of stone terra-cotta or concrete as an external facing for buildings, provided that such facing shall be at least 4 in. thick and shall be properly bonded or secured together and to the adjoining work." We presume that the words "external facing" are really intended to denote what is elsewhere described as an "external enclosure" or an "enclosing wall." If read exactly as printed, they would evidently mean that anyone desiring to decorate the exterior of a building with terra-cotta tiles would have to apply tiles 4 in. thick, and that anyone proposing to cover the nakedness of brick with a rendering of cement and sand or to apply a roughcast finish would be bound by the same prescribed thickness. A slight verbal amendment of the section seems to be indicated as desirable for the avoidance of ambiguity.

Sect. (14) (*d*) gives some indication as to the necessary area of metal for bolts, but this advice is not of any practical value in the absence of information concerning the material of which the bolts are intended to be made.

We may here suggest that it would be convenient if in Sects. (13), (14), and (15) a clear distinction were drawn between a complete pillar and the superimposed lengths of a pillar comprising two or more lengths. The absence of such differentiation is a little confusing, especially when Sects. (13) (*c*), (14) (*c*), and (15) are compared with the accompanying paragraphs.

Sect. (17) contains a very drastic prohibition which we feel sure was never intended by the Council, and which has evidently escaped the vigilance of all the lawyers and expert witnesses retained in opposition to the new regulations. The wording of the clause as passed by the Select Committee means nothing less than an absolute embargo on steel floor girders and joists, on steel members in staircases, on steel pillars and beams in the enclosing walls of floors and staircases, and on steel as supports for floors and staircases. The demand that all floors and staircases, together with their enclosing walls, shall be constructed "throughout" of fire-resisting materials and be carried upon supports of fire-resisting materials, is apparently a clerical error which requires qualification by the addition of words permitting the employment of iron, steel, or other standardised structural metal if adequately protected against fire.

Sect. (19) has been altered somewhat by the Select Committee in respect of the permissible floor loads. For some reason which we do not know, the original references to buildings intended to be used as hotels, hospitals, workhouses, and lodging-houses have been struck out, possibly on the ground that these are "domestic" buildings. "Public" buildings are also excluded from consideration, an alteration which we cannot regard as an amendment of the section drafted by the County Council.

In view of the small loads stated for one or two classes of buildings, and of the paragraph added by the Council (after the preparation of their first draft) governing cases where the superimposed floor or roof loads are to exceed those specified, we suggest that the concluding words in the first paragraph of Sect. (19) (*c*) might appropriately be altered from "shall be estimated as equivalent to the following dead load" to read "shall be estimated as not less than the following dead load."

A point not free from ambiguity in the paragraph dealing with roof loads is the precise meaning of the words, "the superimposed load . . . shall be estimated at twenty-eight pounds per square foot of sloping surface." Does this mean that the sloping surface is to be measured vertically or measured on a sloping plane? If the latter is meant it would be just as well to say so, thereby avoiding all risk of misunderstanding, and making the phraseology to accord with that of the next sentence, where for other roofs the superimposed load is required to be "measured on a horizontal plane."

Sect. (22) contains tables for the working stresses in cast-iron and mild-steel pillars, the values being perfectly safe, although not appearing to have been computed by any formula with which we are acquainted.

Sect. (23) states working stresses for wrought-iron pillars in terms of those for mild steel.

Sect. (24) makes up in measure for the absence previously noted of data as to the quality and properties of cast iron, wrought iron, and mild steel, and the next two sections lay down rules for pressures on foundations.

Sect. (30), as now numbered, and inserted by the Select Committee, is welcome as giving power for the employment of skeleton construction in the extension or alteration of any existing building.

Sect. (31), as now numbered, and also inserted by the Select Committee, makes good a deficiency in the draft of the County Council by conferring powers for the formulation of conditions under which any new standardised structural metals may be used, and also serves a useful purpose in defining such metals, as those which may hereafter be standardised by the Engineering Standards Committee.

Sect. (32), formerly Sect. 30, is one dealing with the vexed question of submitting working drawings and detailed calculations for skeleton buildings. Notwithstanding the objections expressed by some witnesses to the presentation of these details, we do not quite see what other safeguard could be provided in connexion with the introduction of the skeleton system. That the average architect will have to invite the co-operation of a civil engineer in the completion of the design is a foregone conclusion, and it should be a relief for the architect to be able to secure official approval of the drawings. But we should be far more satisfied with the arrangement if the District Surveyors were known to possess the engineering

Digitized by Google

training and experience necessary for pronouncing upon the safety and suitability of designs such as will be submitted to them. Until a new generation of District Surveyors comes on the scene, the present holders of the office will be obliged to rely largely upon the aid of engineering assistants, which is not altogether desirable.

Sect. (34), formerly Sect. (33), embodies an important alteration, for, instead of constituting the County Council as the Court of Appeal against requirements of the District Surveyors, the Select Committee refer dissatisfied persons to a petty sessional court.

Sect. (35), formerly Sect. (34), is widened in scope and constitutes the Tribunal of Appeal as a resort for those who may be dissatisfied with any exercise of the discretionary powers granted to the County Council. While not doubting the perfect impartiality of the Council, we believe that builders and others engaged in structural work will think it more satisfactory to have the right of appeal to independent tribunals than to feel themselves placed absolutely in the hands of the County Council.

Clause 31, now including four sections, is one of great importance, conferring upon the County Council the power to make regulations for the construction of reinforced concrete buildings. As the provisions of the clause have been settled, the responsibility for drawing up rules is vested absolutely in the Council, which we presume means that the work will be performed by officials at the County Hall.

While there is yet time we take the opportunity of expressing the hope that the Council will not fail to invite the co-operation of the leading architectural and engineering institutions and of practical experts in reinforced concrete, with the aim of arriving at a code of regulations which, while duly considering the interests of the public, shall also be acceptable to all concerned in the design and execution of works in the new structural material.

THE NATIONAL TRUST REPORT.

THE National Trust for Places of Historic Interest or Natural Beauty have just issued their Report for 1908–1909, which merits more than a passing notice, giving as it does such a satisfactory impression as to the extent and importance of the work which the Trust is carrying on. We confess that on the first formation of the Trust we were somewhat doubtful whether its action would meet, in a country where it is so difficult to arouse interest in places of historical or natural value, with the amount of public support without which the most enlightened and best-intentioned society can effect but little. But the result, so far, is an agreeable surprise. The Trust has established itself as a body in which the educated public of this country has confidence; and its example seems to have aroused a spirit of liberality on the part of land-owners, who have in several instances made considerable gifts to the Trust of places which they are confident will be thus preserved permanently for public enjoyment.

The first mentioned, and the most important in extent, of the new acquisitions, is Ludshott Common; 600 acres, purchased mainly through the generous action of a committee of local residents, who have raised the purchase money and vested the land in the Trust; while nearly 60 acres of adjacent land have been presented by their owner, Miss James. Grayswood Common, in the same neighbourhood, has also been purchased by subscription among neighbouring residents. All this represents picturesque open country which is now preserved for ever from being turned into building lots.

We cannot refer to all the points mentioned in the Report, but we may note that the Trust are endeavouring to raise funds for the purchase of the most picturesque portion of Cheddar Cliffs, and thereby putting a stop to that spoliation of the place by quarrying, which has been more than once referred to in our columns. Upwards of 1,000*l.* will be needed, and towards this sum the Council of the Trust now appeal for subscriptions. A gift is recorded of 50 acres of land at Morte Point, between Ilfracombe and Barnstaple—a gift from the owner, Miss Chichester, who, as the Report records, "might have turned Morte Point to profit in connexion with the new settlement, but has preferred to preserve it as a spot accessible to all who resort to the neighbourhood, a beautiful feature of the coast." All honour to Miss Chichester, and may she have many imitators!

Among the further contents of the Report we note that the Trust is hoping to do something definite towards preserving Leigh Woods, opposite Clifton, from further destruction by quarrying; and then we come to the serious matter of the proposed installation of sewage disposal works on the banks of Windermere, the effluent from which will pass into the lake. This latter item seems to us the worst part of the threat. The sewage works can hardly be attractive in appearance, but this is almost a minor matter compared with the sin of polluting the waters of the lake with sewage effluent, which can only in a conventional sense be regarded as purified. The sewage to be dealt with is that of the towns of Windermere and Bowness, forming a permanent population of 5,000, doubled during the summer months by the influx of visitors.

> "It is not denied that the local authorities have to meet a difficult situation, but the destruction of the amenities of Windermere is a matter which will vitally affect the pleasure and the well-being of thousands of workers in the great industrial towns of the North, who there seek the recreative and recuperative benefits of their annual holiday.

The Trust have memorialised the President of the Local Government Board on the subject (the Urban District Council of Windermere having applied for sanction to borrow 18,000*l.* for the scheme), and they suggest the ultimate adoption of a comprehensive policy by the towns of Bowness, Windermere, Troutbeck, Ambleside, and Grasmere, for the joint drainage of all their sewage into the sea; in the interim, as they say, the sewage should at least be taken to a more distant and less frequented site.

Two subjects specially connected with ancient architecture are touched upon in the Report. One is the preservation of the character of Barton-street and Cowley-street, Westminster. These are among the last examples left to us of the old-fashioned quiet-looking London street houses, and they may be said to have not only an archæological but a certain commercial value, in the fact that these old-fashioned residential streets are rather sought after by architects and other persons of artistic tastes in consequence of their pleasing character, as the Report puts it, "of charm and quiet dignity." The Report proceeds:—

> "Unfortunately, as it seems to the Council, the owners of the property, the Ecclesiastical Commissioners, have sanctioned the destruction of the two houses which form the corner of Barton and Cowley streets, in order that on their site may be erected a larger, lighter, and more airy house for a new tenant. By this action a severe blow has been struck at the architectural unity of the streets. Considering that there is a large class of persons requiring small but interesting and artistically decorated houses of the kind to be found in these streets, and that there is no difficulty in finding houses of a more pretentious character in other parts of Westminster, Belgravia, and Chelsea, it seems unfortunate that these houses should have been sacrificed."

It is indeed, and one may fear that this is but the beginning of the end of one of the most pleasing and picturesque corners of London. The almshouses of Sir Robert Geffery's Charity, which the Council had previously been instrumental in saving from destruction, are now again threatened, the Ironmongers' Company, who are the owners of the building, having made fresh efforts to get the decision of the Charity Commissioners on the subject reversed. The Trust is taking steps to oppose these efforts.

We wish continued success to the National Trust in their endeavour to preserve buildings and sites which are of interest, for the enjoyment of future generations.

NOTES.

The Finance Bill and Playgrounds.

THE far-reaching consequences of the Finance Bill in regard to land taxation are exemplified by the well-founded apprehension which they are causing to cricket and football clubs. Mr. Lloyd George's zeal to tax land-owners has caused him to be blind to the many ways in which his projects will injuriously affect the general community, and one of these is the inevitably increased cost to recreation clubs of the grounds which they now use, if not in some cases their actual loss. At a time when it is impossible to take up a daily paper without reading some point in regard to the need of sustaining the physical efficiency of Englishmen, the Government introduces a measure, one effect of which will be to lessen the opportunities for physical exercise. It is obvious, therefore, that all persons interested in the reasonable recreation of the people should combine to press for such exemptions in the Finance Bill as will prevent the extinction of recreation grounds near our large towns.

The New York Building Code.

THE new regulations proposed by the majority of the Buildings Committee have been adopted, with some alterations, by the Board of Aldermen, and we understand that they will shortly come into

Digitized by Google

force. Notwithstanding the amendments made in the original draft the new code is not likely to give satisfaction. One of the chief objections entertained to it is that undue advantages are given to certain structural materials by creating unfair restrictions against the use of other equally suitable materials, another undesirable feature being the arbitrary powers conferred on the superintendent of buildings. Our contemporary, the *Engineering Record*, considers that "the whole history of the revision has been so discreditable to the city that the recent steps taken in connexion with it need cause no surprise." This expression of opinion is quite sufficient to indicate the undesirability of regarding the new code as a model for building regulations in Great Britain.

Repetitive Loads on Concrete Beams.

At the annual meeting of the American Society for Testing Materials, Professor Berry, of Pennsylvania University, read a paper describing some new experiments on reinforced concrete beams under frequently repeated loads. He found that one and a quarter million applications of loads developing the stresses of from 16,000 to 20,000 lb. per square inch in the steel and from 500 to 600 lb. per square inch in the concrete did not materially affect the ultimate strength of the members, nor did it appreciably influence the maximum deflection, the adhesion between the concrete and the steel, the position of the neutral axis, nor the ultimate deformation of the concrete. These conclusions are of interest as suggesting the absence of fatigue or progressive failure in reinforced concrete structures exposed to vibratory stresses.

Hydrolytic Sewage Purification.

In the *Journal* of the Royal Sanitary Institute a paper by Mr. A. E. Collins, M.Inst.C.E., deals at length with the Travis system of sewage purification which has recently been inaugurated at Norwich. The author is avowedly a believer in the theory put forward by Dr. Travis, and sometimes termed the Hampton doctrine. The subject is one of highly debatable character. Dr. Travis and his disciples contend that the purification of sewage is primarily and essentially physical, and only incidentally and consecutively vital. Mr. Collins considers that the Hampton experiments have demonstrated the purification process to be strictly a reversal of the collection and conveyance processes, the work of purification being a continuous de-solution process leading to the increasing purification of the liquid passing on and to the augmentation of deposited matter remaining behind. The treatment area for the solid impurities abstracted is described as the breeding ground of organisms and plants tending to the slow conversion of the stored organic matters. Views such as these are by no means generally accepted, and we do not propose to enter upon the discussion of an involved subject belonging to chemists and bacteriologists rather than to those engaged in constructive work. One point rendered tolerably clear by the paper in question is that, whether Dr. Travis interprets the results obtained rightly or wrongly, his system of purification is one capable of performing its duty in an efficient manner.

Gresham College and Trust.

As we announced in our last issue, page 136 *ante*, the proposed scheme for remodelling the interior of the College at a computed outlay of 4,000*l*., is abandoned. The site and materials will now be disposed of accordingly. The present buildings were erected at the corner of Gresham and Basinghall streets in 1842–3 after George Smith's designs. They comprise a lecture theatre, library, professors' rooms, etc. They are, however, ill-adapted to later-day requirements, and, indeed, are liable to a disaster in case of fire. Sir Thomas Gresham founded what he intended to be a third University—the University of London in fact—by his will, which he published in 1575, four years before his death. He devised his estate in trust, directing that, subject to his widow's life interest, one moiety of the rents, mainly derived from the shops, or pawns, of his Royal Exchange, should pass to the Corporation, and the other moiety to the Mercers' Company for charitable purposes and for the maintenance of seven lectureships; the professors were to be paid 50*l*. per annum, and to occupy residential quarters in Gresham's own "mansion-house," which, with its almshouses and gardens, stood between Bishopsgate and Old Broad streets—*confer* the bird's-eye view, by Vertue, drawn for J. Ward's "Lives of the Gresham Professors," 1740. At Lady Gresham's death, 1597, the trust derived 751*l*. yearly from the rentals of shops in the Royal Exchange. Having fallen into decay, Gresham's house was replaced in 1768 by the (old) Excise Office, which in its turn gave way to two blocks of offices, Gresham House, built in 1853–4, after designs by Sir William Tite and E. N. Clifton. The lectures were then given in a room in the south-east corner of the (old) Royal Exchange, until the destruction of that building by fire.

Excavations at Ostia.

The excavations at Ostia, close to the mouth of the Tiber, are still being continued, and a fine female statue has recently been brought to light, representing, perhaps, a member of the imperial house of the period of Hadrian, with the attributes of Ceres (poppies and ears of corn) in her hands.

Art and Commerce.

We have received from Messrs. Selfridge & Co. a souvenir of the opening of their store, which takes the form of a series of reproductions in miniature of the full-page advertisements (designed for the most part by well-known artists) which appeared in the London dailies between March 15 and 22 of this year. Advertising at the present day occupies so wide a stage in the material world before our eyes that we cannot view with indifference any attempt to secure the co-operation of the arts in proclaiming the merits of our wares. A world-famed soap firm, we believe, were first in the field with their purchase of a picture by Sir J. E. Millais. In this case, however, the picture was not designed for the particular purpose of advertising the cleansing commodity; in the present instance we have a genuine *rapprochement* between art and commerce; art, in fact, in the *rôle* of window-dresser. Not to appear ungrateful for the web of enchantment which these artists have woven around the very simple business of buying and selling at a profit, we would desire to place on record our sense of the artistic value of these cartoons. Mr. Bernard Partridge's drawing of a Herald is a fine piece of work; "Labor Omnia Vincit," by Mr. Harold Nelson, possesses great dignity; Mr. R. Anning Bell's "Confidence" is exceptionally pretty. Many of the allegorical figures introduced by the artists carry small models of the building, completely out in perspective; Mr. Fred Pegram alone does not err in this respect, having had the courage to draw it out afresh, in place of reducing the official perspective.

THE TRADE DISPUTES ACT.

The House of Lords have given a most important decision in the case Conway *v* Wade, which will be found noted as decided in the Court of Appeal (the *Builder*, August 15 last) and in the Divisional Court (the *Builder*, June 20, 1908). The plaintiff in the action was a workman who had been dismissed by his employers because the defendant, a district delegate of the union, but acting without authority from the union, had threatened the employers to call out the union men in their employ if the plaintiff was retained in their service. The reason for this course of action on the part of the defendant was that the plaintiff some years before, when a member of another branch of the union, had neglected to pay a fine imposed upon him by the union. The jury before whom the case was tried had held that the defendant had uttered a threat to the man's employers, and that it did prevent, or was intended to prevent, the plaintiff from getting or retaining employment, and that the threat was uttered to compel him to pay the fine and to punish him for not paying it. They also found that the threat was not uttered because the men did object to work with the plaintiff, and that there was not a dispute existing or in contemplation by the men. On these findings, amongst others, judgment was entered for the plaintiff. The Divisional Court upheld these findings and the judgment based upon them, but the Court of Appeal entered judgment for the defendant on the ground that there was one dispute in existence arising out of the non-payment of the fine, and another in contemplation if the man was retained in the employers' service, and, therefore, that sect. 3 of the Trade Disputes Act afforded a defence to the action. That section is as follows:—"An Act done by a person in contemplation or furtherance of a trade dispute shall not be actionable on the ground only that it induces some other person to break a contract of employment, or that it is an interference with the trade, business, or employment of some other person, or with the right of some other person to dispose of his capital or his labour as he wills." The House of Lords accepted the findings of the jury, and restored the judgment of the Divisional Court. The judgments delivered in the House are not yet printed and published in full, but the judgment of the Lord Chancellor as published in the *Times* throws much light on the section, and does much to remove the strictures passed upon the statute in the Court of Appeal. He points out that before the passing of the Trade Disputes Act, 1906, if the inducement not to employ a person or not to serve a person was accompanied with violence or threat, there was a ground for action; also if the inducement without threat or violence involved breach of contract,

Digitized by Google

then again an action would lie. But if there was neither threat nor violence nor breach of contract, then the law was doubtful both as regards the ground for action and the justification. His Lordship then held that when there were threats or violence the section introduced no change in the law, for in such cases another ground of action exists to that indicated in the section, but that if a contract is broken, or if without breach of any contract there is interference with the trade, business, or employment of some other person, then the statute defines what may be pleaded in justification, *i.e.*, that what was done was done "in contemplation or furtherance of a trade dispute," but that that means that the act must have been done in expectation of and with a view to a dispute which is imminent, or in support of one side of an existing dispute. Thus, whereas the Court of Appeal had held that the section would protect any mischief-maker or busybody, the House of Lords have held that a mere personal quarrel or an agitation, or a grumbling are not within the section.

COTTAGE EXHIBITION, MANCHESTER.

THERE is on view at the Manchester Art Gallery an exhibition of cottage designs which has been got up by the Manchester Institution, with the object of stimulating interest in suburban architecture. Our first thought on entering the exhibition was that this was a somewhat needless collection of more or less good cottage designs by various architects from various parts of the country; the sort of thing which you could find as well illustrated in one or two books that have been recently published, with the slight advantage of containing more photographs of the work when completed than ornamental perspective sketches of the architects. Frankly, we do not think this sort of thing does much good. There will be a sprinkling of ladies who take a sentimental interest in the pretty drawings and views, and a few young architects hoping to pick up some suggestions; but the people who are building up the suburbs themselves will not be touched. The whole idea is too much in the clouds—a series of cottages unrelated to any particular neighbourhood—cottages in the air, as it were. Everyone knows that pretty cottages have been and can be built, but to associate any of those on view with some of the dingy old suburbs or flaming new ones round Manchester would need too wild an excursion into imagination for any ordinary prosaic onlooker. Any jerry-builder, moreover, if he could be decoyed there, would be quite right in laughing at nine-tenths of the cottages shown, as quite unsuitable to the suburbs of a large town; they are, in fact, the ideal country cottage (more or less) that every town dweller hankers after as something too remote to be realised.

This is a first impression; on looking further round one notices several plans of "garden suburbs" either existing or chimerical, and, though these hardly refer to a town like Manchester, it is interesting to see them together and to compare their different merits. There is a cottage estate at Leigh, in Kent, Mr. Rowntree's Village Trust at Earswick, near York, and the Manchester Tenants' Burnage Lane Estate—all attempts in the same direction; there is also an interesting competition plan for a garden suburb on a steep hillside by Mr. E. Waterhouse, of Middleton.

Still, these isolated cottages and examples of philanthropic suburbs hardly justify an exhibition were it not for three separate drawings prepared by the Manchester Society of Architects. These three drawings are worth coming to see and worth holding an exhibition for, and they illustrate a definite scheme for dealing with a certain oasis on the outskirts of Manchester surrounded by the suburbs of Rushholme, Withington, and Fallowfield, and about to be covered with the ordinary class of jerry-built property.

The drawings consist of a plan drawn in red ink on to the ordnance survey map and two bird's-eye views, which are not signed, but in which we recognised the delightful colouring of Mr. Edgar Wood. We understand that this scheme was an afterthought to the exhibition, which is hard to realise, as without it the collection of cottages lacks cohesion, whereas, with it as a centre point, the isolated cottages might be taken as possible larger scale illustration of the dots shown on the bird's-eye views (though, as already mentioned, the greater part would be quite unsuited to such a position).

The plan itself, which is divided into two main divisions by a railway (the Great Central), which, with a brook running beside it, might be difficult for a lay mind to grasp, but the bird's-eye views, each illustrating one of these main divisions, must bring home to the dullest intellect what is the meaning of an orderly design in place of the miserable blind growth to which we are accustomed. The sudden intrusion on the north side of this lay-out of a hideously irregular wedge of jerry-built property shows at a glance the object of a plan of this sort, and the desirability of a certain restriction as to the number of houses per acre that certain districts should have.

In the bird's-eye views the houses are shown perhaps rather too small, giving too much the impression of a garden suburb with detached cottages on separate plots; this is not what was intended, and would be unsuitable to so confined a site. The plan shows twenty houses to the acre, which is a reasonable amount, and we understand that the sketches were prepared in a great hurry, and this slightly erroneous appearance only became evident when the cottages and greenery were coloured in. The houses should have merely bulked rather larger in proportion to the green spaces, in order to have rendered these drawings entirely effective interpreters of the plan.

Now we would suggest that the use to be made of this exhibition, and particularly of these three plans, should be somewhat as follows:—The whole should be boiled down and concentrated into a pamphlet after the manner which has been adopted in America, which, by dint of a large and broadcast circulation, might arouse public opinion. At present a visitor is entirely distracted from the main issue by single cottages which take his fancy. In this pamphlet, which might be financed by some of the larger-minded commercial men in the city, the three drawings would be made the centre point and *raison d'être* of the whole thing; the rest would be merely illustration by way of suggestion and analogy; it would be accompanied by a report showing the possibility from a financial aspect, and suggestions as the best means of carrying it into execution. If public interest were thus aroused, the town authorities (if the Town Planning Bill passes, to give them powers) might be induced to sanction a building plan of which the present is merely put forward by the Manchester Society of Architects (the right body to do so) as a hint to be discussed and threshed out by a special committee appointed for the purpose.

The formation of a "building society of public utility," on similar lines to those adopted in Germany and similarly financed, would enable this suburb to be created without the aid of the jerry-builder. The methods upon which these building societies are worked is clearly set forth in Mr. T. C. Horsfall's "Example of Germany," and Mr. Horsfall himself, being a Manchester man, would no doubt advise the committee in this branch of the work.

Here would be a practical beginning of a movement for improving the suburbs of Manchester, and if it were found possible in one corner of the town, why should not the whole vast area of city and suburbs be treated comprehensively in the same way, and a building plan adopted for the whole town of Manchester?

THE ROYAL ARCHÆOLOGICAL INSTITUTE AT LINCOLN.*

ON Tuesday, July 27, the party first went by train to Navenby and thence by carriage to Somerton Castle. This was built by Antony Bek, Bishop of Durham, in 1281, and consisted originally of a large quadrangular court with round towers at the corners, surrounded by a remarkable series of banks and ditches. The remains, which were described by the Rev. A. F. Sutton, consist of two ruined towers, one having a very fine vaulted basement, and of a third tower, still fairly complete, from its having been incorporated in a late Elizabethan manor house. Navenby Church was next visited, also under Mr. Sutton's guidance. Its chief feature is the fine XIVth century chancel, with a richly carved Easter sepulchre in the north wall. The party then drove back to Lincoln, and after luncheon assembled in the choir of the Minster, where Dr. Mansel Sympson gave an outline of its architectural history. Mr. Hope also added some remarks on the plan and arrangements of the remarkable eastern limb of St. Hugh's Church, some foundations of which have just been uncovered outside the north wall of the present presbytery. The building was next perambulated under Dr. Sympson's guidance, and the recently exposed foundations of Bishop Remi's Church were inspected with interest. After tea in the Castle grounds, by the kind invitation of the Mayor and the Sheriff of Lincoln, and an inspection of an almost complete collection of rubbings of Lincolnshire brasses, exhibited by Mr. William Scorer, the outside of the Minster was examined, Dr. Sympson again acting as guide, but under the disadvantage of a shower of rain. At the evening meeting the Rev. A. du Boulay Hill read a paper on recent excavations at Beauvale Charterhouse, Notts, which have revealed an almost complete plan of the church and of the great cloister, with its surrounding cells and garden.

On Wednesday, the 28th, after a railway journey to Sleaford, the party drove to Ewerby, where the Rev. A. F. Sutton described the charming little XIVth century church, which is noteworthy for its fine broach spire. During a recent restoration the original plaster has been most unfortunately stripped from the walls throughout the interior.

Heckington Church was next visited, again under the guidance of Mr. Sutton. This magnificent church is well known as a perfect example of pure XIVth century work, and the rich work of the sedilia and Easter sepulchre received special attention, as did also the fine external details of the church.

After lunch the drive was continued to Helpringham, passing on the way the Saxon tower of Great Hale Church. Helpringham Church, which was also described by Mr. Sutton, contains good work of the XIIIth and XIVth centuries, but is chiefly noteworthy for its excellent Jacobean pewing and pulpit. It also contains a good rood screen.

Silk Willoughby Church was the next objective. It has lately undergone a "restoration," with much renewing of roofs, but still contains a good deal of its fine original pewing and an excellent rood screen. The visitors seemed to derive more pleasure in examining the modern painted glass by Mr. Christopher Whall in the east window than in inspecting the many interesting features of the church.

The final stage of the day's programme was Sleaford Church, which was described by Mr. Sutton. It has a fine and well-proportioned nave and aisles of late XIVth century work, with an engaged tower and spire of earlier date, and a good chancel. Mr. Hope pointed out that this chancel could be dated by an inscription of 1406 carved beneath the east window outside, and he also called attention to the remarkable series of consecration

* Concluded from last week.

Digitized by Google

crosses under the chancel windows and on the walls within. The fine rood screen, with its overhanging front, is noteworthy. At the evening meeting a graphic account of the civic insignia of Lincoln was given by Col. J. G. Williams, with the aid of a series of lantern slides.

The morning of Thursday, the 29th, was given up to an inspection of Grantham Church, after an exhaustive description of its architectural history by Mr. A. Hamilton Thompson. This fine church is not so well-known as it deserves, despite the conspicuousness of its soaring tower and spire as seen from the railway. The eastern half of the nave exhibits interesting evidence of its late XIIth century origin, with clustered piers and a clearstory of round-headed windows over, but the original pier arches were converted into acutely pointed ones when the nave was extended westward by two bays late in the XIIIth century. About the same time the north aisle was enlarged and the western tower begun, probably to replace an older one in the middle of the church. The south aisle followed, together with a large south aisle to the rebuilt chancel. The north aisle of the chancel belongs to the XVth century, when larger windows were inserted in the east end of the chancel and other parts of the church. There is a south porch of the XIIIth century and a larger one of later date on the north, with twin turrets to a destroyed upper chamber, perhaps for the exposition of St. Wulfran's relics, and a curious passage through the lower walls next the church. On the north of the chancel is a late Tudor chantry chapel, now a vestry, and beneath the added south chapel is a vaulted bonehole or charnel, with a stone altar at the east end. Excepting the font, all the fittings and furniture are new.

Luncheon was served in the Angel Inn, the street front of which consists of an interesting XVth century gatehouse with oriel windows, with vaulted ceilings on either side of the entrance, which is surmounted by another oriel supported by a large angel holding out a crown.

After luncheon the party proceeded in carriages first to Great Ponton, when the rich western tower of an otherwise uninteresting church, built by Anthony Ellys, a woolstapler, in 1519, commanded attention. Hard by is the builder's house, with its stepped gable and some good windows, now subdivided into three tenements.

The journey was continued thence to Bassingthorpe, where the church, which has a broach spire, was described by Mr. A. H. Thompson. But the chief object of interest was the remains of the fine hall built by Thomas Coney, a Calais merchant, in 1568, upon parts of an earlier house, *circa* 1520. The later work includes a refined oriel window, but there is nothing of interest within the building.

The drive was next continued to Boothby Pagnell, which contains a fine church, partly Norman, partly of good XIVth century work, restored by Mr. J. L. Pearson in 1896. Here again the chief feature of interest was the very perfect late XIIth century manor house behind the present hall. It consists of a hall and great chamber, built above a vaulted undercroft, and reached by an external flight of steps up to the original entrance. The undercroft is also subdivided into a cellar, and a large room which perhaps served also as the kitchen, lighted by square-headed loops. The upper floor is lighted by coupled round-headed lights with dividing shafts and window-seats, and in the hall is a fine hooded fireplace, with joggled lintel and external circular chimney shaft. After a careful inspection of this interesting building, which has been judiciously repaired, the party returned to Grantham, and thence by special train to Lincoln.

In the evening the annual general business meeting was held, when the Report of the Council was read and the statement of accounts presented, showing the Institute to be in a prosperous condition financially. It was decided that next year's meeting should be held at Oxford. Afterwards the concluding meeting was held, when votes of thanks were passed to all who had contributed to the great success of the Lincoln Meeting of 1909, which was largely due to the untiring efforts and admirable arrangements of the Secretary, Mr. G. Hardinge-Tyler.

On Friday, the last regular day of the meeting, a special train conveyed the party to Long Sutton, where the fine church was described by the Rev. A. F. Sutton. Besides its detached XIIIth century tower, with its quaint lead-covered spire and pinnacles, the building is remarkable for the fine Norman arcade of the nave, with its arcaded clearstory, now within the church, through the widening of the aisles in the XVth century and consequent raising of the roofs. The present clearstory is a later addition. At the north-east corner of the chancel is a curious two-storied sacristy and treasury, with vaulted upper story. Mr. Hope contributed some remarks on the loss of King John's baggage train in the estuary of the Well-stream, between Long Sutton and Crosskeys, in 1216, and the Rev. J. O. Massingberd on the staple industries of the district during the XIVth and XVth centuries.

The journey was next continued in carriages to Gedney, when Mr. Sutton described the many interesting features of the beautiful lantern-like church, including the fine open roof of the nave, the curious inscribed early lock of the south door, and the richly coloured remains of the original glazing in the north aisle. The building has lately been judiciously repaired at the hands of Mr. W. D. Caröe.

Holbeach Church, which was next visited, is remarkable for the fine proportions of its lofty nave of XIVth century date, for the large windows in the basement story of the western tower, and for the curious north porch with the large battlemented round towers that flank its outer archway. In the north aisle is a beautifully carved stone effigy, *circa* 1360, of Sir Humphrey Littlebury, on a contemporary tomb of inferior workmanship.

After luncheon at Holbeach, Whaplode Church was the next objective. It has a fine Norman nave, with remains of an externally arcaded clearstory, the main lines of which were followed when the church was lengthened westwards in the XIIIth century. The beautiful XIIIth century tower stands semi-detached to the south-east of the nave, and has a later belfry story, and a chapel in its ground story open originally to the church by a wide arch. There is a fine open roof to the nave now, like other parts of the building, in a sad state of disrepair. Both the Society of Antiquaries and the Society for the Protection of Ancient Buildings have expressed approval of the plans for setting the church in order.

Moulton Church, which was next visited, affords a complete contrast to Whaplode Church as regards condition. It has a beautiful western tower and spire of the XIVth century, with remains of good imagery in three niches on the western face, and a nave and aisles of the XIIIth century. There is also an admirable rood-screen, with traces of colouring, and at the west end a remarkable stone font and cover, which Mr. Hope pointed out were obviously a local copy of the famous marble font by Grinling Gibbons, in St. James's Church, Piccadilly. This was subsequently confirmed by the vicar, the Rev. C. J. S. Ward, who showed from the churchwardens' accounts that the font was carved by William Tydd, of Moulton, in 1711.

The journey was then resumed to Spalding, where, after tea at Ayscough Fee Hall, a much altered red-brick Tudor mansion, the home of Maurice Johnson, the antiquary, the church was described by the Rev. F. F. Sutton. The middle portions are late XIIth century, to which date the curious round windows of the transept clearstories belong, but the nave arcades were raised, and other changes made in the XIIIth century, when a new tower was begun at the west end of the south aisle. There is an interesting chapel on the south-east and a good late aisle and north porch on the north-west, of the nave. A much-restored rood-screen is all that is left of the old fittings.

The party subsequently returned by special train to Lincoln.

Saturday, the 31st, was an extra day, with visits to Kirkstead and Tupholme Abbeys, and to the excavations on the site of Bardney Abbey.

Of the Cistercian Abbey of Kirkstead, nothing remains upon the mound-covered site except a lofty fragment of the gable end of the south transept of the church, of Norman date. Just clear of the site on the south is the ruinous but still roofed *capella extra portas*, a beautiful little building of rich XIIIth century work, which was described by Mr. W. H. St. John Hope. It retains the pews and XVIIth century "three-decker" of the time when it was used for Presbyterian services; also portions of the original XIIIth century screen of the ante-chapel, and part of the contemporary effigy of a knight in mail.

After luncheon at Woodhall Spa the journey was continued by a roundabout journey to Bardney, a halt being made on the way to inspect the remains of the Præmonstratensian Abbey of Tupholme. Mr. Hope explained these as showing the south side of the frater and its sub-vault, with a row of lancet windows and a beautiful little reader's pulpit.

The site of Bardney Abbey, which was the final objective, was of great interest to the visitors, who were privileged to see the extensive excavations now in progress under the direction of the Vicar of Bardney, the Rev. C. E. Laing. The plan of a large cruciform church has been fully traced, and its eastern part sufficiently cleared to reveal a large number of inscribed monumental slabs which have been left undisturbed by the destroyers. One complete and parts of two other altar slabs have been found, as well as a large quantity of wrought and carved stonework. It is hoped that the site of the nave may be sufficiently cleared shortly to allow of search being made for the foundations of the Saxon church founded here not later than 697.

The party subsequently returned to Lincoln, and thus concluded a most successful gathering.

THE CHEMICAL AND MICROSCOPIC STUDY OF MORTAR, CEMENT, AND POZZUOLANA.

GINO GALLO, by microscopic study of the changes occurring in a mortar, shows that the absorption of carbon dioxide by the calcium hydroxide present is intimately related to the presence of water, and, since the calcium carbonate formed is distinctly crystalline, it is concluded that both the lime and the carbon dioxide must be in solution before the reaction takes place.

A mortar prepared with a deficit of water lacks solidity, and has low resisting properties, owing to the fact that the calcium carbonates formed under these conditions forms a coarse network; similar defects are observable in mortar made with coarse sand, the calcium carbonate deposited in the large interstices not adhering to all the neighbouring sand granules.

The injurious effect exercised by the presence of magnesia in a mortar is explained by the slight solubility of the magnesia in the water present, and by the slow absorption of carbon dioxide by the solutions formed. When the water is completely eliminated from a mortar, chemical action ceases, and in the interior of old mortars in which the carbon dioxide could not reach the lime before the water evaporated completely, free lime is found.

All the mortars examined exhibited a distinctly crystalline border of calcite, which forms immediately the mortar is made, and has a thickness of about 0·1 mm.; when good

Digitized by Google

pozzuolana is employed, the thickness of this layer does not change appreciably. This calcitic coating prevents water finding ready access to the interior of the mortar, and so hardens the solution and removal of the lime.

The first phenomenon observable in the setting of these mortars is the hydration, by means of the lime-water, of the silica and alumina, which swell so as to fill the whole space previously occupied by air and water, and yield an impermeable mass, bestowing resistance on the mortar. Then follows the formation of soluble calcium aluminate, which, in presence of excess of lime and in supersaturated solution, deposits crystals of the calcium aluminate, Al_2O_3, $3CaO$, $10H_2O$, which is stable only in presence of calcium hydroxide solution, and is decomposed by water; this crystallisation binds together the various particles which exist as inclusions in the crystals. The limiting surfaces between the flocculent portions and the spaces left by these then become the seat of capillary forces, by means of which the silica attracts the lime into its pores, and thus forms nodules in which the lime gradually gives up its water of hydration and crystallises as calcium monohydrate, thus determining complete adhesion of the various parts. The more rapidly the swelling attains its maximum and the greater the latter, the more satisfactory will be the setting of the mortar.

The increases in volume of various specimens of pozzuolana in presence of calcium hydroxide solution have been measured. It is found that this increase is related directly to the amount of lime absorbed, and that it is considerably increased by renewing the calcium hydroxide from time to time. The action of calcium hydroxide also causes an increase in the amounts of alumina and silica which can be dissolved by dilute acid.

The value of a pozzuolana for the preparation of hydraulic mortar may be determined by the following measurements:—

(1) Increase in volume with calcium hydroxide solution.

(2) Electrical conductivity.

(3) Amounts of silica and alumina dissolved by treating with 5 per cent. sodium hydroxide solution on the water bath for fifteen minutes. For good pozzuolana these amounts are almost constant, even where the material has been previously treated with dilute acid; but for inferior materials, such as ashes from Vesuvius and Bassano, previous disgregation with hydrochloric acid renders increasing amounts of silica and alumina capable of solution in 5 per cent. sodium hydroxide solution.

Giovanni Giorgio and Gino Gallo give the following results of analysis of four samples of volcanic sand deposited from Vesuvius in the eruptions of (1), 1878; (2), May, 1900; (3), November, 1900; (4), 1620:—

Name of Component.	No. 1.	No. 2.	No. 3.	No. 4.
SiO_2—silica	48·45	47·94	47·40	48·00
P_2O_5—phosphorus pentoxide	0·60	0·56	0·66	—
Fe_2O_3—ferric oxide	3·49	9·69	3·76	5·09
FeO—ferrous oxide	3·35	8·35	3·65	2·03
Al_2O_3—alumina	17·81	21·31	21·31	17·53
CaO—lime	12·09	8·89	9·71	11·19
MgO—magnesia	3·02	1·65	1·73	3·60
K_2O—potassic oxide	5·01	5·12	5·02	8·47
Na_2O—sodic oxide	5·46	7·33	6·38	2·56
H_2O—water retained at 110°	0·60	0·06	0·20	1·54
H_2O—water lost at 110°	0·41	0·17	0·13	0·36

All these samples have a less astringent taste than the pozzuolana of S. Paolo, and, when mixed with lime, require hardly one-third the amount of water necessary for true pozzuolana to form a normal paste. On immersing samples (1), (2), and (3) in water and passing a current of carbon dioxide through the mixture for two months, the proportions of sodic oxide present were changed to 3·95, 4·33, and 3·93 respectively, the remaining constituents being but little altered in amount. The analysis of sample (4) indicates that a similar action has occurred also with it. The electrical conductivity of pozzuolana and mortars made from it with lime have been determined, and the results show that adulteration with inert materials may be detected in this way.

E. Stern has studied the micrography of cements, and finds that hardened cements, or cements in the process of hardening, have various appearances analogous to those shown by reflected light in specimens of metals and alloys. By this micrographic method the action of salt solutions, sea-water, etc., have been examined, and Portland cement and iron-Portland cement can be distinguished thereby.

The etched sections show the original cement particles A, composed mainly of alite, and a portion B, in which the process of hardening takes place; very little alteration in appearance occurs during the hardening process, although B slowly increases at the expense of A. The sections yield characteristic results when etched with alkalis, alcoholic hydrochloric acid, alcoholic iodine solution, and 25 per cent. hydrofluoric acid. A probably represents the hard crystals of cement proper, whilst the other, B, which is present only in small quantity, consists of the soft decomposition products resulting from the action of water on cement. On etching the cement by immersing the slide on which it is mounted for one to three seconds in the 25 per cent. hydrofluoric acid, and then immediately washing with water, A is coloured dark brown, and B is completely removed. If slag cement is present, this etching produces intense interference colours in the particles of slag cement, by means of which as little as 1 to 2 per cent. can be detected. The scratch test of Martens is also useful for the detection of slag in cement, the hard particles of slag showing up well under the microscope.

H. Vetillart and R. Feret have investigated the behavionr of pozzuolanas in marine construction, and find that the addition of pozzuolana to cement mortar appears to be advantageous, the destructive effect of sea-water being less than with ordinary cement mortar. The pozzuolana can replace one-third of the cement generally used; it should be finely ground, and intimately mixed with the cement, best in the cement factory. The mortar must not be allowed to dry before being immersed in the sea. The use as pozzuolana of roasted "gaize," a highly silicious French rock, is especially recommended.

If slag cements are employed, special tests should be made to ascertain the most favourable proportions to be used.

At the International Congress of Applied Chemistry recently held in London, M. J. Bied read a paper upon "The Decomposition of Mortar by Sulphate Solutions." Cubes of mortar, 1 to 4, or 1 to 5, even when made with very fine sand, are soon destroyed when placed in a saturated solution of calcium sulphate (gypsum), although they resist the action of 12 per cent. magnesium sulphate solutions, and of sea-water.

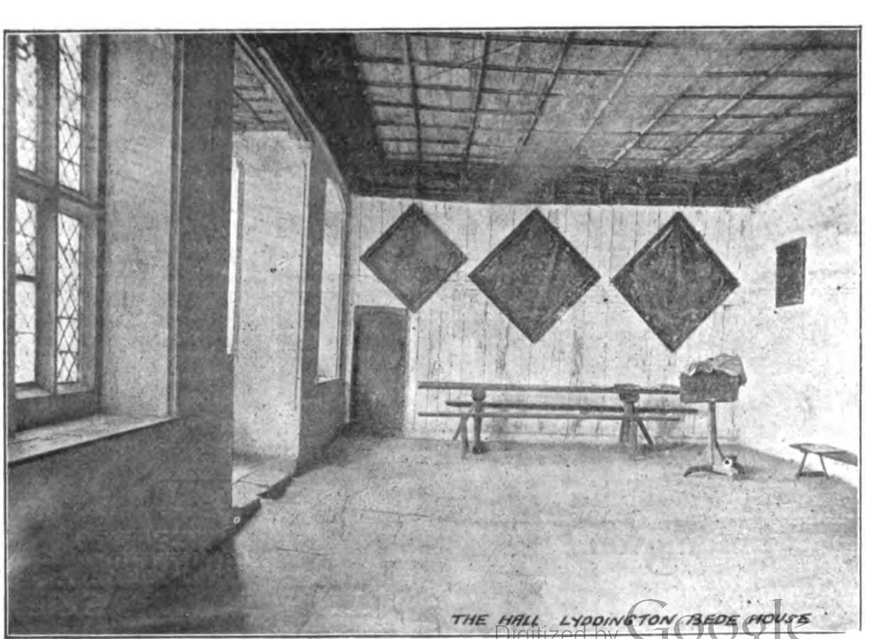
All mortars free from alumina are rapidly attacked by calcium sulphate solutions. Pozzuolanas also are decomposed to a greater extent by solutions of calcium sulphate than by those of magnesium sulphate. For four years a French firm has manufactured a cement, consisting of a mixture of dehydrated alumina and silicious cement, which has been successfully employed by French railway companies in regions containing gypsum.

At the same Congress Mr. E. C. E. Lord read a paper upon "The Composition and Physical Properties of Slag for Road Building." Besides the regular analytical work a series of tests were undertaken to determine the solubility of these furnace products in water and dilute acid, and to study the effect of calcium hydroxide (lime-water) and calcium carbonate (limestone) on their cementing values. If was found that the materials in question varied in composition from an acid glass to a very basic, wholly crystalline slag rock.

The samples were grouped according to silica content into three general types, and the characteristic compounds of each type are described. The solubility tests indicated that only samples having good cementing qualities and containing calcium aluminium double salts were appreciably attacked by water. The cementing properties have been ascribed chiefly to the formation of calcium carbonate and hydrated silicates of calcium and aluminium analogous to the secondary compounds found in hardened Portland cement. By the addition of calcium hydroxide and calcium carbonate (limestone) these cementing properties were greatly increased. Certain basic, extremely cementitious, converter slags were found to contain silicate minerals identical in crystalline form and chemical composition with the active elements, alite and belite, of hydraulic cements. As the result of these investigations, it was found that, by means of simple tests, the solubility, and hence the cementing values, of slags might be readily determined, and that, by using proper precautions, excellent materials for road construction could be obtained from the waste products of converter and blast furnaces.

JESUS HOSPITAL, LYDDINGTON.

LYDDINGTON, near Uppingham, in Rutland, possesses in its Bede House one of the most interesting buildings in the country, and one, moreover, that has not yet received the



Digitized By Google

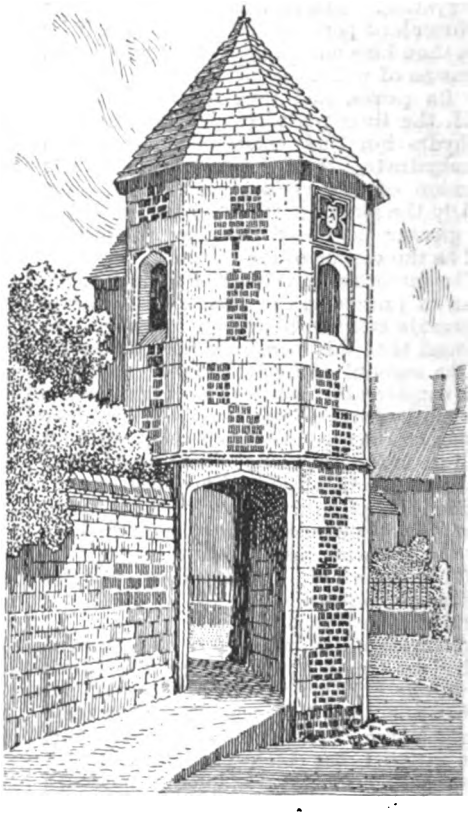
C

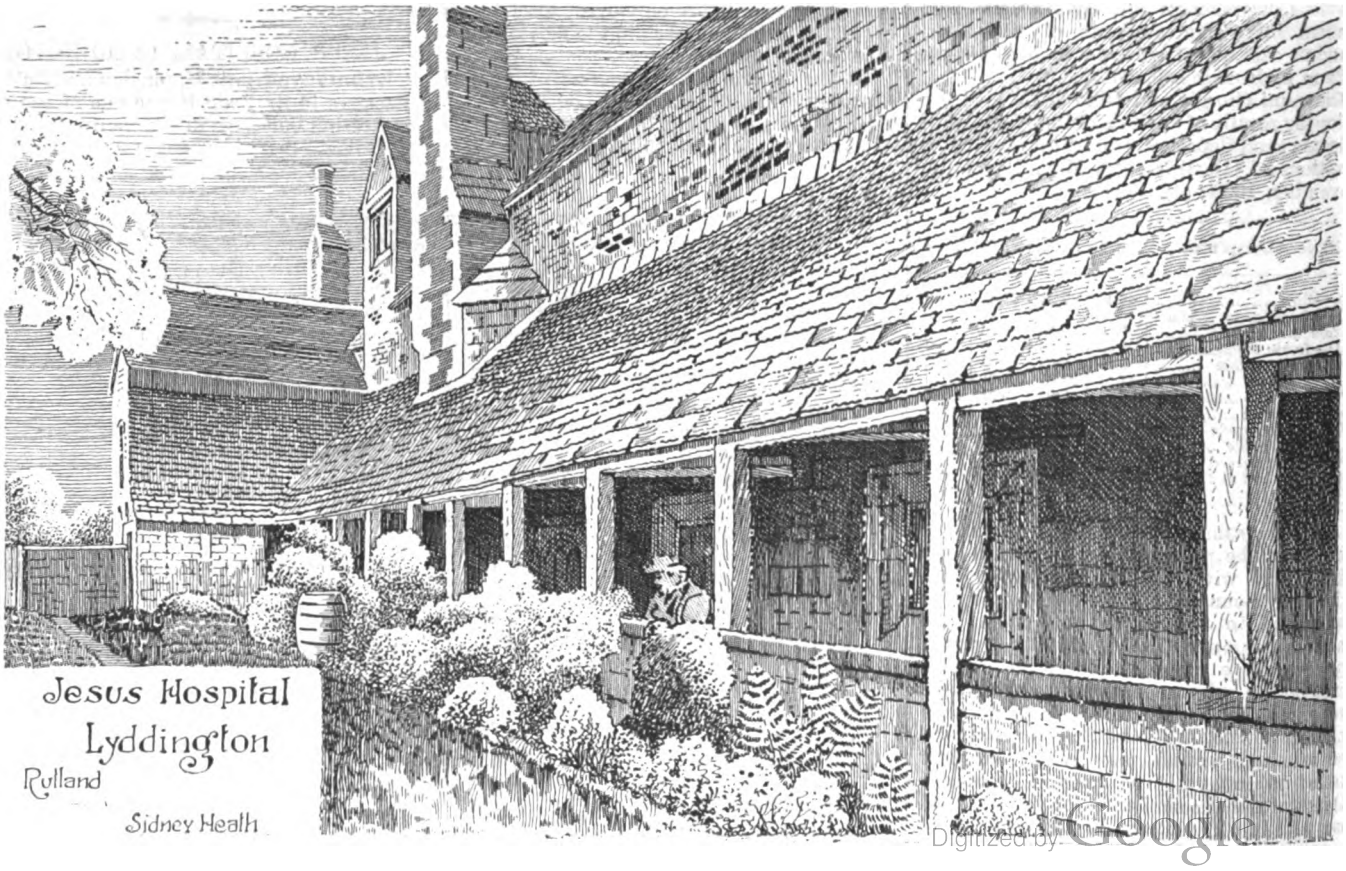
attention it deserves at the hands of both architect and antiquary. The present writer's attention was first called to this building by Mr. Jethro Cossins, the well-known architect and archæologist of Birmingham, who considers it to be the finest little building of its class that we at present possess, while not its least pleasing feature is the fact that it shows no signs whatever of extensive restoration. Originally built as a palace or country residence for the Bishops of Lincoln, it was embattled and fortified by Bishop Henry de Burghersh in 1320-42.

In 1602 it was converted into an almshouse, "Jesus Hospital," for a warden, twelve men, and two women, by Thomas, Second Baron Burghley, the buildings then existing having been erected by Bishop John Russell in 1480-96. The foundation was endowed with land at Kingscliffe in Northamptonshire, which now produces an annual income of about 116*l*. There is a delightful old cloistered walk, the lean-to roof of which is supported on massive oak uprights, while the mouldings of windows and doorways are remarkably well preserved. The original great hall of the palace is intact. Here is a very good flat oak-panelled ceiling, a fine oriel, and a large open fireplace, above which appear the arms of Bishop Russell. The ceiling has a deep cornice with richly-moulded tracery in oak, while portions of old glass in the windows display various episcopal arms, crests, and badges; relics, as are the large heraldic hatchments on the walls, of the building's former episcopal greatness. Below the hall are the remains of the old kitchen buttery and other domestic offices. The curious octagonal tower, bearing the arms of Bishop Russell, is approached by steps from the old palace garden. The side now facing the road is unpierced by any opening, but there is a passage right through from end to end. Both the original position (with regard to the encircling wall of the present garden) and the uses of this little structure are somewhat conjectural, but there is little reason to doubt that it was a kind of gateway and watch-tower, from whence the approaches to the palace could be seen. It may also have served as a prison and dungeon without which, in the days when ecclesiastical law took precedence of the civil, no episcopal palace, whether in city or country, was complete.

For the photograph of the hall I am indebted to Mr. W. J. Stocks, of Uppingham.

SIDNEY HEATH.





Digitized by Google

NOTES FROM FRANCE.

IT is proposed in Paris to build, on the site of the old Hôtel Dieu, which is about to be pulled down, a large building to replace the Ecole des Arts Decoratifs in the Rue de l'Ecole de Médecine. The scheme is being strongly opposed by those interested in the sanitation and the preservation of the open spaces of Paris, who would prefer that the removal of the Hôtel Dieu should be the opportunity for the formation of a new square. The old "Convent des Oiseaux," which has become vacant, would afford a very good building for the establishment of the Ecole des Arts Decoratifs, without the special erection of a new building.

The Académie des Beaux-Arts have elected as an Honorary Member, in place of the late Jules Comte, M. Emile Michel, Honorary Directeur des Bâtiments Civils, well known as an art critic, and who for a good many years has been editor of the *Revue d'Art Ancien et Moderne*. He is also author of a remarkable work on the Bayeux tapestry. At the same sitting the Académie awarded the Prix Houllevigne to M. Cordonnier, the well-known architect, in consideration of the general excellence of his work.

The late M. Haussmann, who, however his work may be criticised from some points of view, did so much for the modern improvement of Paris, is to be commemorated by the erection of a monument to him in the Boulevard which bears his name.

A monument is to be inaugurated shortly at Bayonne to the late Cardinal Lavigerie. It is the result of a public subscription organised by M. Bonnat, the eminent painter, and was designed by Falguière. It is erected at the entry to the Pont St. Esprit, on the site of the Porte de France which has been demolished.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

BARGOED.—Church (1,600*l.*). Rev. T. Richards, Bargoed.

Barnstaple.—School (4,000*l.*). Mr. E. G. Saunders, Borough Architect, Barnstaple.

Bridgend. — Foundry. Messrs. Sheppard, Bridgend.

Bridgwater.—United Methodist church and schools, Monmouth-street, for the Trustees.

Burslem. — Bakery (3,200*l.*). Mr. R. Worcester, architect, Balloon-street, Manchester; Messrs. Grant & Sons, builders, Moorland-road, Burslem.

Carshalton.—Three houses, Chalgrove-road and Hawthorne-road. Messrs. Windebank & Co., builders, Hillcroome-road, Sutton.

Eccles.—The Town Council has passed the following plans:—Boiler-house at storerooms, Lewis-street, Patricroft, Messrs. H. F. Parkinson & Sons; motor garage, "The Elms," Ellesmere-road, Ellesmere Park, Mr. Francis Ermen.

Epsom.—The District Council has passed a plan lodged by Messrs. Roll & Taylor for five houses in West Hill-avenue.

Frome.—Shops and warehouses, Market-street. Mr. G. Bigg, architect, Cork-street, Frome.

Garw Valley.—Church (1,400*l.*). Rev. W. Jones, Pontycymmer.

Hampshire.—New ward at Royal Boscombe and West Hants Hospital (3,500*l.*), for the Governors.

Hanwell.—St. Mellitus Church, Church-road. Sir Arthur Blomfield & Sons, architects, 0, Montague-place, W.

Hapton.—Extensions to chemical factories for Messrs. Riley.

Hungerford. — School (7,700*l.*). Mr. E. Fisher, architect, 10, Buckingham-street, W.C.; Messrs. Drowley & Co., builders, Wokingham.

Ilford.—School, Salisbury-road, Mr. A. S. R. Ley, architect, 54 and 55, Bishopsgate-street Without, London, E.C.; public library, Balfour-road, Mr. H. Shaw, surveyor, Ilford Urban District Council. The District Council has passed the following plans:—Additions to R.C. school, High-road, Mr. R. L. Curtis; nine houses, Wellesley-road, Mr. J. W. Patient, for Mr. J. Robinson; extensions to Presbyterian church, Albert-road, Mr. J. A. Brown.

King's Norton.—School. Mr. J. P. Osborne, architect, 95, Colmore-row, Birmingham; Mr. E. Crowder, builder, Farm-street, Birmingham.

Old Fletton.—United Methodist Sunday-school. Messrs. Hawkins & Sons, builders, Old Fletton.

Oulton Broad (Norfolk).—Addition to sanatorium. Mr. A. G. Beckett, builder, Oulton.

Oystermouth (Swansea).—Additions to school. Secretary, Education Committee, Urban District Council Offices.

Rawtenstall (Lancs).—Weights and measures offices, Kay-street. Mr. W. H. Schofield, surveyor, Lancashire County Council, Preston.

Romford.—School (7,994*l.*). Messrs. J. S. Hammond & Sons, builders, Romford.

Rushden. — Factory, Gordon-street, for Messrs. Darlow & West, Rushden; additions to factory, Manton-road, for A. Clayton, Rushden.

Seaham Harbour.—School. Mr. T. Rushworth, architect, Shire Hall, Durham.

Shepton Mallet.—Factory. Mr. H. Budd, architect, 27, Sadler-street, Wells.

Southampton.—The Town Council has passed the following plans:—Alterations to Chilworth House, Romsey-road, also three houses, Sidney-place, Mr. W. H. Masters; six houses, Wilton-road, Mr. F. W. Young, jun.; nine houses, Belgrave-road and Brookvale-road, Mr. C. H. Brightiff; six houses, Millbrook-road, Mr. A. Fry; five houses, Ash Tree-road, Mr. W. Jupe; four houses, Dimond-road, Mr. F. Lowe.

A CONCRETE RESERVOIR.

AN uncovered reinforced concrete reservoir, with a total capacity of about 2¼ million gallons and covering an area of 2,570 sq. yds., is being constructed in connexion with the London Hydraulic Power Company's new pumping station in Grosvenor-road, S.W.

The station is designed to supply 200,000 gallons of power water per hour, and to replace the Millbank-street station, acquired for the London County Council Improvement Scheme.

The reservoir is divided into six compartments (Fig. 1), each of which can be independently filled and emptied by means of valves regulated from the gangway over. Thames water will be allowed to flow in at middle tide and to settle, and will then be passed through condensers, filtered and converted into power of about 800 lb. per square inch. The compartments can be emptied at low tide, and special arrangement is provided for flushing the mud out of the pipes.

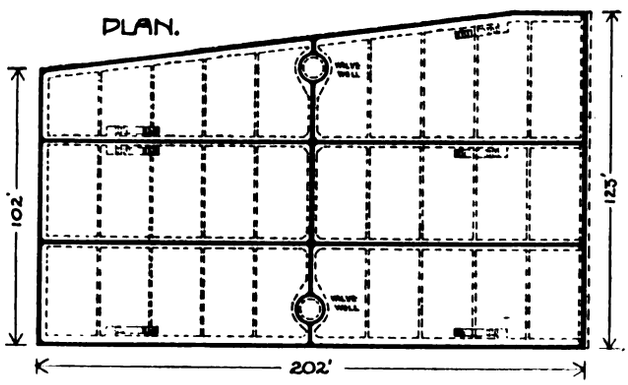


Fig. 1.

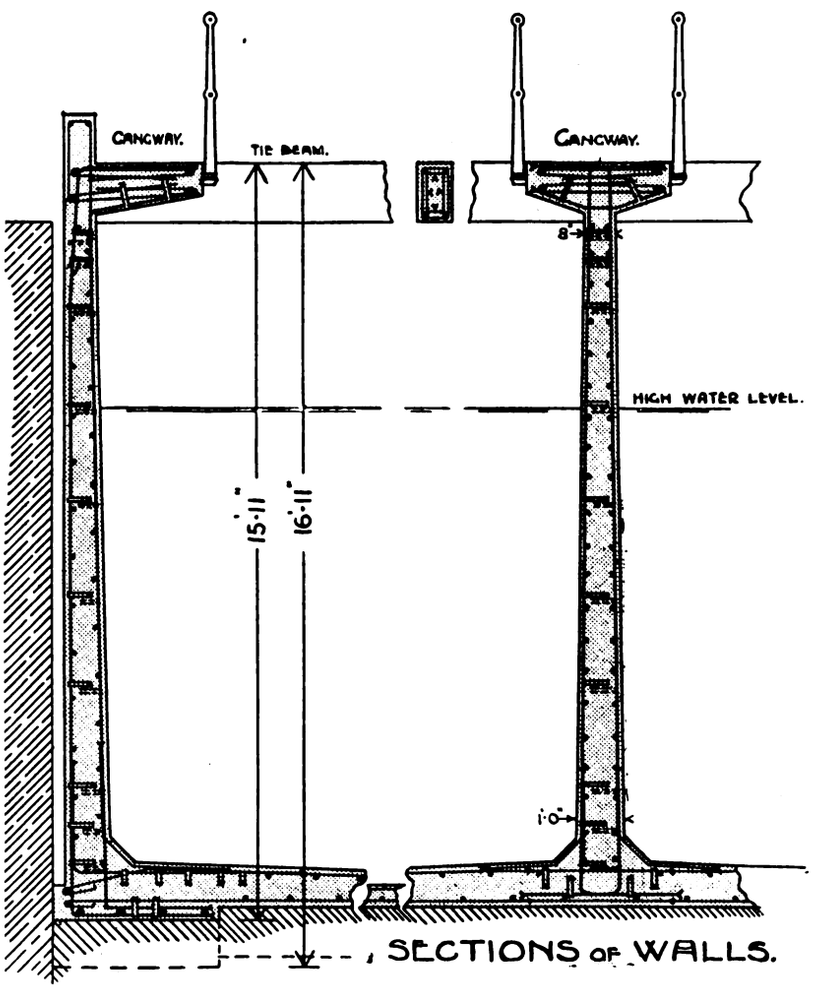


Fig. 2.

Illustrations of Concrete Reservoir for the London Hydraulic Power Company.

Digitized by Google

Floats are to be connected with an indicator board in the engine house to show the water level in each compartment, and an electric bell will give warning when the level at which pumping must cease has been reached.

The walls are designed to retain water in each or all of the compartments, and great economy of space has been effected by the use of reinforced concrete, the thickness being only 12 in., tapering to 8 in. at the top (Fig. 2). The base is supported by the floor and the head by a horizontal beam forming a gangway, augmented by tie beams at intervals across the compartments. Reinforced concrete brackets carrying the heavy 20-in. cast-iron influx pipes, project from certain of the walls without any additional thickness to the latter (Fig. 3).

The thickness of the floor varies from 12 in. to 6 in., and is laid to a fall upon a bed of weak concrete, executed to provide a more even surface than was obtainable on the ballast foundation.

The formation of the shuttering occupies considerably more time than the actual concreting, and certain portions are very elaborate. The circular work of the valve well beams has attracted a great deal of attention, and a special arrangement has had to be adopted for the back shuttering against the existing concrete boundary wall (Fig. 4), where it was required to leave a cavity of 3 in. Movable sheets about 7 ft. by 4 ft. high have been formed with 9-in. by 1½-in. boards, ledged at the back at the bottom, and at the front at the top. Long wedges are driven down behind, and bite between the back ledge and the existing wall. The top is held in position by wedges or spiked fillets. As required, the wedges are removed and the sheets raised by ropes from above to the next position.

The other reinforced concrete works in connexion with the station comprise:—(*a*) A covered roadway over the pipe subway of about 580 yds. super., calculated for the greater portion of its length to take a rolling load of 16 tons on two axles and a super load of 1 cwt. per foot; (*b*) a coal store floor of about 500 yds. super. with hoppers for shooting the coal into conveyors travelling in trenches below; (*c*) a filter room floor over (Fig. 5), of the same dimensions, supported on the outer walls and on three reinforced concrete columns (Fig. 6), each carrying a load of 310 tons, and measuring 24 ft. high by 22 in. sq.; (*d*) a boiler blow-off pit, 36 ft. long, wedge-shaped on plan, and a small pump for drainage, each of which will be fitted with an hydraulic ejector.

Messrs. Ellington & Woodall are the engineers; Messrs. Mouchel & Partners the consulting engineers for the reinforced concrete work; and Messrs. John Mowlem & Co., Ltd., the contractors.

J. R. HOBSON (*Resident Engineer*).

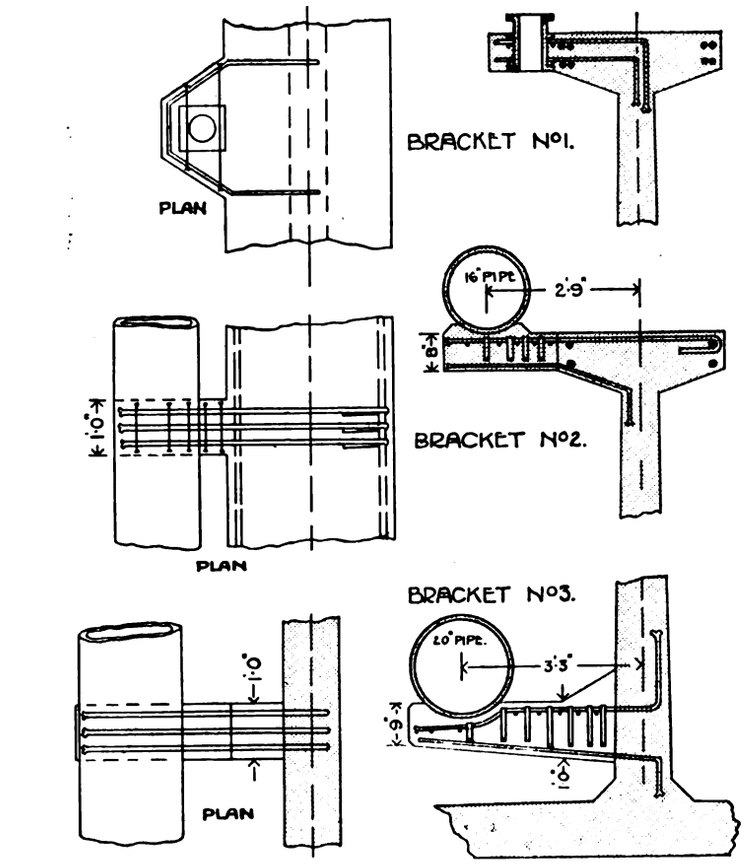


Fig. 3.

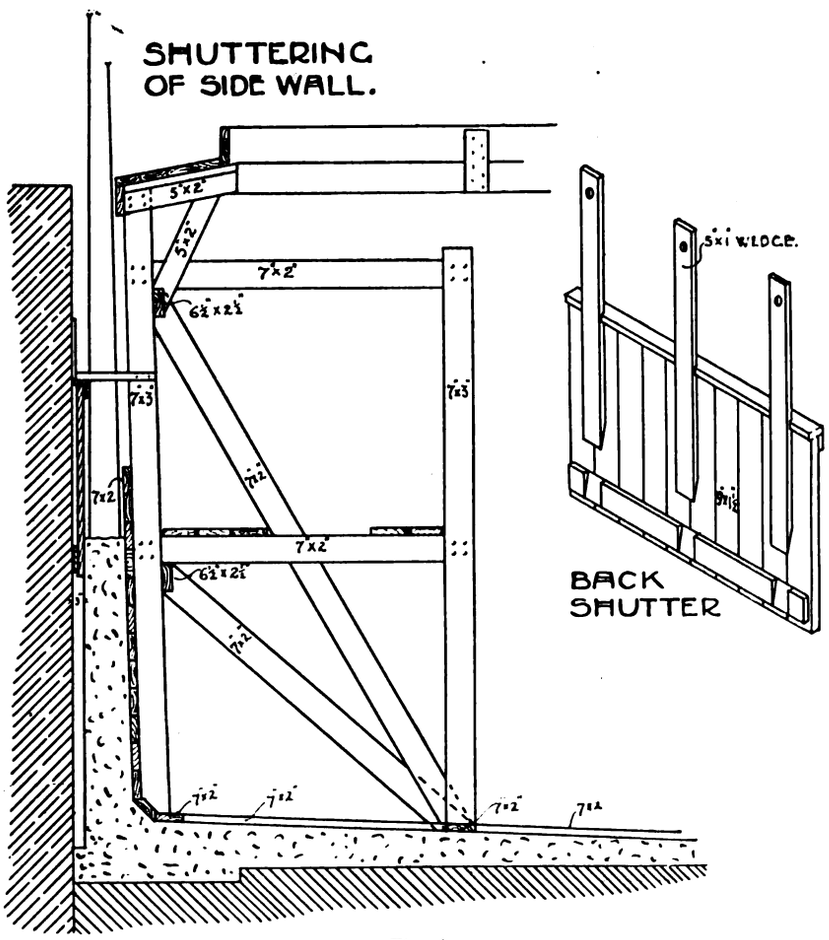


Fig. 4.

Illustrations of Concrete Reservoir for the London Hydraulic Power Company.

THE ROYAL SANITARY CONGRESS AT LEEDS.

[CONCLUDING NOTICE.]

AT further sittings of the Health Congress of Leeds the following matters were dealt with:—

Planning of Elementary Schools.

At the sitting of the Engineering and Architectural Section on July 20th, Mr. R. G. Kirkby, A.R.I.B.A. (City Architect, Bradford), read a paper on this subject.

In the course of his remarks the author said that the vitally important question of school planning is entering upon a new era. This is due to a growing dissatisfaction with existing models and an increasing recognition of the need for housing children under better conditions during their school life. For some years past architects have offered to authorities practically only one type of school, viz., the central hall type, with a series of classrooms arranged round two or more sides of a central assembly hall. The calling for the submission of competitive designs from architects has doubtless been greatly responsible for the adoption of this type, to the exclusion of buildings of a more suitable character. Whatever be the reason, it must be admitted that, in contrast with the originality and excellence of modern English architecture generally, school planning has tended to become so stereotyped that we find only one type of school building erected, in town and country alike, on the hillside and the plain indiscriminately, with little regard either to local conditions or educational requirements. The advantages which may have been claimed for existing

Digitized by Google

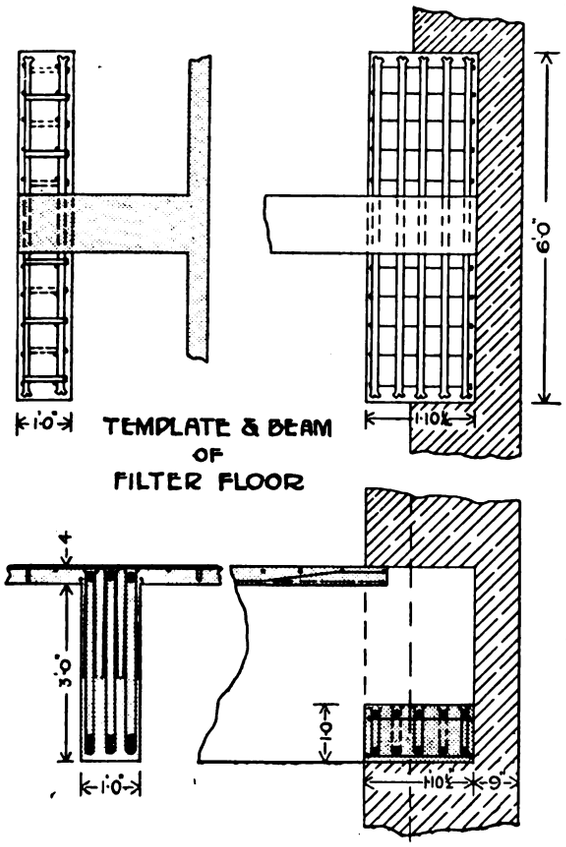


Fig. 5.

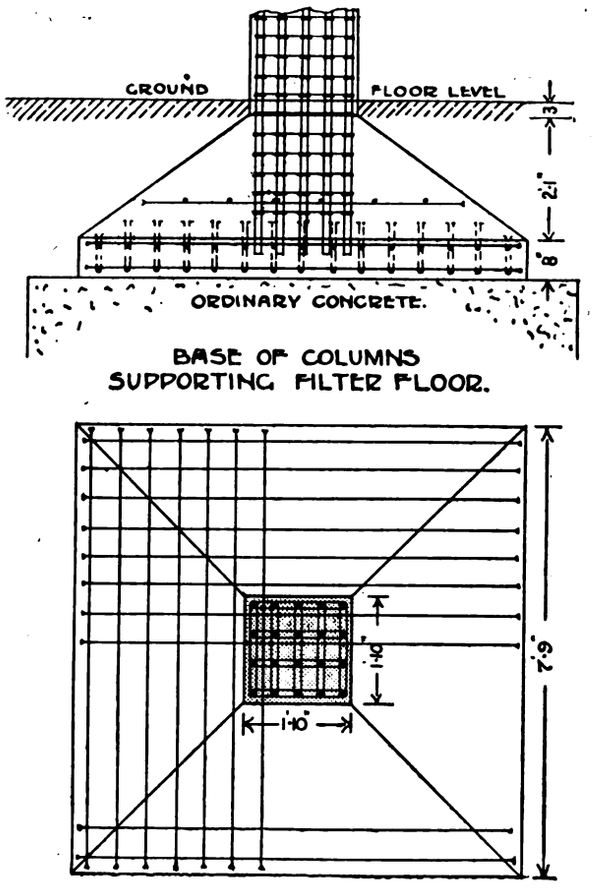


Fig. 6.

Illustrations of Concrete Reservoir for the London Hydraulic Power Company.

models are quite outweighed when consideration is given to the question of the children's health and to the unsuitability of the buildings in relation to modern teaching methods and hygienic science. The growing desire for healthier and better adapted schools has led, in a few instances, to the adoption and development of improved types of buildings, and noticeably so where city and county authorities have had the opportunity of consultation and investigation with their own official architects. Plans of schools recently erected or in progress in Staffordshire and Derbyshire, and at Letchworth and Bradford, are illustrations of these newer types. In these improved schools a detached assembly hall is provided, adequate to meet the growing need for physical instruction, and the classrooms are so arranged as to enable them to be from time to time flushed or scoured with fresh air, as well as at all times to be provided with cross-ventilation. In such schools children can be taught to love fresh air as nature intended they should, instead of their being compelled to sit in rooms with closed doors and windows, breathing impure air many times fouled. The provision of facilities for bathing in connexion with these newer schools is a noticeable and welcome feature. Cleanliness should become a national virtue, and this can best be inculcated through the medium of school baths. Ideas of cleanliness learnt at school will be carried into the homes, and must have a far-reaching effect upon the rising generation. Spray baths would appear to be the best type, with an occasional douche and slipper bath. The regrettable amount of physical deterioration which is admitted to exist makes it highly desirable, if not even imperative, that open-air schools should be more extensively adopted, and the great benefits already derived from experimental open-air schools warrant their wider adoption. Far better that debilitated children should, through open-air schools, be given a chance to live and grow and develop than that through inattention they should be allowed to drift into schools for the mentally defective, or otherwise become a burden to the ratepayers possibly for life. Open-air schools should provide resting sheds, classrooms, teaching verandahs, baths and dining hall, with well-equipped kitchen quarters, and other offices. A new school of this type just erected at Bradford will accommodate 120 scholars. In a reflex way the principles embodied in the construction and working of open-air schools are tending to revolutionise school planning generally. Hitherto school sites have often been selected without due thought being given to any consideration other than the cheapness or otherwise of the land. Land which costs little in money, it should be remembered, is not always cheap. In future, the suitability of the site for the purpose to which it is to be applied will become more and more a determining consideration. Then in regard to construction, the floor area or classrooms should be graded to suit the scholars. To assume that what is suited to a child of six is equally suitable for one of twelve is an absurdity. In any case a classroom should not be arranged to accommodate more than forty. This should be a class limit. A large single window, without heavy mullions and almost the full width of the classroom, gives the best light. If more fresh air be introduced naturally a larger heating surface will be required to warm the room. But it will be found that children get used to the fresh air, and do not feel the cold so much if a plentiful supply is maintained. Schools of the type illustrated practically ventilate themselves, and by their adoption some 30*s.* to 2*l.* per scholar is to be saved on the central hall type, the latter requiring necessarily some mechanical means of ventilation to maintain anything like a reasonable standard of atmospheric purity. It should be also borne in mind that cloak-rooms should be numerous rather than large; that they should be well lighted and ventilated, top-lighting being preferable, and that they should be effectively heated in cold or wet weather. The usual 6 in. space per scholar is too small an allowance, especially in the girls' school. All new efforts in school planning should embody provisions to meet the varied requirements under the recent Acts instituting medical inspection in schools and the feeding of necessitous children. Whilst these principles of school planning will be expanded as they become more assimilated, yet education authorities should not hesitate in adopting them, notwithstanding the fact that in some cases a somewhat larger initial outlay may be necessary. Where this is the case, however, it will soon be realised that the compensating advantages to teachers, and the increased physical and educational attainments of the scholars, will far outweigh the other and merely temporary consideration. The justification in the adoption of such principles will not be confined to architects and authorities alone, but is sure to meet the approval of the nation at large: For what can be more supreme folly than to neglect the units of the race in the earlier stages of their development, only to be burdened with them at a later stage in life as physically stunted and mentally dwarfed inmates of asylums, hospitals, prisons, or workhouses.

Dr. Sidney Barwise (Medical Officer of Health for Derbyshire) said that on the whole the greater elasticity given by the Act of 1902 had enabled architects of schools to plan buildings which must materially improve the health of the children, but the greatest drawback in more recent schools was that the cloak-rooms were not sufficiently cut off. He emphasised the importance of cutting off and ventilating cloak-rooms in which were stored garments often of an uncleanly nature. In the future he believed that drill and domestic hygiene, including cookery, must find a larger place in the school curriculum, and this would modify the planning of schools.

Mr. P. Robinson, F.R.I.B.A., said they were all agreed upon the necessity of fresh air and sunlight, and perhaps this might receive more attention from school architects

Digitized by Google

than it did at present in various directions. Recently, in erecting a new library at Hove, they made an experiment. They had a flat roof, level with the reference library, and they utilised this as a sort of roof-garden, and fixed sun-blinds so that readers might take the books into the open. This had been extremely successful, and they had been attempting to reproduce it in a Sunday school which they had just completed at Leeds. He suggested that this might frequently be done in the case of day-schools.

Time did not allow of a longer discussion on the paper.

Registration of Plumbers.

At the sitting of the Architectural and Engineering Section on July 21, Mr. Searles Wood, F.R.I.B.A., moved: "That it is necessary to the effective administration of the Public Health and Water Acts that the relative authorities be recommended and empowered to require that the competency of plumbers employed to execute or inspect plumbers' work under the regulations of those authorities shall be certified by the Plumbers' Company under the conditions appertaining to the National Registration of Plumbers, or by such other body as may be set up by statute, or be approved by the Local Government Board."

Mr. E. T. Hall, F.R.I.B.A., in seconding the resolution, said it was all in the direction of good workmanship. A national recognition of capacity must tend to stimulate good workmanship.

The resolution was carried.

Water Supplies.

The Section proceeded to discuss various papers dealing with the supply and purification of water. Mr. C. G. Henzell (Waterworks Engineer to the Leeds Corporation) was in the chair.

Professor T. A. Starkey (Montreal) opened with a paper on a new bacteriological standard for water analysis in which he expressed a doubt as to the usefulness of English standards of bacteriological purity based on the presence of coli. He urged that what was necessary was a standard which would fit all kinds of water, and the important point was to determine the presence of organisms of high motility, as it had been found that pathogenicity and motility went together.

Dr. Rideal described experiments which he had recently carried out, showing the increased germicidal power of chlorine in the presence of ammonia. He had found that most polluted drinking waters could be sterilised by sodium hypochlorite in the proportion of one per million of available chlorine, and that after standing for about two hours no smell or taste of the reagent was perceptible, therefore, that no subsequent filtration or other treatment was here necessary.

Mr. H. C. H. Shenton, dealing with the subject of sterilisation of water, remarked that the need for the sterilisation of water supplies was undoubted and was becoming greater. Considerable anxiety had been expressed at the way in which sources of supply and large catchment areas all over the country were being appropriated, the water authorities looking to the day when their own supplies would be unfit for use. The time had already arrived in many places when those concerned had no alternative but to make the best of water of questionable quality. Sterilisation of water had been satisfactorily carried out in this country by the addition of chemical hypochlorite in very small quantities, and it had been done more often than was generally known. At the present time the three practical methods in use were: (1) Ozone sterilisation. The cost of the production of ozone by electrical methods and of the treatment of the water had obviously been brought to within reasonable limits. (2) The chemical chlorine process as applied to the Lincoln water during the epidemic, and in use elsewhere at the present time, and (3) The electrolytic hypochlorite process where by a sterilising agent of greater efficiency than chemical hypochlorite was produced by passing a current of electricity through salt and water, this agent being then applied to the water in very small quantities. At present there had been no exact comparative experiments made as to the relative cost of these three methods, and it was greatly to be desired that such experiments should be made. One of the most important features of sterilisation of water was the enormous saving of expense to be effected in the omission of filters and storage reservoirs used for purification purposes.

Storage of Water.

Dr. A. C. Houston (Bacteriologist to the Metropolitan Water Board) sent a communication on the subject of the storage of water, which he said if sufficiently prolonged not only reduced the total number of microbes by sedimentation and by slow processes of natural destruction, but seemingly also brought about what might be termed a selective bacterial death-rate. Storage, or in other words "delay," might be a much more potent factor in preventing the spread of disease by water than was generally supposed, or than bacteriological facts revealed. He considered that adequately stored water was to be regarded as a safe water, whilst it rendered any accidental breakdown in the filtering arrangement much less serious than might otherwise be the case.

Mechanical Filtration.

Mr. Raymond Ross, F.I.C., F.C.S., dealt, in a paper which had been prepared by Mr. J. Race and himself, with a series of experiments undertaken at Burnley, where two types of mechanical filters were working alongside each other. The experiments so far had only extended over three months, and must therefore be regarded as preliminary. The Burnley supply was typical moorland water, and was obtained from the Cant Clough gathering ground, which was chiefly rough pasture grass, and the soil was more or less peaty. Except along the embankment, the reservoir was not pitched, and it contained a considerable amount of peaty soil. Owing to the fact that only 1,000,000 gallons a day could be filtered through the existing sand filters, and to the further fact that several cases of lead poisoning occurred from time to time, the Burnley Water Committee installed Bell's & Mather & Platt's mechanical filters. Previous to the installation of the filters the water which was acid was treated with lime at the rate of 120 lb. per million gallons. When the filters were installed, lime was still used, but was found unsatisfactory, and then carbonate of soda was used as a neutraliser, together with a small quantity of sulphate of alumina as a precipitant. After a week's treatment no trace of lead could be found even in the first runnings. Subsequently the sodium carbonate was reduced to 80 lb. per day, and further samples taken had shown no trace of plumbo solvent action. The conclusions of the authors were that for a certain class of water mechanical filtration was sufficiently efficacious and far less expensive, both as regarded installation and working expenses than sand filtration.

The discussion taken on all the papers which followed centred almost entirely around the question of mechanical filtration.

Mr. Parker (City Surveyor, Hereford) said he took his water from the Wye, which, at times of flood was the colour of cocoa. As the works were on the top of a hill and accommodation for reservoirs was limited, they had to adopt mechanical filtration, and although his medical officer was in favour of sand filtration, he would like to see the number of mechanical filters increased.

Dr. Miller (Medical Officer of Health, Hereford), pointed out that the chief object of mechanical filters was to remove suspended particles, and whilst, of course, the filters would do that, yet, to get rid of bacteria, they must have sand filtration.

Mr. Fairley (Leeds) alluded to the bacteriological examination of the water supply of York which he had made for some years past, which confirmed the conclusions of Dr. Houston as to the efficiency of storage. The water came from the Ouse, which took the sewage of a number of towns.

Mr. A. J. Price (Lytham) asked whether by having a sort of preliminary rough filtration of water they could not obviate the cost of expensive storage reservoirs. This was a question for chemists and bacteriologists to inquire into.

Mr. Whittaker (London) spoke in high terms of the wonderfully good water supply of London, and touching on the papers of Mr. Shenton and Dr. Rideal, remarked that whilst it was nice to know they could get this chemical purification if required, yet a better thing was to get a pure source of supply if possible.

Mr. G. W. Lacy (Borough Surveyor, Oswestry) observed that his Council was considering the question of mechanical filtration. From several installations which he had seen, and from information gathered, he thought it had been proved that mechanical filters did effect a considerable diminution in bacteria.

Mr. Race said that by the means of the addition of suitable precipitants equally good and sometimes superior results could be obtained by mechanical filters in preference to sand filters.

Mr. Shenton submitted that sand filtration alone could not be relied upon for the removal of disease germs. The pious opinions expressed by Dr. Houston and others were comforting to those who dwelt in London, but at the same time it did not prove that disease germs might not be in the water.

Plumbo-Solvency in Water.

Mr. C. C. Smith, M.Inst.C.E., described the methods adopted to prevent plumbo solvency in his district of Wakefield. The source from which the water was derived is peat covered moorland, hence the acidity of the water. Treatment by adding carbonate of soda to the water was adopted as a temporary measure in 1892. On the adoption of filtration in 1898 the question of the effect of sand filtration on the plumbo-solvent action of the water was considered, and many experiments made with different sands. These experiments showed that where filtration removed the affinity for lead when the sand was new, such action gradually decreased, that and eventually treatment must be combined with filtration. The use of limestone as an underlayer was proved experimentally to be of little value. The use of lime or chalk together with soda was found to be detrimental. Treatment with lime and chalk before filtration was found, experimentally and on a large scale, to be insufficient, the water losing some of its alkalinity in passing through the filter beds. It was decided to add chalk prior to filtration, and lime water after filtration. The chalk and lime treatment was quite as efficient as the soda treatment as regarded the prevention of plumbo-solvency; it was less costly, and did not give the water the "flat" taste which accompanied the soda treatment.

Dr. C. J. Russell McLean dealt with the question of water analysis. His conclusions, based on experience in rural and small urban districts, were to the effect that present-day standards of water analysis were unreliable as guides to wholesomeness of drinking water.

Water Supplies of Yorkshire.

Mr. T. Fairley (City Analyst, Leeds) contributed a paper on the Water Supplies of Yorkshire. He pointed out that the county occupied over 6,000 square miles. The softest waters up to 7 grains per gallon of dissolved solids were generally found in the uplands west and north-west. Leeds, Bradford, Sheffield, Harrogate, Huddersfield, etc., had supplies comparable with those of Glasgow and Manchester. They were improved by storage and by filtration,

Digitized by Google

and with due care they were safe for all domestic and manufacturing purposes. The river waters were more or less mixtures of ground and surface waters, and in certain formations, such as the millstone grit, they rivalled the upland surface waters in softness, but generally they had considerable hardness. The chalk waters of the East Riding were very similar to those of the south of England. As to future increased water supplies, the available gathering grounds were being rapidly taken up, and future extensions must be mainly by a more careful control of existing supplies. The planting with suitable trees on the higher parts of the gathering grounds might do something, possibly, to increase, certainly to regulate the supplying by preventing droughts and floods. The improvements in the processes of purification and manufacturing effluents might enable many of them to be used over and over again. The impure effluents of the West Riding represented an enormous waste not only of the water but of the materials polluting the matter which in their right place would be valuable.

Time did not permit of a discussion of the papers, but the chairman briefly alluded to the main points, and referred to the fact that he had considered mechanical filtration as a preventive of the formation of algæ but had come to the conclusion that it would not prevent it.

Road Making.

On July 23, Mr. Councillor Bowman presided over the Architectural and Engineering Section, when the first matter discussed was that of road-making.

Mr. A. Gladwell (Engineer and Surveyor to the Eton Rural District Council) contributed a paper on "The Public Health Aspect of the Road Question," which in his absence was read by Mr. G. W. Thompson. The author expressed no opinion as to the relative merits of different systems of road making, but confined himself to urging the necessity of roads capable of meeting the requirements of modern traffic, and which would withstand also the disintegrating influences of weather. He remarked that some improvement in the character of the binding agents used for the purpose of consolidating the units of material forming the road surface must be found. This binding agent might be of a bituminous nature or otherwise cementitious in character, but should, in any case, tend to render the road proof against moisture, while at the same time assisting to hold and keep the units of road material forming the aggregate in position. He welcomed the possibility of the appointment of a Central Road authority, and thought that both the Royal Sanitary Institute and the Royal Institute of Public Health should seek to be represented on such a board, inasmuch as there were many questions affecting road construction in its relation to public health which could be appropriately dealt with by the Institute.

Ferromac.

Mr. G. M. Melvin (Leeds) read a paper on "Ferromac," in which he explained how the system was to be carried through, and claimed many merits for the process.

A great deal of the discussion which followed was on the relative merits of "Ferromac" and the system of road-making adopted by Mr. Gladwell, which, it was explained, had been adopted by a company in London, although Mr. Gladwell himself was not connected with the company.

Mr. Brownridge (Birkenhead) said that what borough engineers really wanted was some directions by which they could standardise and test the tars and other compounds used in the making of roads. With regard to the reading of papers by manufacturers, he always asked those gentlemen to back their opinions by giving a guarantee. They all knew that a road must have a good foundation and a good top, but the question was how to get the materials standardised so as to make a good job.

Mr. Smith (Kettering) remarked that so far as he could gather the system advocated by Mr. Melvin would form the ordinary metal of a road into some sort of concrete. His experience went to show that concrete was not the best material for the surface of a road, as it became very slippery.

Mr. W. Glossop considered there was no material on the market which, taken all round, met better with the requirements of the road-maker than tar. He believed they would get a standardisation of materials in time, but at present these things were more or less the property of the originators of different processes of road-making. He knew that in many cases where tar had been taken from the local gasworks failures in road-making had resulted.

Mr. A. J. Price (Lytham) thought anything of the nature of concrete was not pleasant for driving on, and, further, they had to remember the expense of breaking it up. He had tried various systems of road-making, including Mr. Gladwell's, and did not consider the latter so cheap or so good as the old ordinary method of making macadam roads. He used tar taken from his local gasworks, and no one could say that the roads of Lytham were unsatisfactory. The principal fault of all the proprietary processes was that they made the roads too hard, and there was not that elasticity which all surveyors liked in their roads.

Mr. Hirst (Southport) emphasised the great necessity there was for a standardisation of cementitious materials, and considered that if they had this they could, with their old-fashioned system, get a road as cheap and efficient as by any of the systems upon the market.

Mr. Howard (Clifton) thought that where there was elasticity in the road there must be internal wear. He felt that with the changed conditions of traffic it was the rigidity and not the elasticity of the road which required consideration. Elasticity might be necessary for horse traffic, but not for motor traffic.

Mr. P. C. Cowan (Chief Inspector, Irish Local Government Board) warned surveyors against using local tar, for it was of the greatest importance in road-making to get a tar prepared by skilled persons in a uniform way. Fortunately for the road-maker and the taxpayer, tar could be prepared for road-making without any considerable addition to the cost because the constituents in the tar which were deleterious for roads were of value for other purposes. In a perfect road they wanted rigidity in the right place and elasticity in the right place, and he thought the best road they had was the asphalt road with a concrete foundation. He believed that concrete roads had a future.

Mr. Thompson gave his experience of road-making, which was practically on the system adopted by Mr. Gladwell. He had had one road laid for nearly two years between Leeds and Harrogate, and it did not look worse to-day than when it was laid down.

Bulk Feeding of Dust Destructors.

Mr. G. W. Melvin (Leeds), in a paper on the "Bulk Feeding of Refuse Destructors," said that destructor inventors had endeavoured to charge destructors direct from the cart so as to avoid shovel handling, but until recently with only small success. The "Fryer" system of tipping behind the furnaces to a flow with movable bars was tried over twenty-five years ago, but failed because the refuse was of such a character that it would not burn equally, and consequently the rate of combustion could not be regulated to the rate of travel of the refuse in its passage through the surface. Many other systems on the same lines had been tried, but not one survived to-day in actual practice. The "Boulnois & Brodie" system of trucks with compartments into which the refuse could be shot from the carts, and which in operation enabled each compartment to be discharged in turn into the furnaces, was still in operation, and in some cases was working successfully. The "tub" feed system of the Horsfall Destructor Company was arranged so that the carts should discharge into containers or tubs, and these were lifted by overhead crane until they are suspended over the top of the furnace requiring a charge. The descent of the tubs engaged a cradle which by combined weight, actuating levers, removed the cover of the furnace, and this opened the bottom of the tub. The load or charge was discharged into the furnace, and as the empty tub was elevated by the crane to be returned to the pit for refilling the cover of the furnace was returned to its position. A high blast pressure was used, and the results in consumption were the highest yet attained, being over 100 tons of refuse per sqare foot of grate area per hour. Two cells of this type at Burmantofts, Leeds, consumed about 50 tons of refuse per twenty-four hours. The highest steaming results had been obtained at Greenock, where 97 units of electricity per ton of refuse had been obtained on test, and the average over a year's working has been 67 units per ton. The advantages were (1) The shovel has been eliminated from charging operations; (2) the labour conditions are better than under any other system; (3) the labour bill is the lowest possible; (4) freedom from nuisance is adequately secured.

Mr. Price (Lytham) thought there could be no question that tub feeding was preferable from the sanitary point of view, but in his case he had to raise steam.

Mr. Race (Barrow-in-Furness) considered that manufacturers' figures very often were misleading—of course, not intentionally. It was unfortunate that more figures of actual practice could not be published.

Smoke Prevention.

Mr. F. Grover (Leeds), in a paper on "Smoke Prevention," remarked that it was very generally considered that great economy in steam raising would follow from more perfect combustion in regard to the unburned matter coming off as smoke. It was, however, an unfortunate fact which confronted the reformer that such was not the case. When dense black smoke was coming from a chimney the wastage was not more than 1 per cent. of the fuel put in the furnace. It had to be borne in mind that there were hundreds of plants working under strained conditions for steam raising which, nevertheless, served their purpose, and the capital cost of replacing which would be out of all proportion to the saving effected by the suppression of smoke. The effect of household smoke was also by no means negligible. In this respect the Americans and their neighbours on the Continent adopted an altogether different plan of heating their houses. In this country they preferred to waste fires which they could see but could not feel, and was it to be supposed that a nation which cherished such deep-rooted prejudice would suddenly change its habits in the interest of the smoke problem? He confessed he saw no signs of it. He looked for the solution of the problem to the distribution of power for factory purposes from large central electric stations, and to the development of the internal combustion engine. Whilst they were growing slowly towards the better state they might appoint a Government department of qualified men whose duty it would be to investigate the most difficult cases, and advise rather than merely take observation and fine delinquents. Unless such a department, however, was dissociated from municipal control he did not believe they would make any headway.

THE LATE SIR WILFRID LAWSON.—A statue of the late Sir Wilfrid Lawson was recently unveiled by the Prime Minister in the Victoria-embankment Gardens, London. The statue, which is of bronze and larger than life-size, stands upon a stone pedestal, and is the work of Mr. D. M'Gill.

Digitized by Google

THE BUILDER

AUGUST 7, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 23s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street W.C.

MEETINGS.

SATURDAY, AUGUST 7.

The Institution of Municipal Engineers.—The first annual general meeting of the Institution, to be held at the Town Hall, Durham. (1) Presentation of annual report of the Council; (2) discussion of paper, "The Design and Requirements of Electric Power Works," by Mr. Horace Boot, M.I.E.E., A.M.I.Mech.E., which was presented at the general meeting held at Olympia on April 24 last; (3) paper, "Municipal History and Works of a Small City," by the President of the Institution, followed by discussion; (4) paper, "The Durham Main Sewerage Works," by Mr. Harry W. Taylor, Assoc.M.Inst.C.E.; (5) visit to Durham Castle and Cathedral; (6) the result of the ballot for election of the Council for the year 1909-10 will be announced.

Institute of Sanitary Engineers.—Visit to Town Planning and Housing Exhibition, Hampstead Garden Suburb.

WESTMINSTER CITY COUNCIL.

At the fortnightly sitting of the Westminster City Council on July 29, the following, amongst other matters, were dealt with:—

Paving.—It was decided to repave the east side of Soho-square with yellow deal blocks, at an estimated cost of 1,210*l.* The Engineer was also instructed to carry out various paving works in different streets of the city, at an estimated cost of nearly 2,000*l.*

Making-up of Roads.—It was agreed to take over and maintain as public highways the roads abutting on Albert Hall and connected with Prince Consort-road for the Commissioners of the Exhibition of 1851, subject to certain conditions. The net cost of making-up, paving with wood blocks, and sewering the roads was estimated by the City Engineer at 9,662*l.* 10s. Amongst the conditions are that the Commissioners pay for the works, with an amount equal to 5 per cent. of the total cost for surveys, plans, bills of quantity, etc., and that they remove the chimney-shaft projecting into the line of the new roadway south of the Albert Hall within two years.

Painting Works.—The Works Committee were authorised to obtain tenders for the necessary painting works at six open spaces within the city.

Sewer.—The Council agreed to undertake for the Middlesex County Council the construction of a 12-in. pipe sewer in the new street between the Sanctuary and Little George-street.

Regent-street Improvement.—A communication was reported from the London County Council stating that the Improvements Committee were not prepared to recommend any contribution to the cost of purchasing land on the south side of Argyll-street from the Office of Woods so as to widen the street to 60 ft.

Fifty Years Ago.

FROM THE *Builder* OF AUGUST 6, 1859.

THE disastrous strike amongst building operatives which has already commenced in the metropolis (and is threatened in the provinces but on different grounds), has excited all classes to a great extent, and has led to an unmistakable expression of opinion on the part of the public. Workmen have an undoubted right to discontinue working if they please, but they have no right whatever to prevent others, who may be willing to work, from doing so.

*** It is curious to read the expression in the last sentence—the natural conclusion of every one's feeling of common sense and common justice when the problem was first plainly stated. We have outlived all that now, and "peaceful picketing," as it is ironically called, or the attempt to prevent others working, is now protected by the law. —ED.

Illustrations.

ST. LEONARD'S, SHOREDITCH, CHURCH.

A RECORD, *temp.* John, of the church of St. Leonard in Sordig, or Soersdych, a Tower Hamlet on the Eald, or Old, Street, dispels a vulgar tradition concerning the origin of the name. Of the former church there is a view, 1736, by West and Toms, showing the gables of the four aisles which measured 75 ft. by 66 ft., and a tower in three stages with turret and cupola. The present church was built in 1736-40, at a cost of 8,000*l.*, after designs of George Dance the elder. Butterfield restored the fabric and beautified the interior in 1870; in 1899 alterations and improvements were effected at an outlay exceeding 2,000*l.*, by Messrs. J. R. & J. Brown, and the peal of twelve bells set in order, under Sir Arthur Blomfield's superintendence. The east window is attributed to Baptista Sutton. The organ, by Bridge, 1754, was repaired in 1870 by Speechly & Ingram. The parish stocks were placed in the churchyard, and the ground was opened to the public with the aid of 500*l.* contributed by the Metropolitan Public Gardens Association, thirteen years ago.

In the old church were buried, with XVIth century monuments, members of the houses of Lovel and St. John, and of the family of Manners, Earls of Rutland, who (*temp.* Richard II.) became lords of the manor. "The Actors' Church" is locally so-called from its close associations with the actors at the Elizabethan play-houses, "The Theatre" and "The Curtain," in the precincts of the adjacent St. John the Baptist Priory, of black nuns Benedictine, in Holywell Liberty, to which Sir Thomas Lovel (*temp.* Henry VIII.), was a benefactor: see Peter Chasserau's survey of the parish, 1745, and the *Builder* of September 12, 1896, and July 11, 1903. The registers record the baptism of Juliet Burbage and Desdemona Bishop (1608), of Coriolanus Hawke and Troilus Skinner (1591), with the burials of Will Somers and Richard Tarlton, jesters, and the three Burbages, G. Spenser, Greene, R. Cowley, W. Sly, and others, actors and contemporaries of Shakespeare, who, it is said, lived in Gillums-fields, hard by.

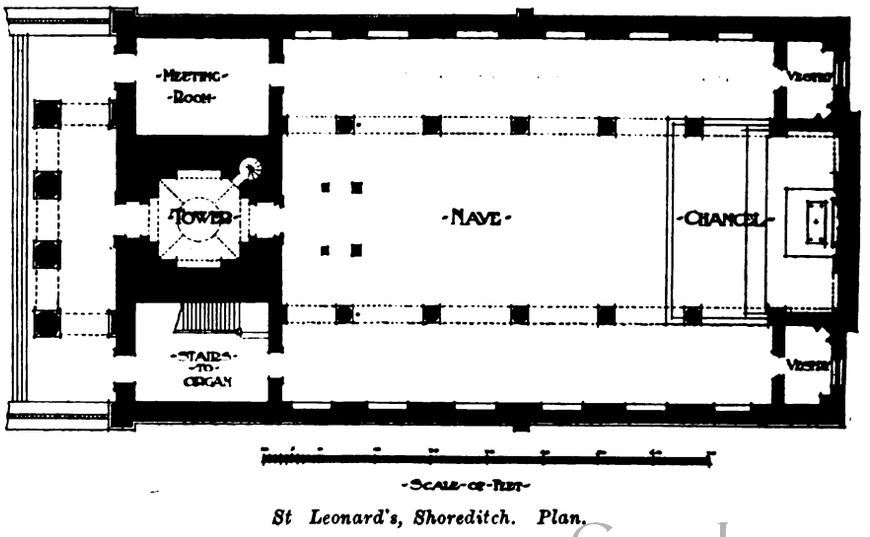
St. Leonard's, suave and elegant as its design is, shows symptoms of the decline in church architecture which set in during the latter half of the XVIIIth century. Its architecture is only a frontispiece; the walls are returned in brick; the plan lacks the variety of those of Hawksmoor. The steeple owes its outline to St. Mary-le-Bow, though in justice to its architect we must mention that not one of its details is exactly similar. It is, in fact, inspired, but not copied, from its more famous sister.

The base is square; on this is placed an octagonal Corinthian story, with open balustraded galleries; above this is a dome surmounted by a circular turret of the Composite order; crowning all is a pyramidal obelisk. The ground story of the tower is masked by a modern Doric portico, after the well-known and equally well-abused fashion of St. Martin-in-the-Fields. The interior shows a clearstory (much like that of Christ Church, Spitalfields, the last illustrated of this series), supported by a Doric arcade (each column with its portion of entablature), dividing the body of the church into nave and aisles. The interior, as is the case with most of the London churches of the period, has, with the removal of its fittings, lost half its interest. We could never see the sense of allowing an architect with a Gothic revival bias to run riot in an XVIIIth century church and substitute his attenuated benches for the sound joinery of the pews of a less hurried age. However, the mischief has been done in nearly every case, with the result that the interiors of churches thus dealt with present a bare and pitiable appearance, while they have been robbed of a good third of their seating capacity by the destruction of their galleries.

"EGYPT HOUSE," NEW BROAD-STREET, E.C.

"EGYPT HOUSE," with frontages to the two western arms of New Broad-street, occupies the site of the buildings once known as 36, 37, and 38, New Broad-street—spacious City mansions of the Georgian period.

The building is designed for the accommodation of banks, insurance offices, and trading firms generally. Approached by two entrances through marble-lined corridors,



St Leonard's, Shoreditch. Plan.

Digitized by Google

two staircases, lined throughout with Medmenham tiles, lead to the various offices in the front and back blocks. Quick service electric passenger lifts are installed between the staircases. In the sub-basement is fitted a series of strong-rooms for safe deposit, and every floor above is equipped with two or more strong-rooms. The lavatory accommodation (practically a separate block) is entered only from staircase landings and away from office corridors. The principal elevation, with a frontage of 74 ft. to New Broad-street, is of Portland stone, with symbolical Egyptian ornament in the lower stories.

The building of "Egypt House" has been carried out by Messrs. Wm. Johnson & Co., of Wandsworth Common, from the designs and under the superintendence of Mr. Fred. W. Marks, architect.

TOMB OF PHILLIPPE POT.

THIS tomb, of painted stone, now in the Louvre, is the work of the Burgundy School, XVth century, and was executed about 1477-1483. Originally placed in the Abbey of Cîteaux, where Phillippe Pot—a favourite of Charles the Good—was buried, it found a resting-place for some time at the Hôtel de Vesvrottes at Dijon, and was acquired for the Louvre in 1889.

The mourners or weepers supporting the effigy are of a type very common at this period, other notable examples being those on the tombs of the Dukes Philippe-le-Hardi and Jean Sans Peur, now in the Museum at Dijon, and of which there are plaster casts in the South Kensington collection. The figures of the mourners in the tomb illustrated are of nearly life size, and carry escutcheons of the house of Pot and its alliances. SIDNEY TOY.

SWORD REST, ALL HALLOWS CHURCH, LOMBARD-STREET.

THE illustration is taken from a full-size drawing by Mr. F. J. Carmichael, of the Royal College of Art.

This sword rest was removed to this church from St. Dioris, Backchurch, in 1878, and now stands at the end of the corporation pew. It is of wrought-iron, painted and gilt. Height, 5 ft. 6½ in.

DESIGN FOR A FOUNTAIN.

THIS design, by Mr. Percy May, is the one which received a Fourth "Mention" in the *Builder* competition for a design for a Fountain for a Public Park.

Of the four which were distinguished by a "Mention" it is, in an artistic sense, the best, and would have had a higher place but for the fact that so little is made of the water as part of the decorative effect; it was considered that in a design for a fountain the flow of the water should form a more important element in the design. It is a pretty idea, however, and the water-colour drawing of the perspective view showed a good sense of colour, which cannot be conveyed in the monochrome reproduction.

Competition News.

MUNICIPAL BUILDINGS AT BURSLEM.

Twenty-three competitive plans for the new municipal buildings at Burslem have been received by the Corporation, who have now appointed Mr. Henry T. Hare, F.R.I.B.A., as assessor. The awards are expected to be made shortly.

SCHOOL AT WATFORD.

Mr. E. Newton has been appointed assessor by the Governors of the Watford Grammar School, in a competition for architects for a new boys' school at Cassiobury-park.

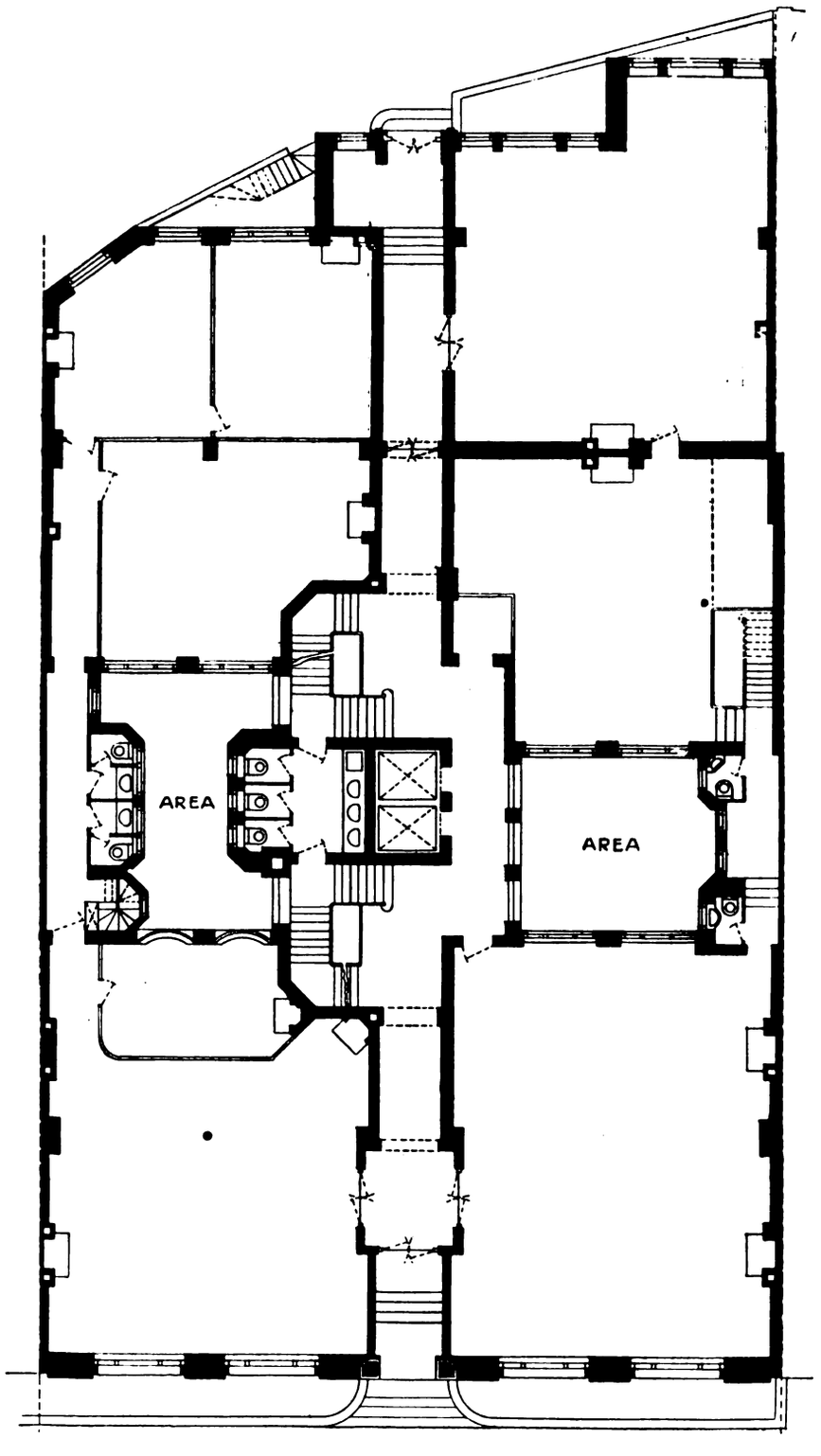
TORQUAY MUNICIPAL BUILDINGS.

At the meeting on August 3 of the Torquay Town Council, the General Purposes Committee reported that Alderman Bovey had explained the result of the consideration given to the matter of the proposed municipal buildings by the expert members of the Committee, and submitted rough sketch-plans, showing how they thought the requirements of the Council and officials might be met by re-arrangement of Mr. Davison's competitive drawings, providing also an assembly hall capable of seating 1,100 or 1,200, with an end gallery to accommodate 400 persons, at a cost not exceeding 30,000*l*., at the same time suggesting that the sketch-plans should now be forwarded to Mr. Davison for consideration and the preparation of an estimate of the cost. The Committee had unanimously resolved that the principle of the original competitive designs be approved, subject to the preparation by Mr. Davison of sketch-plans embodying the suggestions set out in the rough plans submitted by the added members of the Committee, together with an approximate estimate of the cost. The report was confirmed.

Correspondence.

CHEDDAR CLIFFS.

SIR,—In the closing paragraph of your "Note," you say: "It is true that other lands along the gorge will still remain in the possession of owners who may permit quarrying at some future time, but we understand that they have no intention at present of allowing anything of the kind, and it is to be hoped that they will never be induced to adopt a different attitude." I sincerely hope so, too, and that this beautiful piece of country will never be destroyed. But what about "undeveloped Minerals" and taxes now, and for the owners now doing their duty to all lovers of our country, leaving their children to be taxed for "increment value"? J. H. M.



GROUND FLOOR PLAN

SCALE OF FEET

0 5 10 20 30 40 50 60

"Egypt House," New Broad-street.

Digitized by Google

WHITGIFT HOSPITAL.

SIR,—We are very glad to see your article this week with reference to the proposed demolition of this interesting old building. As local architects, we should like to thank you very much for taking the matter up.

In case you may care to reproduce it, we enclose tracing of a measured drawing of the fine overmantel in the audience-chamber.

We venture to hope that you will continue to point out the importance of saving these almshouses. Personally, we think that a far better, and probably in the long run cheaper, plan would be to run a fresh road parallel to the High-street, commencing at the Whitgift School and entering the High-street again further south.

Such a scheme would save the almshouses, and also, as the land taken by the new road would be principally through unbuilt-upon back land, would create new and valuable frontages.

PEPLER & ALLEN.

THE BUDGET AND BUILDING.

SIR,—In your issue of the 24th ult. I see a report of a speech in which it is stated that the effect of the Budget will be serious for the building trades.

No reason whatever is given for the statement, except that some work that was proposed has been abandoned.

Now, it is very easy for those who want to see the Budget defeated to abandon work in order to cause prejudice against it; but what the ordinary man in the building trades wants to know is: How will a Budget, which proposes to tax land that is unbuilt on, be likely to discourage the owner from building? Certainly, unless very strong reasons can be adduced to the contrary, he will be inclined to the opinion that building will be encouraged.

Certainly that is the opinion of many, and, I believe, is the experience of those places where the tax is already in operation.

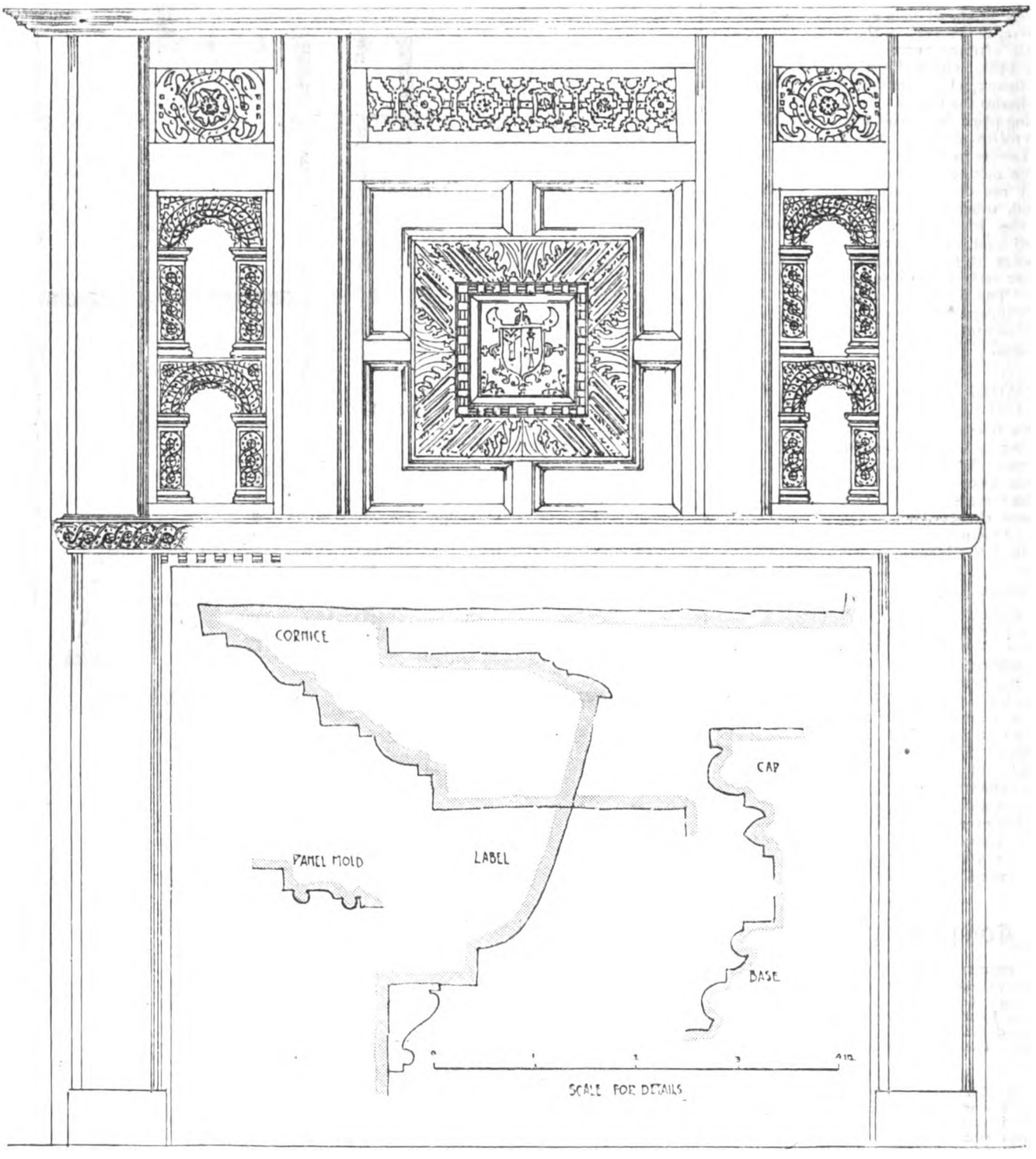
INTERESTED.

LONDON AND DISTRICT BOROUGH COUNCILS.

East Ham.—The Council at their last meeting approved the following plans:—Mr. W. Tomlinson, two houses, Castle-street; Mr. J. H. Carte, two houses, Trevelyan-avenue; Mr. B. Dawson, office, stores, and caretaker's house, Cairn Mills, Silvertown, also refinery warehouse, Silvertown; Mr. W. Lowe, Rev. P. M. Bayne, extension to mission church, Grantham-road.

Greenwich.—Mr. F. J. Gorham is to erect a blacksmith's shop at the Council's depôt at St. John's Park, Blackheath, for 238*l*. Wyndcliffe-road is to be formed and paved as a new street, and three roads are to be repaired, at an estimated cost of 386*l*. The following plans have been passed:—Mr. R. Abbott, twenty houses, Troughton-road; Messrs. Baldwin & Co., six houses, Beaconsfield-road; Mr. Alfred Roberts, two houses, Woolwich-road.

Hammersmith.—The Law Committee of the



Whitgift Hospital, Croydon: Overmantel, the Audience Chamber.

Digitized by Google

Borough Council has considered the practice adopted hitherto with regard to new street apportionments, and particularly as to the advisability of giving a preliminary notice to owners of proposals to take over new streets before serving the usual statutory notices of apportionment. Upon inquiry it was found that in only two or three of the other metropolitan boroughs is a preliminary notice given. The Committee were, however, of opinion that it would serve a useful purpose, and probably be the means of avoiding disputes, if the Council's intention to take over a new street was made known to owners before the sealing of the plans and apportionment. This accordingly is to be done in future. A plan by Mr. A. Cole for the erection of two shops at 57, Shepherd's Bush-green has been approved.

Hampstead.—In connexion with instructions which have been given the Borough Surveyor to reconstruct, at an estimated cost of 2,300*l.*, a sewer across the West Heath, an additional draughtsman is to be appointed in the department at a commencing salary of 80*l.* per annum. A footpath on the east side of the Spaniards'-road is to be repaved, at a cost of 173*l.*

Hendon.—The Urban District Council have passed the following plans:—Messrs. Hamiltons, seventeen houses, Elmcroft-terrace, also (under protective conditions), preliminary plans for developing Hendon House Estate; Messrs. Meredith & Skuse, skating-rink, Rockhall-terrace; Mr. W. S. Baker, two houses, Woodstock-road; Messrs. Howard & Laverack, eight houses, Corringham-road and Finchley-road; Mr. E. H. Appleton, nine houses, Russell-road; Messrs. J. Walker & Co., two houses, Portsdown-avenue; Mr. G. H. Fox, seven shops, Station-road, Hale-lane, Mill Hill; Hampstead Tenants, Ltd., block of cottages, also six cottages, Erskine-hill; Messrs. Parker & Unwin, six cottages, Erskine-hill; Mr. Thomas Waple, public hall, Hale-lane; Mr. E. Streather, two houses, Corringham-road; Messrs. T. Young & Son, six houses, Caddington-road; Mr. F. W. Collins (Watford), six houses and one shop, Collindale-avenue, also twelve houses, Annesley-road; Mr. H. A. Berstein, nineteen houses, Temple-grove; Mr. A. J. Reynolds, two houses, West Heath-drive; Mr. J. Hudson, parish hall, Cricklewood-lane; Mr. B. P. Haig, six houses, Nant-road. The Rural District Council has passed the following plans:—Twelve houses, Kingsley-road, Pinner-road, Watford Land Syndicate, by Mr. G. E. Gomme; pair of houses, Pinner-road, for Mr. P. Godfrey; pair of villas, for Mr. Max Hoffler.

Holborn.—The following work is to be carried out by the firms named:—Messrs. D. R. Paterson, Ltd., new sewers in Little Bath-street and Chancery-lane, 2,404*l.*; French Asphalte Company, Ltd., repaving Tottenham Court-road, from Store-street to Oxford-street, with compressed rock asphalt, and repairing concrete foundation, 11s. per yard super.; Val de Travers Asphalte Paving Company, Ltd., repaving New Oxford-street with compressed rock asphalt, 9s. 7½d. per yard super., and for Portland cement concrete and floating, 18s. and 24s. per yard cube, respectively. An offer by Messrs. T. Faldo & Co., to lay an area of 30 or 40 yds. of their new reinforced asphalt paving in Goldsmith-street has been accepted under the usual conditions. The Postmaster-General has agreed, in connexion with the rebuilding of the post-office at the corner of Museum-street and High Holborn, to arrange the frontage of the new building so as to throw into the public way an area of about 90 ft. super.

Islington.—Road repairs are to be carried out at an estimated cost of 255*l.* Mr. A. B. Howell, Engineering Assistant, has been appointed Assistant Surveyor to the Mansfield Town Council. Mr. H. E. Tasman, Engineering Assistant in the Works Department, has been promoted a grade, and his salary has been increased to 126*l.* per annum.

Kensington.—299*l.* is to be spent in kerbing and paving works.

Lambeth.—198*l.* is to be spent in sewage works in Manners-street and Sutton-street, York-road. The South Metropolitan Gas Company are to convert 670 street lamps (No. 4 burners) to the inverted type at 3s. per lamp. Plans have been passed for seven houses, to be erected on the north side of Sancroft-road, for Mr. G. Brittain on behalf of the Duchy of Cornwall.

Leyton.—Tenders are to be invited for the heating and wiring of the extension of the public offices now being erected. Tenders are also to be invited for 100 public lighting lanterns, with clock switches, to complete the conversion of gas-lamps in the district to electricity. Plans have been passed as follows:—Mr. F. C. Carter, four shops, High-road, Leytonstone; Mr. J. Sayer, alterations to Nos. 446 and 448, Hoe-street; Mr. W. Manders, forty-eight houses, Sanderstead-road; West Ham Union, additions to store, Union-road.

Marylebone.—Plans have been passed as follows:—Mr. J. Hudson, store buildings in Outer-circle, Regent's Park, for the Zoological Society; Mr. G. Vernon, stone front to the Portland Hotel, Great Portland and Gildea streets.

Wandsworth.—Tenders are to be invited for paving Badminton-road, Balham, and part of Baldry-gardens, Streatham. Portions of Penwortham-road, Streatham, Cavendish-road, Clapham South, and Greyhound-lane, Streatham, are to be paved as new streets. Messrs. S. Lane & Co. are to carry out drainage works at the Streatham Cemetery, at a cost of 795*l.* The Engineer's estimate was 825*l.* The Council has passed a plan lodged by Messrs. Rowley Brothers for the erection of 103 houses in Derington-road, Church-lane, Lessingham-avenue, Oakeburn-road, and Cowick-road.

West Ham.—Plans have been passed as follows:—Mr. F. Hamlett, alterations to Mansfield House, Barking-road, Canning Town; Messrs. F. & E. Davey, Ltd., hospital, Florence-road, Helena-road, and Upper-road, Plaistow; Messrs. G. & J. W. Fox, five houses, Prince Regent's-lane, Plaistow. Notification has been received from the directors of the London and Provincial Bank that they have decided to rebuild their banking premises at the corner of Angel-lane and Broadway, Stratford.

Willesden.—At the last meeting of the Council the Engineer (Mr. O. Claude Robson) submitted alternative plans and estimates of the cost of providing accommodation for twenty beds at the Isolation Hospital, and the necessary additional staff. The Committee recommended that the scheme, to cost 7,296*l.*, be approved, and that application be made to the Local Government Board to sanction the borrowing of the amount named. The matter was referred to the Works Committee. Portion of Prout-grove is to be made up as a new road.

METROPOLITAN ASYLUMS BOARD.

THE fortnightly sitting of this Board was held on Saturday last week, when the following, amongst other business, was dealt with:—

Alterations to Laundries.—The General Purposes Committee recommended that certain alterations be carried out in the laundries of the various hospitals to meet the requirements of H.M. Inspector of Factories, and the Works Committee was instructed to see the work done.

Gore Farm Hospital.—It was decided to construct a boundary fence at this hospital, at an estimated cost of 175*l.*, and to erect a new smithy.

Joyce Green Hospital.—It was resolved to postpone the repair of the external roads and the proposed cleaning and painting works at this institution until next year.

Caterham Asylum.—Plans for the erection at a cattle-shed at this Institution were ordered to be formed for the Local Government Board for their approval.

BUILDERS' BENEVOLENT INSTITUTION.

THE sixty-second annual general meeting of the Builders' Benevolent Institution was held at 31 and 32, Bedford-street, Strand, W.C., on Monday, July 26.

The minutes of last annual meeting were read and approved; the appended annual Report, the audited accounts, and the amended rules were read and approved. The following elections were made:—President, Mr. Howell J. Williams, J.P., L.C.C.; Treasurer, Mr. J. Howard Colls; Committee, re-elected, Mr. C. Ansell, Mr. W. Brass, Mr. T. Hall, Mr. B. Hannen, Mr. H. Arthur Bartlett, Mr. H. Holloway, J.P., Mr. J. Randall, Mr. W. Shepherd, Mr. T. Stirling; elected, Mr. J. W. Lorden, Mr. F. G. Rice, Mr. J. C. Nicholson.

Votes of thanks were given to Mr. J. W. Lorden for his services as President during the past year, also to the Hon. Auditors (Mr. J. T. Bolding and Mr. R. J. Ward, F.C.A.), the Trustees, Vice-Presidents, Committee, and Dinner Stewards.

The Committee submitted the sixty-second annual report. They deeply regretted that, in consequence of the continued depression in the building and allied trades the funds at their disposal had decreased to such an extent that they had been obliged to sell out 500*l.* of stock to meet liabilities in the past year. The Committee earnestly appeal for assistance in order to make provision for the many claims upon the charity. They desired to register their hearty vote of thanks to Mrs. Richardson for her kind gift of 857*l.* in memory of her deceased husband. The money had been invested in the purchase of London and South-Western Railway Company stock, and the proceeds would be devoted to paying a female pensioner, approved by the Committee and nominated by Mrs. Richardson. Attention was directed to the fact that the greatest economy was exercised in keeping down the administrative expenses. During the year three additions had been made to the pensioners' list, which now consists of twenty-nine men and twenty-seven women. Five male and five female pensioners have died during the last twelve months; the widows of the deceased male pensioners have been placed on the list after careful investigation of their claims. The Committee desire to thank Mr. J. W. Lorden for his valuable services and kind contribution as President. Also the Trustees Mr. F. J. Dove, Sir Arthur C. Lucas, Bart., Mr. T. F. Rider, Mr. J. Howard Colls, Mr. T. Stirling, and Mr. J. T. Bolding, the Honorary Auditors (Mr. J. T. Bolding and Mr. R. J. Ward, F.C.A.), and the Dinner Stewards. The annual dinner will be held on Thursday, November 25, 1909.

Obituary.

MR. ARCHIBALD TURNBULL.

The death of Mr. Archibald Turnbull, builder, took place at his residence, 119, Croydon-road, Newcastle, on the 22nd ult. Mr. Turnbull, who was 63 years of age, was a native of Jedburgh. He came to Newcastle thirty-five years ago, and twenty-one years ago he commenced business on his own account in Gallowgate, and afterwards removed to Bell's-court, Pilgrim-street.

General Building News.

NEW CHURCH, NATLAND, WESTMORLAND.

A new church is being erected at Natland, near Kendal. The building will provide accommodation for 261 worshippers, and it is estimated that the cost will be about 6,000*l.* Contracts to the amount of 4,500*l.* have already been entered into, the contractors being Mr. J. W. Howie, Kendal, masonry; Messrs. J. Hatch & Sons, Lancaster, joinery; Messrs. R. Hall & Sons, Lancaster, slating and plastering; and Mr. A. Moorhouse, Kirby Lonsdale, plumbing and glazing. The work is being carried out under the supervision of Messrs. Austin & Paley, architects, Lancaster.

BAPTIST CHURCH, GOSPORT.

A Baptist church is being built on a site in Stoke-road, Gosport. The church provides 495 sittings, and on special occasions 620 people can be accommodated. The walls are faced in best red bricks and relieved with dressings of Bath stone. The roof is covered with Welsh slates. The glazing of the windows is in cathedral tinted glass, with leadwork. The seating and the rostrum and the gallery front are in pitch-pine. Provision is made for lighting with electricity and heating with hot water on the low-pressure system. The architects are Messrs. John Wills & Sons, of Derby and London, and the builder is Mr. John Hunt, of Gosport, the contract being in the sum of 2,215*l.* 10s.

PROPOSED IMPROVEMENTS, UPTON CHURCH.

Application is to be made for a faculty to enlarge the vestry of Upton Church, and to alter the position of the organ and two stained-glass windows. The plans for the proposed improvements have been prepared by Mr. Wimperis.

U.F. CHURCH FOR KINCRAIG.

The United Free congregation of Alvie have now entered into occupation of a new church built at Kincraig. The new church, which was erected by Messrs. Cowieson & Co., Glasgow, from a design by Mr. Alexander Cattanach, architect, Kingussie, is seated for about 250.

CHURCH OF ST. MICHAEL AND ALL ANGELS, SUTTON IN-ASHFIELD.

The foundation-stone of this church was laid recently. The chancel and vestry were built about twenty-four years ago, and a temporary corrugated-iron nave was added a few years later. In 1905 plans were prepared by Mr. Louis Ambler for completing the church in a permanent manner, but on simpler lines than those proposed in the original design. The present work consists of a nave about 80 ft. long, 30 ft. wide, and 50 ft. high to the ridge, separated by arcades of five bays from the aisles, which are each 10 ft. wide, that on the north side terminating at the west end in the base of the tower, forming an entrance lobby and vestibule, but not being built now. A clergy vestry and a heating chamber are to be added at the east end, adjoining the existing vestry and chancel. The external walls are of Bulwell stone, with

Digitized by Google

Weldon stone dressings, and lined with brick, to be plastered, the internal arches and columns being of Ancaster stone. The roof will be of fir, covered with red tiles to correspond with the existing roof. The floor under the seats and in the vestry will be of wood blocks, and the passages will be paved with marble mosaic terrazzo. The church will provide sitting accommodation for 600. Mr. Ernest Schofield is the clerk of works, and Messrs. John Thompson & Co., of Peterborough, the builders.

BUILDING WORK IN DUNFERMLINE.

At a recent sitting of the Dunfermline Dean of Guild Court the Trustees of the late Mr. William M'Laren were granted warrant to erect a porch at the main entrance to St. Leonard's Church; the School Board warrant to take down houses in New-row and erect an extension of the Lauder Technical School; and A. S. Fernie, builder, to demolish existing buildings at 153, Baldridgeburn, upon the site of which workmen's dwelling-houses and shop will be erected. The extension of South Dewar-street by Colonel Hunt, of Pittencrieff, was approved of.

BUILDING IN ABERDEEN.

Judging from the condition of employment for operative masons, the building and monumental sections of the granite trade have improved, not only in the city, but also in some of the country districts (says a writer in the *Aberdeen Evening Express*). Work has been more easily obtained, and, although some of the jobs were completed, and, consequently, a number of men were paid off, fortunately other openings were soon found, so that on the whole employment has been more plentiful. In the city trade has improved, both in the monumental and building branches, though the latter is still far beow the normal state of affairs. There has, however, recently been evidence of a slight improvement in the building trade of the city, and, with the likelihood of several big jobs coming into the market soon, trade ought to be brisker in the latter part of the year than it has been so far. It is very probable that the new extension to the Royal Infirmary will be commenced before long, and this would go far to improve the prospects for the winter and the following spring, and would provide work during the dull months of the year when employment is difficult to obtain. The Prudential Assurance Company have decided to build new offices in Crown-street, and these buildings, once they are in course of erection, will provide a number of men with employment for some time to come. Another job which is likely to come into the market soon is the contemplated extension to Broadford Works. In the country districts of Aberdeenshire the improvement in the building trade is even more apparent, and there can be found no room for complaint, as things are keeping up well, and showing no evidences of such a depression as have lately been experiencing in the city. In many parts of the country trade is fairly brisk, with the men fully employed at present, and having no difficulty in finding work. The future prospects are also good.

POLICE-STATION, SOUTHWICK, SUSSEX.

A sub-police-station has been erected at Southwick, and is now practically ready for occupation. The building, designed by Mr. H. W. Bowen, the Architect and County Surveyor, has accommodation for a married sergeant and three constables. At the rear of the constables' quarters is the official accommodation, comprising a charge-room and two cells. These latter are constructed of solid brickwork, Boyle's patent system of ventilation being adopted. Messrs. W. A. Gates & Son, of Shoreham, were the builders.

COTTAGE HOSPITAL EXTENSION, LEEK.

A new wing has been added to the Leek Memorial Cottage Hospital, at an approximate cost of 3,500*l*. The architects were Messrs. W. Sugden & Son; the building contractor, Mr. Henry Grace; the contractor for plumbing, glazing, painting, etc., Mr. E. Phillips; the contractors for heating, Messrs. H. Lownds & Co.; for linoleum, Messrs. A. Overfield & Co.; and for blinds, etc., Messrs. G. Pedley & Son.

BANKING PREMISES, ELLESMERE PORT, LIVERPOOL.

New premises have been erected by the Bank of Liverpool, Ltd., at Ellesmere Port. The building is built of terra-cotta and red brick, and has been built to the designs of Messrs. Grayson & Ould, architects, Liverpool, by Messrs. John Mayers, Son, & Co., of Chester, Mr. Robert Counsell being clerk of works.

ASSEMBLY HALL, CARDIFF.

The premises known as the Judge Gwilym Williams Memorial Hall have now been completed and opened. The building comprises an assembly hall to hold about 1,000, just above the street level, and a workmen's institute in the basement. The institute comprises a billiard-room, with a library and committee-room. The architects were Messrs. A. O. Evans Williams & Evans, Pontypridd, and the contractors Messrs. Charles Jenkins & Son, Porth. The warming installation on the low-pressure hot-water system has been put in by Messrs. Hampton & Co.

PROPOSED SEA DEFENCE WORKS, TEIGNMOUTH.

Mr. P. M. Crosthwaite, C.E., recently held an inquiry at Teignmouth relative to the application of the Urban District Council to the Local Government Board for sanction to borrow 2,700*l*. for works of sea defence. Mr. A. P. Dell, Clerk to the Council, explained that after the breach in the wall made by the heavy easterly gale of November last, the Council went into the question of the protection of the existing wall from a point opposite St. Michael's Church, and a scheme prepared by the Surveyor was approved by Mr. T. H. Gibbons, formerly divisional engineer, Great Western Railway Company, the proposal being to build a wall in front of the existing wall and carry over an apron piece as a protection, the reason being that a scour of the sand had exposed the foundations of the existing wall and caused the damage. Mr. C. F. Gettings, Surveyor and Water Engineer, and Mr. Gibbons, also gave details of the scheme.

NEW COUNTY BUILDINGS, ISLE OF ELY.

New buildings for the Isle of Ely County Council have been erected on a site not far from the station at March. A competition was arranged for designs, and that of Mr. H. J. Green, of Norwich, was accepted. The tender of Mr. R. Shanks, of Chatteris, for the building at 4,763*l*. was chosen, and with further items for heating, outside railings, and gates, etc., brought that amount to 5,864*l*., and the total cost has been 8,133*l*.

HOME FOR CRIPPLED CHILDREN, HORNSEA.

A holiday home for poor crippled children at Hornsea has been opened by the Hull Guild of Brave Poor Things. The new home has been built from the plans of Mr. Runton, the architect, and has cost 1,400*l*.

SWIMMING-BATH, ABERTILLERY.

The Trustees of Powell's Tillery Institute, Abertillery, are contemplating the addition of a swimming-bath to their gymnasium, and Mr. F. R. Bates, architect, of Newport, Mon, has been consulted on the matter.

TRADE NEWS.

THE Pear Tree Church, near Southampton, is being ventilated by means of Shorland's patent exhaust roof ventilators and special inlet ventilators, the same being supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Messrs. J. B. Joyce & Co., Whitchurch, Salop, have received the order for a large clock for the head offices of the Refuge Assurance Company, Oxford-street, Manchester. It will show time upon four dials, each 12½ ft. diameter, of a special design, and will be illuminated at night.

Appointment.

BRITISH MUSEUM, PRINTS AND DRAWINGS.

Mr. Laurence Binyon has been appointed, upon promotion, to succeed Mr. Freeman Marius O'Donoghue, upon the retirement of the latter from the post of Assistant-Keeper in the Department of Prints and Drawings.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Mr. T. H. Watson has taken into partnership Mr. Norman Thorp, A.R.I.B.A., who for some ten years was an assistant to Sir Aston Webb, R.A. Mr. Thorp has assisted Mr. Watson for more than a year in his practice as an architect and surveyor.——Messrs. Field, Sons, & Glasier, auctioneers, surveyors, and estate agents, of, 54, Borough High-street, Southwark, announce that the partnership hitherto subsisting between them and Mr. Frederick William Field has been dissolved, and that they have acquired the goodwill and other assets of the business, which will be carried on by them at the old address under the existing firm name of Field, Sons, & Glasier.——The business of Messrs. J. & G. Murrell (smiths' and hot-water, gas, and iron staircase engineers), Clifton-street Works, Latimer-road, Notting Hill, W., has been taken over by Mr. R. J. Key.

VICTORIA AND ALBERT MUSEUM.

In the Parliamentary papers recently Mr. Tyson Wilson asked the First Commissioner of Works if he is aware that practically the whole of the workmen who were engaged in fitting up the work in connexion with the Victoria and Albert Museum, South Kensington, have been discharged, although there is a considerable amount of work uncompleted, and whether, in view of the amount of unemployment in the building trade in London, he can see his way to re-engage the workmen with the object of completing the work.—Mr. Harcourt replied that the work for which his Department is responsible has been completed, and it is of course impossible for him to re-engage workmen for whom there is no work. The fitting up of the exhibits is a matter for the Board of Education.

FURNITURE AT THE BRUSSELS EXHIBITION.

The display to be made by the furniture trades next year at Brussels will be one of the most attractive in the Exhibition. The effective device of furnishing entire rooms is to be adopted by Messrs. White, Allom, & Co., Messrs. Gill & Reigate, Mr. C. J. Charles, Messrs. Howard & Sons, Ltd., and Messrs. Stenhouse & Savage; and there will be a collective exhibit of chairs by five firms at High Wycombe, who have taken 1,000 sq. ft. for the purpose, and may increase that space if other firms can be induced to come in.

EXETER MEMORIAL.

The corner-stone of a monument to Exeter Protestant martyrs was recently laid. The monument, which was presented, will be of grey Dartmoor granite, and will rise to a height of rather more than 20 ft. Around the four sides of the base, and immediately above the steps, will occur large recessed panels, which have been modelled and cast in bronze. These, raised in high relief, will represent various incidents in the lives and deaths of the two martyrs. The work is to be done by Messrs. Harry Hems & Sons, of Exeter, Mr. J. Archibald Lucas acting as architect.

BRITISH MUSEUM, NEW BUILDINGS.

A model has been deposited for exhibition in the King's Library, British Museum, of Mr. John J. Burnet's design for the north elevation of the new buildings to be erected upon the site on the south side of Montague-place: there are also shown casts of the bases and capitals of the pillars. The proposed façade extends over 386 ft., and embodies an order of engaged Ionic columns, similar to those of the main front, by Sir Robert Smirke, in Great Russell-street, but raised 14 ft. above the street level on a base which extends along the entire north front. Messrs. Charles Wall, Ltd., took the first contract, comprising the foundations, basement, and sub-ground floors, for 37,500*l*. The block, 60 ft. deep, and standing some 40 ft. back from the former building line, has five stories, the main and top floors containing whole-length galleries; a large staircase will give access from an extension of the present north reading-room. The design embraces two pylons, about 90 ft. high, on the flanks, carrying sculptured groups.

MEMORIAL TO BISHOP LLOYD, NEWCASTLE.

A sculptured tomb, with effigy, has been erected in the Cathedral, Newcastle-on-Tyne, as a memorial to the late Dr. Arthur Thomas Lloyd, Bishop of Newcastle. The memorial is placed on the north side of the choir, next to the sedilia, and underneath the screen, which has been duplicated so as to form a canopy above the monument. The recumbent figure has been executed in white Carrara marble by Mr. F. W. Pomeroy, A.R.A.; the general design of the tomb was made by Messrs. Oliver, Leeson, & Wood, of Newcastle.

NO. 2, QUEEN VICTORIA-STREET, E.C.

Messrs. Mappin & Webb, Ltd., are about to effect an extensive structural alteration of their premises at the corner of Poultry and Queen Victoria-street, which were first built for them, about thirty-five years ago, after Mr. John Belcher's designs. The work for the alterations and improvements will be carried out by Mr. John Belcher, R.A., the architect of Messrs. Mappin & Webb's new premises in Oxford-street.

SMALL HOLDINGS AND VACANT LANDS CULTIVATION.

The Board of Agriculture have issued a circular letter to County and County Borough Councils stating that, in their opinion, the phrase "will themselves cultivate the holdings," in the Small Holdings Acts, does not inhibit any council from providing holdings for applicants who, whilst already engaged in some occupations, have spare time enough for, in addition, the successful cultivation of small holdings. The unused lands temporarily dealt with by the Vacant Lands Cultivation Society are similarly let for the time being to men who, being partially employed, are moreover enabled thereby to make a profitable use of their spare hours and to enjoy, at a very small, and in most cases no, cost to themselves, the

Digitized by Google

produce of their labour. The Society appeal for contributions in aid of their work; they are at present in co-operation with the London County Council, and some of the Borough Councils in respect of existing vacant lands in Hackney, Westminster, Fulham, Wandsworth, Balham, and elsewhere, and the Gas Light and Coke Company have given them the temporary use of about 40 acres in West Ham and Canning Town, and of 7 acres in Townmead-road, Fulham. The average yield of six months' cultivation ranges from 4*l.* to 7*l.* and more for a plot of 20 rods, and the Society hope that as many as 500 poor men will soon be supplied with plots. The movement is extending to many of our large provincial towns, and is popular in the United States; in Philadelphia, for instance, during twelve years past, help and benefit have been afforded to 800 families, and to more than 3,000 women and children. The (honorary) Secretary to the Society is Mr. Joseph Fels, 39, Wilson-street, E.C.

A DECEASED ARCHITECT'S ESTATE.

The estate of Mr. James Medland Taylor, Fellow and an ex-President of the Manchester Society of Architects, who died on May 31, aged 75 years, has been sworn at the value of 66,163*l.* gross, with 84,047*l.* net personalty.

LONDON GENERAL POWERS BILL.

On Monday the Duke of Northumberland's Committee of the House of Lords considered the London County Council (General Powers) Bill, which, amongst other things, contains a new set of regulations governing the erection of steel skeleton framework buildings. When the Bill was before the House of Commons Committee considerable opposition was forthcoming from the Royal Institute of British Architects, the Surveyors' Institution, and the Institution of Civil Engineers. On Monday the opposing parties were not represented, and the preamble of the Bill was carried. It is understood that during the interval which has elapsed since the Bill was before the Commons an agreement between the parties has been arrived at.

POST-OFFICE (NEW) BUILDINGS, HOLLOWAY.

Upon the transfer to South Kensington of the Savings Bank Department a few years since from Queen Victoria-street the offices thus vacated were taken over by the Money Order Department, St. Martin's-le-Grand, and the Telephone Department was, as well, housed in Queen Victoria-street. Consequently upon the increase of the latter branch the Postmaster-General has resolved to assign to it the entire buildings in Queen Victoria-street, and to remove the Money Order Department to new offices at Manor-gardens, Holloway, the erection whereof is about to be proceeded with. The Commissioners of H.M.'s Works, etc., have invited constructional schemes and tenders based thereupon for the erection of the new buildings in reinforced concrete.

FARM-STREET CHURCH, MAYFAIR.

On Saturday, July 31, was celebrated the sixtieth anniversary of the opening by Cardinal Wiseman of this, the first church in London which has belonged to the Order of Jesuits. The Church of the Immaculate Conception was originally erected after designs by J. J. Scoles, and is illustrated in our number of June 2, 1849. The south front of the church, designed in the early XIVth century style, is supposed to have been based upon the south front of Beauvais Cathedral. Henry Clutton added the eastern aisle and the Chapel of the Blessed Sacrament in 1858-9. The high altar, the gift of Miss Monica Tempest, of Broughton Hall, W.R. Yorkshire, at a cost of 1,000*l.*, was designed by A. W. Pugin; the east window, above, is by Mr. Wailes. Six years ago Messrs. Romaine-Walker & Besant added the western aisle, having a high party wall for its west boundary. They successfully overcame the difficulty of lighting by planning a series of side chapels, with their sides canted, so as to enclose between them small semi-octagonal chambers (for the use of the confessors) roofed in about 8 ft. above the ground, and lighted by a skylight. Large windows, giving light to the aisles and nave, and opening into the areas, were set in the canted sides of the chapels above the intervening chambers. At the left of the entrance from Farm-street is the chapel of Calvary; that of St. Ignatius is in the north end of the western aisle. In the *Builder* of July 10, 1886, were published Messrs. Goldie, Child, & Goldie's designs, somewhat modified in the building, for the residence, adjoining the church, of the Jesuit Fathers. The designs, made to harmonise with those of the church and the beautiful side porch, provided for a wing to contain the library, chapter-room, additional cells, etc., and for the continuation of the ground floor corridor as a cloister around the garden to the south.

CORNISH AND DEVON GRANITE QUARRIES.

In the Parliamentary papers Mr. Pike Pease asks for the number of persons employed inside and outside the granite quarries of Cornwall and Devon in each of the last five years.—Mr. Gladstone gives the following statistics:—1904, total number of persons employed, 1,746; 1905, 1,453; 1906, 1,249; 1907, 1,263; 1908, 1,240.

THE SANITARY INSPECTORS' EXAMINATION BOARD.

The following candidates passed in the examination for sanitary inspectors under the Public Health (London) Act, 1891, held at the Municipal Technical School, Birmingham, July 13 to 17; the names of the institutions at which the candidates received instruction are also given:—Mr. James F. Brailsford, Mr. Stanley B. Collins, Mr. Austin Muschialli, Miss Mabel Reid, Mr. Alfred J. Redfern (Birmingham Municipal Technical School); Miss Dorothea G. M. Allen (National Health Society); Miss Alice Harding, Miss Fanny R. Letters (the Royal Sanitary Institute).

Capital and Labour.

STATE OF EMPLOYMENT IN THE BUILDING TRADE.

Employment in June was slack generally, except with painters, who were fairly well employed. It showed little general change as compared with a month ago, and was rather worse than a year ago. The percentage of trade union carpenters and joiners unemployed at the end of June was 10·4, as compared with 8·8 a month ago and 9·2 a year ago; and for plumbers, at the same dates, the percentages were 14·1, 14·1, and 12·8 respectively. In the case of carpenters and joiners, however, there was a decline in the percentage unemployed in some districts as compared with a year ago, the increase in the general percentage being due to a large increase in Scotland and the Northern Counties. Returns received from bricklayers, masons, and slaters' unions show a slight improvement compared with a month ago, painters showing a decline. For London the trade union returns show that 13·5 per cent of carpenters and joiners were unemployed at the end of June, as compared with 9·2 a month ago and 16·9 a year ago; the corresponding percentages for plumbers were 17·5, 17·1, and 15·6. Returns received from 677 firms employing 39,797 workpeople at the end of June show that there was a decrease of 1·3 per cent. in the total number employed by them as compared with a month ago, and a decrease of 8·6 per cent. as compared with a year ago. In the Northern Counties and Yorkshire district, however, there was an increase in the number employed compared with both a month ago and a year ago.—*Board of Trade Labour Gazette.*

Law Reports.

CASE UNDER THE LONDON BUILDING ACT, 1894.

THE case of Davidge *v.* Stanford's House Property Investment Company, Ltd., was heard at Greenwich Police Court on July 15 and 22, before Mr. A. E. Gill. It was a case in which the buildings adjoining a party wall were at different levels, the difference in height varying from 1 ft. 3 in. to 6 ft. 6 in.

A summons was taken out by the District Surveyor against the defendant company for non-compliance with a notice of irregularity requiring the carrying up of the party walls between Nos. 175 and 177, Nos. 177 and 179, 131 and 183, George-lane, Lewisham, above the roof of the highest building in accordance with sect. 59 (1) of the London Building Act, 1894.

The magistrate, in making an order for compliance with the notice of irregularity, said:—

"The London Building Act, 1894, sect. 59 (1), directs that every party wall shall be carried up above the level at which it separates the buildings adjoining it.

The material words in respect of buildings of the class involved in this case are as follows:—'Every party wall shall be carried up . . . above the roof, flat, or gutter of the highest building adjoining thereto to such a height as will give a distance . . . of 15 in. measured at right angles to the slope of the roof, or 15 in. above the highest part of any flat or gutter, as the case may be.'

It appears to me unnecessary to determine whether the portion of wall carried up to comply with this section is properly described as 'party wall' within the meaning of the Act, or whether that term is to be restricted to the portion of the wall below, which actually separates the two adjoining buildings.

The question raised in the case is not free from difficulty, and there are dicta in the case of Drury *v.* Army and Navy Stores which seem to favour the defendants' contention.

But I am of opinion that that case is not an authority upon the question involved in this case. It was decided upon facts radically different and upon a different section of the Act, namely, sect. 75, where 'party wall' is used in respect of the dividing wall of a warehouse, and therefore in a sense different not only to its ordinary meaning, as laid down in Weston *v.* Arnold, but also to its definition given in sect. 5 (16) of the Act.

In this case there are three party walls—the first separating Nos. 175 and 177, George-lane, the second separating Nos. 177 and 179, George-lane, and the third separating Nos. 181 and 183, George-lane.

The highest building adjoining the first party wall is No. 175; adjoining the second is No. 177; and adjoining the third is No. 181.

I am of opinion, therefore, that to comply with this Act these walls must be carried up to a height of 15 in. measured at right angles to the slope of the roof in the first case of No. 175, in the second case of No. 177, and in the third case of No. 181, as shown in red on the plans put in.

The defendant company have omitted to fulfil these requirements, and have made default in complying with the notice of irregularity, and I must therefore make an order requiring them to comply with it within twenty-eight days."

ARCHITECT'S ACTION AGAINST BUILDERS AND CONTRACTORS.

MR. MUIR MACKENZIE, the Official Referee, on the 31st ult., delivered judgment in the case of Brown *v.* Mickel & Co.

In this case the plaintiff, Mr. Durand Brown, an architect and surveyor, brought the action to recover from the defendants, builders and contractors, of Glasgow, 6,926*l.* 19s. 6d., balance of an account for professional services rendered as an architect and surveyor in connexion with the erection of buildings in Great Portland-street, London. Defendants admitted the employment, and said that the plaintiff had been paid 2,500*l.* on account. They contended that a charge for extra work related to work which was impliedly referred to in the contract, and they counter-claimed for damages for delay in the carrying out of the plaintiff's work, by which they alleged they had lost about 2,000*l.* in rents. Altogether the counter-claim amounted to between 2,000*l.* and 3,000*l.* Defendants brought 1,000*l.* into Court, which they said was sufficient to satisfy any claim which the plaintiff had against them.

The freeholder of the site was Lord Howard de Walden, and he granted a lease to a gentleman named Wharrie. It was arranged that four blocks of flats should be erected on the site, and the plaintiff was employed under the terms of a letter written to him by Mr. Thomas Mickel, in which he said that, in the event of his entering into a building agreement for the erection of buildings on the site, he would employ the plaintiff as the architect and surveyor for the buildings, his remuneration to be 5 per cent. upon the cost of such buildings, to be payable, *pro rata*, as the work progressed. The buildings cost 145,000*l.*, and the ground rent was 4,800*l.* per annum. Plaintiff claimed about 2,000*l.* over and above his 5 per cent. upon the cost of the buildings for extra work, which he alleged was not covered by his engagement, and he said that the amount he was claiming consisted of fair and reasonable charges outside the 5 per cent.

After hearing the evidence and the addresses of counsel,

The learned Official Referee, in delivering judgment, said the action was brought by the plaintiff against the defendants to recover 6,926*l.* 19s. 6d., the balance due for services rendered as architect. The dispute was whether the plaintiff became entitled to the payment of 9,426*l.* 19s. 6d. as remuneration for his services as architect for the defendants in the erection of large blocks of flats. The plaintiff had been paid during the course of the work 2,500*l.* on account of his remuneration, and the present claim was for the balance. Defendants denied that the plaintiff was, in the circumstances of the case, entitled to any remuneration in excess of 2,500*l.*, and they pleaded a counter-claim alleging negligence and breach of duty by the plaintiff as architect, and defendants claimed damages to be set off against the amount which the plaintiff might recover. Shortly before the trial of the action, viz., on July 9 last, the defendants paid into Court a sum of 1,000*l.*, with a defence denying liability. The learned Official Referee, having referred in detail to the agreements, evidence of which had been given in the case, said that in some respects Mr. Brown occupied a double position, as he was to get payment from Mr. Wharrie of 9,250*l.* on completion of the four

Digitized by Google

blocks of flats, and in regard to the relations between himself and the defendants he was to get his remuneration as architect. The claim the plaintiff put forward against the defendants was as follows:—Five per cent. on the estimated sum of 145,000*l.*, 1,945*l.* 19s. 6d. for extra work, and 231*l.* in respect of out of pocket expenses. In considering the questions which had arisen upon the claim and the defence raised to it, the first thing he had to do was to construe the contract of employment entered into between the plaintiff and the defendants. That agreement provided that in the event of the defendants entering into the building agreement in respect of the site, then the defendants undertook to employ plaintiff as their architect and surveyor for the buildings to be erected, his remuneration to be 5 per cent. upon the cost of such building, payable *pro rata* as the work progressed. The important question to consider, then, was the meaning of the word "cost," and that was a question on which it was proper and legitimate to receive evidence for the purpose of showing what was the meaning which the parties attached to the word. He decided that it meant the cost to the builder, and not merely an estimated value by cubing out the work at so much per cube foot. That disposed of the first question. The next question was, what work was to be done for the remuneration? It was significant that the work was described as not only the work of an architect, but the work of a surveyor, and the employment was to be as architect and surveyor for the purposes of the building. The circumstances had to be taken into consideration. It apeared to him that in the circumstances the work which had to be done by the plaintiff was practically that which was incidental to the position of an architect. It had been pointed out to him (the Official Referee) that the scale and regulations of the Royal Institute of British Architects provided that certain things were not included in the scale of 5 per cent. prescribed by that body. As regarded that, the scale and rules of the Institute were in no way binding upon the Court, or upon a jury, or upon the person who employed an architect unless he expressly or impliedly agreed to abide by those rules. Judges, in directing juries, had repeatedly declined to award remuneration or compensation on the basis of that scale or upon that regulation unless that rate of remuneration had been expressly assented to, or it had been argued that the building owner had known that in employing the architect he was to charge in acordance with the scale. In these cases the question depended upon the agreement of the parties. The provisions of the scale could not have any application except that, upon a question of what would be fair remuneration for any work of an architect, the fact that it was a scale that had a certain amount of sanction attached to it by the weight of the repute of the persons who prescribed it was, of course, a thing to be regarded. In considering the matter of extra remuneration beyond the 5 per cent. the position of the plaintiff with regard to this enterprise was material. It was obvious that the plaintiff had an interest in the work going through. Having referred to the items upon this part of the claim in detail, the learned Official Referee said that, in his opinion, assuming that the extra charges were in respect of work which had to be paid for, the charges were unreasonable. Now he had to approach the most difficult question as to the sum on which the "cost" had to be calculated, and the date up to which it had to be calculated. The plaintiff did not complete the work. Whether that was his fault or not he did not think it was necessary to find. Of course, if it was his fault, it would not entitle him to any further remuneration. But that ground was not suggested by the defendants. They suggested that the plaintiff was entitled to be paid 5 per cent. on the cost of the work up to the time he ceased to do any work, which would be May 31. That appeared to him (the Official Referee) to be the correct interpretation, viz., that the remuneration was based on a *quantum meruit* on the scale of remuneration agreed to between the parties. The counterclaim was based on damages for delay with regard to the iron and steel work. It was alleged that the plaintiff delayed unreasonably the preparation of the plans for the iron and steel work, which caused the defendants damage. He thought there was some delay, and delay which there should not have been. But he could not find that the delay caused the defendants any pecuniary loss. He did not think that the measure of loss suggested by the defendants was one which he could find to be established. Upon the whole he thought the fairest decision he could come to, having regard to his findings of fact, and his ruling on the law was that the 1,000*l.* paid into Court by the defendants was a reasonable rate of remuneration to be paid to the plaintiff, and he decided that he was not entitled to anything more. He should therefore give the following decision:—Judgment for the defendants in the action, because the defendants had succeeded upon an issue going to the whole cause of action. There would be an order that the 1,000*l.* in Court be paid to the plaintiff. Defendants to have the general costs of the action after the date of the payment into Court, and the plaintiff to have his costs of the action up to the date of payment into Court, the two sets of costs to be set off one against the other.

Mr. P. Rose-Innes appeared as counsel for the plaintiff, and Mr. C. A. Russell, K.C., and Mr. A. W. Wright for the defendants.

BOROUGH ENGINEERS AS ARBITRATORS.

IN the Court of Appeal, before Lords Justices Moulton and Buckley, last week, the case of Blackwell & Co. *v.* the Mayor and Corporation of the Borough of Derby was heard, on the appeal of the plaintiffs from an order of Mr. Justice Bucknill in Chambers, staying the action under sect. 4 of the Arbitration Act.

Mr. Atkin, K.C., for the appellants, said that the question was whether the judge, in his discretion, was right in staying the action on the ground that the contract between the parties contained an arbitration clause under which disputes arising under the contract were to be referred to the arbitration of the Borough Engineer of the Corporation. The plaintiffs were electrical engineers, and the contract was for the construction of an electric tramway in Derby. The Borough Engineer had certified for certain penalties in respect of alleged delay in the completion of the contract, and the plaintiffs' case was that the delay arose from the arbitrary conduct of the Borough Engineer himself, in, as alleged, directing the work to be done in a certain manner and materials to be obtained from specific firms, and in refusing to permit the plaintiffs to store material required for the work in certain places. The action was brought by the plaintiffs to recover the balance alleged to be due under the contract. Counsel submitted that Mr. Justice Bucknill was wrong in staying the action, inasmuch as the dispute was not one which ought fairly to be referred to the arbitration of the Borough Engineer, who, in order to arrive at a conclusion, would have to sit in judgment upon himself.

Mr. Danckwerts, K.C., for the defendants, supported the order of the judge, submitting that the dispute in question was such as must have been in the contemplation of the parties when it was agreed that the Borough Engineer should act as sole arbitrator. The authorities showed that an arbitrator appointed under a contract was only displaced and the jurisdiction of the Courts called in aid when it was shown that the arbitrator was likely to be biased or that he had been guilty of misconduct, such, for instance, as receiving bribes. In the present case the *bona fides* of the Borough Engineer could not be attacked, the only suggestion being that, as he had certified for penalties, as he was entitled to do under the contract, he was not a fit person to arbitrate on the dispute. If it were sufficient, in order to oust an arbitrator, to say that he would be sitting in judgment upon himself, then contracting parties might just as well treat arbitration clauses as so much wastepaper.

Lord Justice Moulton said that the Courts, in exercising their discretion, must look at the facts of each particular case.

Mr. Danckwerts contended that Courts ought to act on fixed principles, and that, having laid down certain principles, they ought to be true to them, and people in entering into such a bargain did so with knowledge of those principles, and in the belief that they would be supported by the Courts.

Lord Justice Buckley asked whether Mr. Danckwerts thought that a person who was accused of being unreasonable was the best judge as to whether he had in fact been unreasonable.

Mr. Danckwerts replied that he personally would be the best judge of whether he had been unreasonable, whether he had been accused of being unreasonable or not. When the parties made the contract they must have known that in a dispute relating to penalties the conduct of the Engineer must necessarily be largely in question. Invariably in cases where there was an allegation of delay the contractor turned round and said that delay was due to the acts of the employers. He submitted that in such cases the jurisdiction of the Engineer as arbitrator ought not to be ousted.

Lord Justice Moulton, giving judgment, said that there was no doubt with regard to the law to be applied in this case. In olden days an agreement to refer disputes to domestic tribunals was not enforceable, but the Legislature had since recognised such an agreement was part of the contract, and that it would not be fair if it did not to a certain extent enforce arbitration clauses. But it wisely took this course: It gave a right to a person against whom an action was brought to come to the Court and ask the action to be stayed under the arbitration clause in the contract sued upon. The person so coming to the Court had to prove that he had always been ready and willing to go to arbitration, and then the Court had power under the Common Law Procedure Act to stay the action if it saw no good reason why the matter should not be disposed of in the way the parties had contracted. But each case had to be raised on its facts. In his lordship's opinion, where the nature of the dispute arising from facts which were subsequent to the contract was such that the Court thought that the arbitrator was not likely to be able to deal impartially with the dispute, it was open to the Court and it was their duty to refuse to enforce the arbitration clauses. It was suggested that this ruling would make arbitration clauses useless, but the Courts were quite able to judge what was the subject of the dispute, and they would not be misled by unfounded allegations. In the present case he was satisfied that the dispute was substantially, whether the Borough Engineer from the first acted unreasonably towards the contractors from the point of view of the contract. Corporations were, in his lordship's opinion, too fond of putting officers of their own in the position of arbitrators under a contract, and they forgot that, as the officer had to perform other duties for the Corporation, there might arise conflicting interests between those duties and his duties under the contract, which might give rise to unfair treatment of the contractor by reason of the zeal with which the officer performed those other duties. In the present case he was of opinion that the Court would not be acting in the spirit of the law if they were to shut the doors of the Courts to the action and force it to be referred to arbitration. He was satisfied that there was a substantial dispute arising out of events which occurred subsequent to the making of the contract, and he did not think they ought to force it to be tried by the Engineer, whose conduct was practically the sole point in dispute.

Lord Justice Buckley concurred. He said that he did not in any way reflect upon the Engineer, but in the circumstances he did not think he was the proper person to determine the dispute.

The appeal was accordingly allowed, with costs, and the order staying the action set aside.

Patents.

APPLICATIONS PUBLISHED.*

14,147 of 1908.—Josef Kudlicz: Dusting and blackening material for moulds, and a process for producing the same.

14,326 of 1908.—Amy Baker: Building tiles.

15,100 of 1908.—Julius Kathe: Process for rendering artificial stone, mortar, plaster, and the like waterproof, heat and electricity non-conducting, and soundproof.

15,976 of 1908.—John Parker: Manufacture of chimneypieces and the like.

19,166 of 1908. John Ernest Crossland: Casement windows.

19,231 of 1908.—Rudolf Vorbau and Hans Peters: Devices for mechanically plastering walls and the like.

20,233 of 1908.—William Yeats: Casement window sashes, doors, and the like.

22,113 of 1908.—Henri van Nermon: Locks.

22,827 of 1908.—George Harley Fellows, Charles Harry Fellows, and Daniel Darby, trading as Fellows & Darby: Sand-papering, emery grinding, and similar machines.

23,605 of 1908.—John Duncan Macleod: Chimney and ventilating shaft tops.

24,926 of 1908.—Leslie Sylvester Hackney: Ventilating apparatus.

28,111 of 1908.—Henry Ansel Hannum and Ralph Charles Hannum: Emergency exit door locks.

3,225 of 1909.—John Arthur Shaw and George Frederick Carter: Locks and the like.

3,417 of 1909.—Alfred Julius Boult: Bracing concrete pillars or piles.

5,009 of 1909.—Johann Gran: Hoisting devices for girders or the like.

7,124 of 1909.—Alexander Drew and Ludwig Schlentheim: Hollow or perforated building blocks.

7,782 of 1909: James Johnson: Emergency device for stopping holes in damaged pipes.

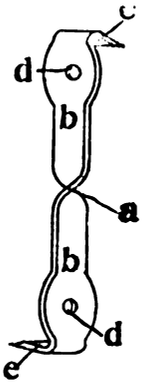
11,255 of 1909.—George Close: Means for supporting window sashes.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

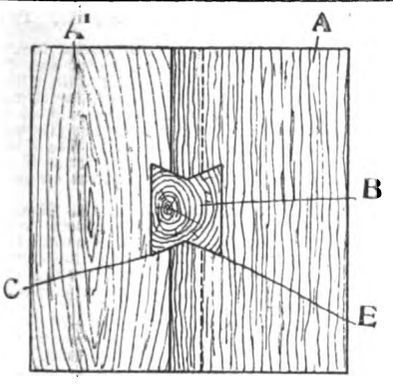
SELECTED PATENTS.

23,927 of 1908.—William Alfred Cammell and George Cooper: Hangers for beams, rafters, and other timbers in buildings. This relates to means for fastening together joists, rafters, and other timbers, and consists in providing a hanger of metal having pointed ends *e* and



flat surfaces *b* arranged at an angle to each other by twisting the metal, as at *a*, so that such surfaces may fit against the sides of joists crossing each other when the hanger is affixed thereto by driving the pointed ends *e* therein. Holes *d* for the reception of nails or screws may also be provided.

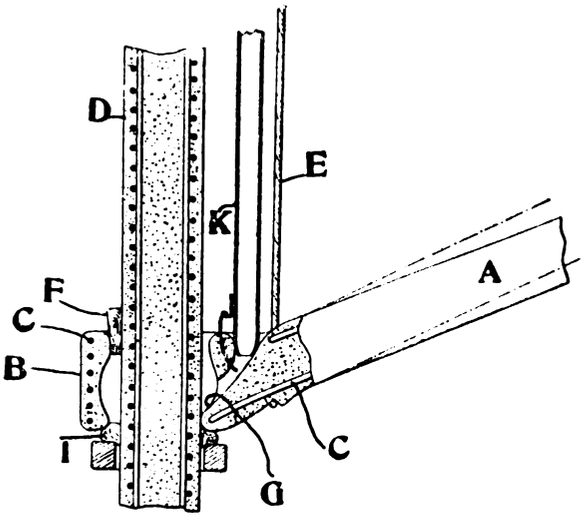
26,092 of 1908.—Charles Miles: Fixing together of prismatic blocks for flooring and paving. This relates to a method of fixing together prismatic blocks, and consists in providing dovetail slots C E in the blocks A A¹ of



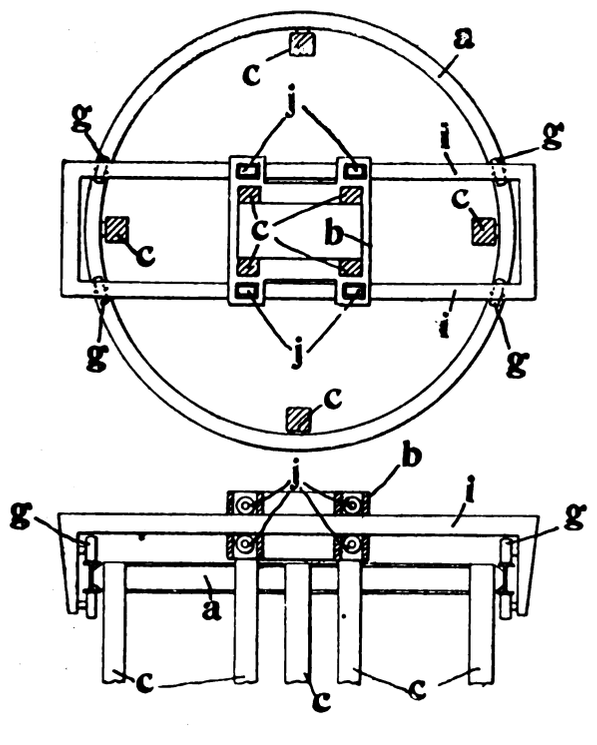
different shape, but complementary to each other, so that when a number of the blocks are secured together by a dowel B of the shape shown they may break joint.

26,828 of 1908.—Robert Alywn Arnold Stephen Piercy: Stagings or supports for submarine boring, blasting, pile-driving, block-setting, and like operations. This relates to stagings for submarine boring, blasting, pile-driving, block-setting, and like operations. In one form of the staging an outer and an inner structure, *a*, *b*, respectively, are employed, the outer *a* of circular shape, and the inner *b* substantially square in plan view. Each of the structures are supported on adjustable supports *c*. The circular outer structure *a* is of much larger size than the inner *b*, so that the inner component can be moved on the pairs of rollers *j*, *j* provided for this purpose, diametrically across from side to side on the bridge members *i*. The outer structure *a* forms a circular track for the pairs of rollers *g*, *g* on the bridge members for the inner structure. The inner structure *b* is furnished with a platform for carrying the tools or other working apparatus.

5,304 of 1909.—Armand-Gabriel Considère: Assembling or uniting reinforced concrete piles and stays. This relates to assembling or uniting reinforced concrete piles and stays. The ends of the stays A to be fixed under water are provided with sockets of concrete B, into which extend a number of rods C from the stay A. Each stay is put in place by passing its socket around a pile D, the socket being fixed at the required height by means of a vertical bar or post E. A wedge F is driven in between the pile and the upper edge of the



socket until a stop G, with which the latter is provided at the lower part, and on the opposite side of the wedge, bears against the pile. The grip of the wedge F and the stop G may be increased by first inclining the stay at a greater angle to the horizontal than that it finally assumes. This temporary position is shown in dotted lines. The wedge F is then tightened and the stay is lowered to its final position as shown in full lines. This downward movement locks the parts together in a firm and strong manner. The annular space between the pile and the socket is then closed at the bottom, for example, by means of a packing-ring I, which is held between the socket and a lower ring suspended by cords. Into the annular space is introduced an agglomerating material, such as mortar, or, preferably, pure cement which sets quickly, through an opening J in the socket, the said opening being connected to a pipe K, which extends above the water level. The relative positions of the pile and of the stay being ensured during the settling of the cement by the stop G and the wedge F, the assembling of the parts is effected under the best conditions.



SOME RECENT SALES OF PROPERTY

ESTATE EXCHANGE REPORT.

July 10.—By STEPHENSON & ALEXANDER (at Bridgend).

Wick, Glam.—Monkton Isaf Farm, 89 a. 2 r. 30 p., f.	£4,000

July 19.—By E. G. RIGHTON & SON (at Evesham).

Ebrington, Glos.—Pudlicote Mill, Coldicotts, Hall and Oakham Farms, 331 a. 0 r. 24 p., f.	13,157
Enclosures of arable and pasture, 93 a. 0 r. 24 p., f.	4,856
Sixteen cottages, residence, and 24 a. 3 r. 18 p., f.	3,536

July 20.—By HOLLOWAY, PRICE, & Co. (at Market Harborough).

Kibworth Beauchamp, Leicester.—Pasture and accommodation land, 168 acres, f.	8,260

By ALFRED J. BURROWS (at Ashford).

Swingfield, Kent.—Pay-st.-rd., freehold pasture land, 16 a. 1 r. 29 p.	500

July 21.—By STEPHENSON & ALEXANDER (at Pontypridd).

Pontypridd, Glam.—Llanover Arms (p.h.), u.t. 20 yrs., g.r. 6*l.* 19*s.* 4*d.*	3,000

July 22.—By WALTER LUDLOW & BRISCOE (at Birmingham).

Ipsley, Warwick.—Great Pheasant Farm, 235 a. 1 r. 6 p., f.	5,950

July 23.—By G. B. HILLIARD & SON (at Chelmsford).

Little Waltham, Essex.—Domsay Farm, 42 a. 3 r. 33 p., f.	980

By JAMES STRAKER & SON (at Abergavenny).

Llantillio Pertholey, Mon.—Llwyngwyn Farm, 137 a. 3 r. 38 p., f.	3,100
Little Llwyngwyn Farm, 52 a. 1 r. 14 p., f.	1,100
Blaengavenny Farm, 183 a. 1 r. 21 p., f.	2,950
Accommodation land, 28 a. 3 r. 32 p., f.	590
Cwmyoy, Mon.—Pont Rhys Powell Farm, 88 a. 0 r. 18 p., f.	1,400

By WINTERTON & SONS (at Lichfield).

Lichfield.—Ponesfields Farm, 68 a. 3 r. 32 p., f.	3,250
Curborough-la., cottage and 5 a. 2 r. 3 p., f.	300
St. John-st., plot of land, 1 a. 0 r. 6 p., f.	450
Chesterfield-rd., market garden, 3 a. 2 r. 13 p., f.	200
32, Bore-st. and two cottages adjoining, f.	1,500
11, Sandford-st. (s.), f.	225

July 24.—By BRUTON, KNOWLES, & Co. (at Gloucester).

Redmarley, Worcester.—Saxville Estate, 120 a. 0 r. 26 p., f.	2,400

By NORRIS & DUVALL (at Hertford).

Great Hormead, Herts.—Lilley End Farm, 87 a. 0 r. 32 p., f.	1,130
Ware, Herts.—1 and 2, Sams-yard, f.	50

By J. CARTER JONAS & SONS (at Cambridge).

Little Bradley, Suffolk.—Little Bradley Estate, 1,090 a. 1 r. 32 p., including the Manor and Advowson, f.	14,200

RECENT SALES.—*Continued on page 170.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50*l.*, 25*l.*, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3*s.*

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

Contracts.

BUILDING.

AUGUST 7. — **Heckingham.** — FOUNDATIONS, ETC. — Loddon and Clavering Guardians invite tenders for the construction of foundations and filter walls, etc., in connexion with the septic tank at their Workhouse at Heckingham. Plans etc., may be seen on application to Mr. Edward Cadge, Clerk to the Guardians, at office at Loddon.

AUGUST 9.—**Barrow-in-Furness.**—WAITING-ROOM, ETC.—The Corporation invite tenders for the erection of a waiting-room and convenience on the Promenade, Walney. Plans may be seen, and bills of quantities obtained, on application at the Borough Engineer's Office.

AUGUST 9. — **Bigrigg, Cumberland.**—HOUSES.—For four dwelling-houses at St. John's-terrace, Bigrigg, for Mr. W. W. Brindle. Plans, etc., may be seen at the office of Mr. Geo. Nelson, architect, 22, Lowther-street, Whitehaven.

AUGUST 9. — **Bingley.** — ADDITIONS.—For mason's, joiner's, plumber's, and other works for the proposed additions to manager's house, Bingley, for the Bank of Liverpool, Ltd. Plans may be seen, and quantities obtained, at the offices of Mr. James Hartley, architect, Skipton.

AUGUST 9.—**Soothill.**—HOUSE.—Erection of house, Leeds-road, Soothill (top of cutting). Plans, etc., may be seen, and bills of quantities obtained, at office of Mr. John H. Brearley, architect, 68, Commercial-street, Batley.

AUGUST 10.—**Cookham.**—WALL.—Cookham R.D.C. invite tenders to erect a concrete wall and iron fencing at Bullock's Hatch Bridge, Windsor-road. Specifications to be had at the Offices of the Council, Queen-street-chambers, Maidenhead.

AUGUST 10.—**Haslingden, Lancs.**—CONVERTING. —For converting Pike Law Farmhouse into a home for boys, for the Guardians of Haslingden Union. Plans may be seen, and bills of quantities, etc., obtained, at the office of Mr. H. Ross, architect, 15, Cannon-street, Accrington.

AUGUST 10.—**Headcorn.**—REPAIRS, ETC.—Kent Education Committee invite tenders for the execution of repairs and painting, etc., required to be carried out at Headcorn Council Schools. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. T. W. Burden, Headcorn.

AUGUST 10.—**Tonypandy.**—ALTERATIONS, ETC., TO HOTEL.—Making certain alterations and additions to De Winton Hotel, Tonypandy, for Messrs. D. John & Co., Ltd. Plans, etc., may be seen at the hotel.

AUGUST 11.—**Aber, Pontypridd, Skewen, etc.**—SCHOOLS.—Glamorgan C.C. invite tenders for the following works, viz.:—(1) Erection of new school at Aber (Ogmore Vale); (2) additions to the Pontypridd County School; (3) alterations to the Skewen Lower Council School, at Skewen; (4) boundary wall and iron fencing at Heolycyw Council School, near Bridgend. Plans, etc., may be seen, and bills of quantities, etc., obtained, for work No. 1 at the Tynewydd County Police-station, for work No. 2 at the Pontypridd Police-station and for work No. 3 at the Neath County Police-station. Plans may be seen, and specification and form of tender obtained for work no. 4 at the Bridgend Police-station. The plans, etc., of all these works may be seen or obtained at offices of Mr. W. E. R. Allen, Deputy-Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

AUGUST 11.—**Driffield.**—RESIDENCE.—Proposed residence, St. John's-road, Driffield, for Mr. W. T. Fox. Plans, etc., may be inspected at the office of Mr. Maurice D. Parkin, architect, Midway-avenue, Bridlington.

AUGUST 11.—**Macclesfield.**—NURSES' HOME, INFECTIOUS DISEASES HOSPITAL.—The Corporation invite tenders for a proposed addition to the Nurses' Home, situate on the hospital land in Moss-lane. Plans, etc., may be seen at the office of the Borough Engineer, Town Hall, Macclesfield, where specification, etc., may be obtained on deposit of 10*s.* 6*d.*

AUGUST 11.—**Padiham.**—RETORT HOUSE.—For a retort house and coal store in the new gasworks, for the U.D.C. Specifications, etc., may be obtained from the office of the Gas Engineer.

AUGUST 12.—**Penistone.**—CATTLE MARKET.—The U.D.C. invite whole or separate tenders for the formation and construction of new cattle market at Penistone, in accordance with plan, etc., prepared by Mr. H. J. Brettoner, Architect, Penistone. The plan may be seen at the Council Offices, and a copy of the quantities obtained, on depositing 10*s.* 6*d.*

AUGUST 12.—**Ravensthorpe.**—HOUSES.—Erection of eight houses, near North-road, Ravensthorpe. Plans may be seen, and bills of quantities obtained, at offices of Messrs. Kirk, Sons, & Ridgway, F.R.I.B.A., architects, surveyors, and valuers, Market-place, Dewsbury.

AUGUST 13.—**Cross Hills.**—RESIDENCE.—For a detached residence at Cross Hills. Apply to Mr. F. W. Petty, architect, Cross Hills, Yorks.

AUGUST 13.—**Wolverhampton.**—RESTORATION AND PRESERVATION OF THE STONEWORK AT THE ART GALLERY AND SCHOOL OF ART.—The Public Works Committee invite tenders for the restoration and preservation of the decayed stonework. General conditions of contract may be seen, and particulars, etc., obtained, on application at the Borough Engineer's Office.

AUGUST 14.—**Ballineen.**—PREMISES.—Tenders are invited for the erection of new business premises at Ballineen, Co. Cork, for Mr. Patrick Fehilly. Plans, etc., may be inspected at the office of the architect, Mr. James F. M'Mullen, M.R.I.A.I., 30, Southmall, Cork.

AUGUST 14. — **Bowburn.** — CHAPEL.—For a small Wesleyan Methodist Chapel, etc., at Bowburn Colliery. Bills of quantities on payment of deposit of 10*s.* 6*d.*, and plans, etc., seen at the office of Mr. J. Wilson Hays, architect, Wingate, Co. Durham.

AUGUST 14.—**Westwell.**—REPAIRS, ETC.—Kent Education Committee invite tenders for the execution of painting and repairs at the Westwell Council School and teacher's dwelling-house, required to be carried out at Westwell Council School. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. D. Brown, Cow Lees, Westwell.

* AUGUST 14.—**Wordsley.**—SCHOOL.—The Staffordshire Education Committee invite tenders for a new Council School at Wordsley, near Stourbridge. See advertisement in this issue for further particulars.

AUGUST 16.—**Aberdare.**—VILLAS.—Erection of two semi-detached villas at Abernant-road, Aberdare. Plans, etc., may be seen at office of Mr. T. Roderick, architect, Clifton-street, Aberdare.

AUGUST 16.—**Blackwood.**—HOUSES.—Erection of sixteen semi-detached houses for the Tyishaf Building Club, Blackwood. Plans, etc., may be seen at the Forresters' Arms, Blackwood.

AUGUST 16. — **Durham.** — SCHOOL.—For a girls' school at St. Hild's College, Durham. Plans may be seen, and particulars obtained, at the offices of Messrs Joseph Potts & Son, architects and surveyors, Sunderland. Quantities on payment of 1*l.* 1*s.*

AUGUST 16.—**Onllwyn.**—ALTERATIONS, ETC.—Alterations and additions to the Halfway House, Onllwyn, near Neath, for Mrs. Elizabeth Phillips. Plans, etc., may be seen at the Halfway House and with Mr. W. T. Davies Ystradgynlais.

AUGUST 16. — **Pontypool.**—HOUSES.—For erection of four houses at Park-road, Pontypool, for Mr. Edgar Probyn, C.C. Plans, etc., may be seen at the office of Mr. D. J. Lougher, Bank-chambers, Pontypool.

AUGUST 16.—**Sheffield.** — OFFICES. — The Health Committee of the City Council invite tenders for the erection of additional offices, mess-room, and retaining wall at Lumley-street Destructor. Particulars, etc., may be obtained, and conditions of contract inspected, at the office of the City Engineer and Surveyor, Town Hall, Sheffield, on payment of the sum of 1*l.* 1*s.* Applications to be endorsed "Offices, Lumley-street Destructor."

AUGUST 17.—**Blackrock.**—HOUSES.—The U.D.C. of Blackrock invite tenders for the erection of houses for the working classes and other work in connexion with same at Brookfield, Blackrock Co. Dublin. Plans, etc., can be seen at the Town Clerk's office, Town Hall, Blackrock. Quantities have been prepared, and copies of same can be obtained on application to the Town Clerk at a charge of 1*l.* 1*s.*

AUGUST 20.—**Ton Pentre.**—HOUSE.—Erection and completion of a minister's house at Canning-street extension, Ton Pentre, for the Trustees of Jerusalem Calvinistic Methodist Chapel, Ton. Plans, etc., may be seen at office of Mr. W. D. Morgan, M.S.A., architect, 194, Ystrad-road, Pentre, Rhondda.

AUGUST 21.—**Barrow-in-Furness.**—STONEWORK.—The Corporation invite tenders for the restoration of the stonework of the Town Hall Buildings. Bills of quantities may be obtained on application at the Borough Engineer's Office, Town Hall.

AUGUST 21.—**Colchester.**—PROPOSED NEW TECHNICAL INSTITUTE FOR COLCHESTER.—Colchester District Higher Education Committee invite tenders for the erection of the new technical institute at Colchester. Names to Mr. H. A. Cheers, Twickenham, London. A charge of 5*l.* will be made for a copy of the bill of quantities.

AUGUST 21. — **Eccles.** — SCHOOL. — For a new secondary and technical school to be erected at Park-road, Monton, for the Eccles Education Committee. Plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 10, Ribblesdale-place, Preston. Deposit of 3*l.*

AUGUST 21.—**Edinburgh.**—POST-OFFICE EXTENSION. —The Commissioners of H.M. Works and Public Buildings invite tenders for the Edinburgh General Post-office extension, fourth contract, for alterations and the addition of one story to the existing building. Drawings, etc., and forms of contract may be seen on application at His Majesty's Office of Works, Edinburgh. Bills of quantities and forms of tender may be obtained at the above address on payment of 1*l.* 1*s.*

AUGUST 21. — **Pontywaun.**—SCHOOL.—Monmouthshire Education Committee invite tenders for extensions and alterations to the Pontywaun County Secondary School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. R. L. Roberts, architect, Abercarn, on payment of a deposit of 2*l.* 2*s.*

* AUGUST 21.—**Stafford.**—SCHOOL.—The Staffordshire Education Committee invite tenders for new Council School in Tenter Banks, Stafford. See advertisement in this issue for further particulars.

AUGUST 26.—**Luton.**—CONCRETE FLOORS, ETC.—The T.C. invite schemes and tenders for reinforced concrete floors, and a circular dome in connexion with the new Public Library. Drawings, etc., may be seen, and full particulars obtained, at the Borough Engineer's Office, Town Hall, Luton.

* AUGUST 27.—**Keighley.**—ENLARGEMENT OF POST-OFFICE.—The Commissioners of H.M. Works, etc., invite tenders for enlargement of Head Post-office at Keighley. See advertisement in this issue for further particulars.

AUGUST 30.—**Newport, Isle of Wight.**—FOUNDATIONS.—The Corporation invite tenders for the construction of foundations for the new suction gas engine to be supplied to the Waterworks, Carisbrooke, I.W. Plans, etc., may be seen, and forms of tender obtained, at office of Mr. T. Ross Pratt, Town Clerk, 19, Quay-street, Newport, I.W.

* AUGUST 31.—**London.**—RECRUITING DEPOT.—The Commissioners of H.M. Works and Public Buildings are prepared to receive tenders for the erection of the Central London Recruiting Depôt, Old Scotland-yard. See advertisement in this issue for further particulars.

* SEPTEMBER 2.—**West Ham.**—RECEIVING HOMES.—The Guardians of the West Ham Union invite tenders for the erection of receiving homes for children on a site facing the Aldersbrook-road, Wanstead. See advertisement in this issue for further particulars.

* SEPTEMBER 4.—**Exeter.**—UNIVERSITY COLLEGE EXTENSION BUILDING.—The Exeter Education Authority are prepared to receive tenders for the erection of a University College Extension Building and Day Training College, according to plans, etc., prepared by Messrs. Tait & Harvey, architects, Bampfylde House, Exeter. See advertisement in this issue for further particulars.

* SEPTEMBER 6.—**Crediton.**—SCHOOL.—The Hayward Education Authority invite tenders for a new Secondary School for Girls at Crediton. See advertisement in this issue for further particulars.

NO DATE.—**Castleblaney.**—SCHOOLS.—Erection and completion of new schools, Convent of Mercy, Castleblaney, Co. Monaghan, for the Very Rev. Canon Callan, P.P. Bills of quantities can be obtained from Mr. S. O. Hunter, building surveyor, Scottish Provident-buildings, Belfast, on deposit of 1*l.* 1*s.*

NO DATE.—**Doncaster.**—BARN.—Tenders to erect a Dutch barn, 50 yds. long and 10 yds. wide, either iron or wood. Apply Mr. D. D. Milner, The Grange, Keadby, Doncaster.

NO DATE.—**Keighley.**—CHURCH.—Tenders are required for the erection of St. James's Church, Cross Roads, Keighley. The drawings may be seen, and quantities obtained, at offices of Messrs. J. B. Bailey & Son, 3, Scott-street, Keighley.

ENGINEERING, IRON, AND STEEL.

AUGUST 9.—**Kilpeddar.**—OIL ENGINE.—Rathdrum R.D.C. invite estimates for the erection of an oil engine, sewage pump, and other work, in Kilpeddar, Co. Wicklow, about four miles from Greystones. Specification can be had from Mr. Geo. T. Moore, A.R.C.S.I., M.Inst.C.E.I., Engineer to the Board, 1 and 2, Foster-place, Dublin, on application and lodgment of 1*l.* 1s.

AUGUST 9.—**Royal Leamington Spa.**—PUMPS.—The Corporation of Royal Leamington Spa invite tenders for the construction and erection at one of their pumping stations of a set of deep well pumps (capacity 25,000 gallons per hour), actuated by a gas engine, and for lowering an existing set of pumps. Drawing, etc., may be seen at the office of their Engineer, Mr. W. de Normanville, at the Town Hall, and copies of the specification may be obtained on application.

AUGUST 10.—**Bryncroes.**—BRIDGE WORKS.—Lleyn R.D.C. invite tenders for repairing masonry bridge, known as Pont Ysgoldy Bach, Bryncroes. Plan, etc., may be seen at office of Mr. E. R. Williams, Council School, Bryncroes, or at office of Mr. Henry Williams, Surveyor, Edeyrn.

AUGUST 11.—**Belfast.**—MONOLITH.—The Belfast Harbour Commissioners invite tenders for the construction of a monolith or concrete to carry a stair and timber slide at the rear of the west wall of the new graving dock near Clarence Wharf, and other works, in accordance with drawings, etc., which may be seen at the office of the Harbour Engineer, Mr. W. Redfern Kelly M.Inst.C.E.

AUGUST 11.—**Wembley.**—MACHINERY.—The Wembley U.D.C. invite tenders for the supply and erection of a sludge elevator and fittings at the sewage outfall works. Specification, etc., to be obtained from Mr. Cecil R. W. Chapman, Engineer and Surveyor to the Council, Public Offices, Wembley.

AUGUST 12.—**Glynneath.**—DRIVING A SLANT.—Tenders are invited for driving a slant 200 yds. long, dipping 9 in. per yard; size of heading, 9 ft. by 7 ft. Further particulars on application to Manager, British Rhondda Collieries, Glynneath.

AUGUST 16.—**Cardiff.**—REPAIR OF DREDGER.—The Cardiff Railway Company invite tenders for the repairs to their No. 3 bucket dredger now moored in the Bute West Dock, at the north-east corner. Specifications, etc., may be obtained on application to either Mr. Ree, Chief Engineer to the Cardiff Railway Company, Cardiff, or Capt. E. Hall, 112, Bute-street, Cardiff.

AUGUST 16.—**Yarmouth, I.W.**—PIER REPAIRS.—The Town Trust invite tenders for repairs to their pier, Yarmouth, I.W. Full particulars can be obtained of their Surveyors, Messrs. Newman & Cocks, Ryde.

AUGUST 17.—**Kilkenny.**—LIGHTING, HEATING, ETC.—Lighting, heating, and ventilating the Carnegie Free Library, Kilkenny, as per plan and specifications to be seen at Borough Treasurer's office, City Hall, Kilkenny, or at architects' office, Messrs. E. S. Lowey & Son, 62, Dame-street, Dublin.

AUGUST 21.—**Bury.**—HEATING AND VENTILATING.—The Education Committee invite schemes and tenders for heating and ventilating a new secondary school to be erected in the Borough. Particulars, etc., may be obtained from Mr. Robert Wilkinson, Director of Education, Education Offices, 8, Bank-street, Bury, on payment of a deposit of 1*l.* 1s. Complete plans of the building may be inspected at the offices of Mr. J. Theo. Halliday, A.R.I.B.A., 14, John Dalton-street, Manchester.

AUGUST 21.—**Lymington.**—PLANT.—The Corporation of Lymington invite tenders for installing and maintaining an air lift pumping plant, and executing other works, at the Corporation Water Works at Ampress. Specifications of the works may be obtained from Mr. J. Davis Rawline, Town Clerk, Town Clerk's Office, Lymington, upon receipt of a stamped addressed foolscap envelope.

AUGUST 24.—**Lea Mills, Cromford.**—BRIDGE WORKS.—Derbyshire C.C. invite tenders for the widening of Lea County Bridge, situate at Lea Mills, near Cromford. The drawings, etc., may be seen, and schedule of works, etc., obtained, at the office of the County Surveyor, St. Mary's Gate, Derby.

AUGUST 28.—**North Walsham.**—OIL ENGINE.—The U.D.C. invite tenders for the supplying, delivering, and fixing ready for work at the North Walsham Waterworks Station, with a twelve months' guarantee, of a 16-h.p. oil engine. Mr. J. S. Empson, Clerk to the Council, North Walsham.

AUGUST 31.—**East Preston.**—BOILERS.—The Guardians invite tenders for the removal of one vertical steam boiler and for the supply and erection of one new vertical multitubular boiler, together with all necessary builder's work, at the Workhouse, East Preston, Sussex (near Angmering Station, L.B. & S.C.R.). A copy of the specification, etc., may be had from Mr. Arthur Shelley, Clerk to the Guardians, Littlehampton, on payment of a fee of 2*l.* 2s.

No DATE.—**Bolton.**—BOREHOLE.—The Maco Spinning Company, Ltd., Bolton, require tenders for a borehole, 14 in. diameter, about 270 ft. deep, with necessary pump and tubes, to raise about 10,000 gallons per hour.

MISCELLANEOUS.

AUGUST 9.—**Cumberland Infirmary, Carlisle.**—FURNISHING OF NURSES' HOME, ETC.—The Committee desire tenders for the above. Lists may be obtained from the Secretary at the Infirmary, where samples of furniture and materials may be seen.

AUGUST 9.—**Petersfield.**—STEAM ROLLER.—Tenders are invited for the hire of steam roller, with or without scarifier. For particulars apply to Mr. A. J. C. Mackarness, Clerk to the Council, 16, High-street, Petersfield.

AUGUST 12.—**Wigan.**—FURNITURE.—The Guardians of the Wigan Union invite tenders for furniture, etc., required for the new Workhouse Infirmary at Billinge, near Wigan. Forms of tender can be obtained from Mr. H. Gordon Ackerley, Clerk, 9, Victoria-buildings, King-street, Wigan, and samples of articles required can be seen at the Union Workhouse, Frog-lane, Wigan.

✱ AUGUST 13.—**Wolverhampton.**—RESTORATION OF STONEWORK.—The Wolverhampton Public Works Committee invite tenders for restoration and preservation of the decayed stonework at the Art Gallery and School of Art, off Lichfield-street, Wolverhampton. See advertisement in this issue for further particulars.

AUGUST 14.—**Horsham.**—STEAM ROLLER.—Horsham R.D.C. invite tenders for hire of steam roller, with scarifier. Further particulars and forms of tender may be obtained of Mr. Wm. Dengate, Surveyor, 58, Park-street, Horsham.

AUGUST 18.—**London.**—BATTERY SINKS.—The Commissioners of His Majesty's Works and Public Buildings invite tenders for the supply of battery sinks and mud troughs (leadless glaze only). Particulars of the samples and estimated quantities required and a copy of the conditions, etc., may be had on application to the Board's Architect, Mr. Rutherford, 17, Delahay-street, S.W.

PAINTING, etc.

✱ AUGUST 10.—**London.**—CLEANING AND PAINTING.—The Directors of the Midland Railway Company invite tenders for cleaning and painting works to rental property in the London district. See advertisement in this issue for further particulars.

AUGUST 11.—**Nottingham.**—PAINTING, ETC.—The Watch Committee invite tenders for the following:—(1) Internal cleaning and painting at various sub-police-stations; (2) external cleaning and painting at Leen-side Police-station, Fire-station, cottages, etc. Specifications, etc., may be obtained from Mr. Frank B. Lewis, City Architect, Guildhall, on payment of a deposit of 1*l.* 1s. on each contract.

AUGUST 12.—**Dewsbury.**—PAINTING.—The Guardians invite tenders for cleaning and painting their offices and premises at Wellington-street, Dewsbury. Specifications can be seen, and particulars obtained, on application to Mr. Joseph Peace, Clerk to the Guardians, Union Offices, Wellington-street, Dewsbury.

AUGUST 12.—**Northwich.**—PAINTING.—The Guardians of the Northwich Union invite tenders for the painting of the whole of the exterior portion of the Workhouse and premises, together with the five cottages adjoining; also for the painting of the interior of the Board-room. Copy specifications and forms of tender may be had on application to Mr. E. Pritchard, Master of the Workhouse, Northwich.

AUGUST 13.—**Hull.**—PAINTING.—Tenders are invited for painting the various properties belonging to Hull Charterhouse Estate. Particulars can be obtained at office of Mr. John Watson, Surveyor to the Charterhouse Trustees, Cogan-chambers, Hull.

AUGUST 14.—**Macclesfield.**—PAINTING.—The Gas Committee invite tenders for painting tower scrubbers and condensers at their works. Information on application to Mr. W. Newbigging, Engineer at the works.

AUGUST 16.—**Huddersfield.**—PAINTING, ETC., AT CROSLAND MOOR WORKHOUSE.—Tenders are invited for the painting, colouring, etc., required at the Crosland Moor Workhouse of the above Union. Specifications may be obtained at office of Mr. E. A. Rigby, Clerk to the Guardians, Union Offices, Ramsden-street, Huddersfield.

✱ AUGUST 18.—**London.**—PAINTING, ETC.—The Guardians of St. Leonard Shoreditch invite tenders for painting, repairs to guttering, pointing of brickwork, etc., at their Workhouse and Infirmary. See advertisement in this issue for further particulars.

No DATE.—**Maidstone.**—CLEANING, ETC.—The Education Committee invite tenders for the cleaning and renovation of certain public Elementary Schools. Further particulars may be obtained from the Secretary, Education Offices, Maidstone.

ROADS, SANITARY, AND WATER WORKS.

AUGUST 9.—**Hartley.**—SEWER.—The Tynemouth R.D.C. invite tenders for the providing and laying of about 750 lin. yds. 21-in. pipe sewer near Hartley Station, and about 300 lin. yds. 9-in. pipe sewer near Seaton Delaval Station and at Avenue Head. Plans, etc., may be seen at the office of Mr. A. S. Dinning, 21, Ellison-place, Newcastle-on-Tyne.

AUGUST 9.—**Leeds.**—PAVING, ETC.—The Highways Committee invite tenders for the paving and flagging of private streets. Drawings may be seen at the City Engineer's Office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

AUGUST 10.—**Gosforth.**—TAR MACADAM.—Gosforth U.D.C. invite tenders for widening a portion of Station-road, forming footway, and erecting wood fencing, etc. All particulars may be obtained from Mr. Geo. Nelson, A.M.Inst.C.E., Engineer and Surveyor to the Council, Council Chambers, High-street.

AUGUST 10.—**Gosforth.**—TAR MACADAM.—Gosforth U.D.C. invite tenders for laying tar macadam, etc., in Woodbine-road. All particulars may be obtained from Mr. Geo. Nelson, A.M.Inst.C.E., Engineer and Surveyor to the Council, Council Chambers, High-street.

AUGUST 10.—**Horsforth.**—SEWAGE WORKS.—Horsforth U.D.C. invite tenders for the carrying out of works in connexion with the sewage disposal of the district. Drawings may be seen, and specification, etc., may be obtained, on application to Mr. Robert R. Jones, M.Inst.C.M.E., Engineer to the Council, Council Offices, Horsforth, on payment of the sum of 3*l.* 3s.

AUGUST 10.—**Lanchester.**—SEWAGE WORKS.—For alterations, etc., to the Cornsay Colliery Sewage Disposal Works, for the R.D.C. Plans may be seen by arrangement, and quantities will be sent on application to the Surveyor, Mr. J. R. Lupton, Lanchester.

AUGUST 11.—**Bigby.**—MAKING-UP.—Making-up of a roadway, etc., at Bentley Farm, Bigby. Plans, etc., may be seen at office of Mr. W. H. Buttrick, P.A.S.I., surveyor, Scunthorpe.

AUGUST 11.—**River Yeo.**—TWO WEIRS.—The Somersetshire Drainage Commissioners invite tenders for the construction of two weirs in the River Yeo, one at "New Close," about a quarter of a mile above Pill Bridge, and the other at "Hammocks," about one and a quarter miles below Long Load Bridge. Drawings, etc., may be seen, by appointment, at the address of Mr. Wm. Lunn, Engineer to the Somersetshire Drainage Commissioners, 61, Wembdon-road, Bridgwater.

AUGUST 11.—**Rochdale.**—SEWERING.—The Paving, etc., Committee invite tenders for the sewering of Crimble-street. Further particulars may be had from the Borough Surveyor.

AUGUST 12.—**Abercynon.**—ROADS.—Construction of roads at Abercynon for Mr. Edward Jenkins. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect, Treharris.

AUGUST 12.—**Longton.**—SEWERS.—The T.C. of the Borough of Longton invite tenders for the construction of about 790 lin. yds. of 12-in. pipe sewer, with manholes, etc., in Stone-road. Drawings, etc., may be seen at any time, and quantities and forms of tender may be obtained from Mr. J. W. Wardle, C.E., Borough Surveyor, Court House, Longton.

AUGUST 12.—**Selby.**—CLEANING DRAINS.—Cleansing and siding of the drains for the year commencing September 2, 1909. The drains will be let in two sections:—No. 1, Selby Dam and all drains south of the Bishopdyke; No. 2, Bishopdyke and all drains north thereof. Specifications can be seen, and forms of tender procured, at the Commissioners' Office, Abbey-yard, Selby.

✱ AUGUST 14.—**Barnet.**—SANITARY.—The Governors of Queen Elizabeth's Grammar School for Boys, Barnet, Herts, invite tenders for converting earth closets into water-closets. See advertisement in this issue for further particulars.

AUGUST 14.—**Haltwhistle.**—WATER WORKS.—The R.D.C. invite tenders for the supply and laying of over three miles of 3-in. cast-iron water mains, with valves, hydrants, pillar wells, etc.; the construction of a covered service reservoir, the erection of a pumping station, and works connected therewith, for the water supply of Gilsland and Longbyre. Plans may be seen, and quantities, etc., obtained, on application to the Engineer, Mr. J. E. Parker, A.M.Inst.C.E., Post-office-chambers, Newcastle-on-Tyne, or to Mr. Thomas Dryden, Clerk to the R.D.C., Council Offices, Haltwhistle, on depositing cheque value 1*l.* 1s.

AUGUST 16.—**Camborne.**—MAINS.—The Camborne Waterworks Company, Camborne, Cornwall, invite tenders for the laying of mains, provision of valves, construction of valve chambers, etc., in accordance with the plan, etc., prepared by the Engineers of the Works. Plans may be seen, and copies of the specification, etc., obtained, at the offices of the company between the hours of 10 a.m. and 4 p.m. on deposit of 1*l.* 1s.

AUGUST 16.—**Stevenage.**—WATER SUPPLY.—Stevenage U.D.C. invite tenders for the construction of a brick and concrete covered service reservoir of 300,000 gallons capacity, and valve chambers, with inlet, outlet, and washout pipes and valves, at the Waterworks, near Stevenage. Drawing, etc., prepared by Messrs. W. R. & W. Phillips, civil engineers, of Luton, and forms of tender may be seen at office of Mr. Wm. Onslow Times, Clerk to the Council, U.D.C. Offices, Stevenage, Hertfordshire. Copies of bills of quantities, etc., can be obtained on payment of 1*l.* 1s.

AUGUST 16.—**Upper Pontnewydd.**—RESERVOIR WORKS.—The U.D.C. of Llanfrechfa Upper invite tenders for certain alterations, additions, and repairs to their Upper Cwmbran Reservoir, near Upper Pontnewydd, Monmouthshire, in accordance with drawings, etc., which may be seen at the offices of Messrs. Kirby, Son, & Co., engineers, Stow-chambers, Newport, Mon. Bills of quantities, etc., will be supplied by the engineers on payment of 2*l.* 2s.

AUGUST 18.—**Swinton.**—SINKING AND BORING.—The Swinton U.D.C. invite tenders for sinking a pit 4 ft. 6 in. diameter, 36 ft. deep, and boring 9 in. diameter 134 ft., or thereabouts, to the bottom of the Woolley Edge Rock, and other works, in a field adjoining Piccadilly-road. Specification, etc., may be obtained from Mr. Robert Fowler, C.E., Engineer and Surveyor, Council Offices, Swinton, near Rotherham, upon payment of a deposit of 10s.

AUGUST 18.—**Yoker Drainage District.**—SEWER.—The First or Upper District Committee of the County of Renfrew invite offers for the construction of an intercepting sewer in the above district. Drawings may be seen at the office of Messrs. W. R. Copland & Sons, C.E., 146, West Regent-street, and a copy of the specification, etc., may be obtained from them on payment of a fee of 1*l.* 1s.

AUGUST 20.—**Coity Cross and Glyn Neath.**—ROAD WORKS.—Glamorgan C.C. invite tenders for the following works, viz.:—(1) Widening and improving the Bridgend and Bryncethin main road between Coity Cross and Bryncethin Common; (2) widening and improving the Neath and Pontwalby main road at Glyn Neath between the Lamb and Flag Inn and the Crown Inn. Plans, etc., may be seen, and copies of the bills of quantities obtained, for Work No. 1 at the County Surveyor's Offices, Bridgend, and for Work No. 2 at the Police-station, Glyn Neath, and for both works at offices of Mr. T. Mansel Franklen, Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street Cardiff.

AUGUST 23.—**Sunbury-on-Thames.**—MAKING-UP.—The U.D.C. invite tenders for making-up Sunmead-road, Sunbury. Plans, etc., may be seen, and estimate of quantities, etc., obtained, upon application to Mr. Harold F. Coales, Surveyor to the Council, at the Council Offices, Sunbury.

AUGUST 25.—**Chester.**—ROAD WORKS.—Tenders are required for the making of 1,000 yds. of road, 9 ft. wide, on the Tarvin Estate, near Chester. Plans, etc., may be seen at office of the County Land Agent, County Estate Office, 49, Northgate-street, Chester.

AUGUST 25.—**South Normanton.**—CULVERT.—The Blackwell R.D.C. invite tenders for taking up an old brick culvert and building a new one of concrete tubes at South Normanton. Full particulars may be obtained from the Council's Surveyor, Mr. H. Silcock, 67, Westgate, Mansfield, upon application in writing.

AUGUST 26.—**Luton.**—IMPROVEMENTS.—Private im-

Digitized by Google

provement in Kenilworth-road, Hampton-road, West Hill-road, and part of Ivy-road, for the T.C. Plans, etc., prepared by the Borough Engineer, may be seen at his office, Town Hall, Luton.

AUGUST 31.—**Manchester.**—THIRLMERE AQUEDUCT: THIRD LINE OF PIPES.—CONTRACT B.—The Waterworks Committee invite tenders for the laying and jointing of the middle section of the third line of pipes from Thirlmere to Manchester. Plans, etc., may be seen, and printed specification, etc., obtained, at the offices of Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, on receipt of cheque for 5*l.* 5s.

SEPTEMBER 2.—**Northallerton.**—SEWAGE DISPOSAL.—The U.D.C. of Northallerton invite tenders for about 2,500 yds. of 15-in. stoneware pipe outfall sewer and effluent drain, together with the construction of liquefying and storm-water tanks, bacteria beds, engine-house, pump well, etc. Drawings, etc., may be seen, and bills of quantities obtained, at the offices of the engineers, Messrs. Willcox & Raikes, 63, Temple-row, Birmingham, up to August 18, and at the Council's Office, Northallerton, from August 19 to September 2, on payment of a deposit of 5*l.* 5s.

STONES, MATERIAL, AND STORES.

AUGUST 11.—**Dewsbury.**—STORES.—The Gas Committee invite tenders for the supply of gas works and general stores. Particulars and forms of tender may be obtained on application to the Gas Engineer, Mr. Geo. Wm. Fligg, Gasworks, Savile Town, Dewsbury.

AUGUST 11.—**Hindley.**—GRANITE SETTS.—The U.D.C. of Hindley invite tenders for the supply of about 200 tons of granite setts delivered at Hindley. Specification, etc., may be obtained on application to the Surveyor, Mr. Oswald P. Abbott, Council Offices, Hindley.

AUGUST 12. — **London.** — RAILS, ETC. — Board of Directors of the Burma Railways Company, Ltd., invite tenders for the supply of:—(*a*) 633 tons steel rails, 50 lb. per yard, and 1,413 tons steel fishplates; (*b*) dog spikes; (*c*) galvanised steel and iron work for roofing. For each specification a fee of 1*l.* will be charged, which will not be returned. Mr. W. Home, Managing Director.

AUGUST 16. — **Brighton.**—FLINTS.—Brighton B.C. invite tenders for the supply of 5,000 cubic yds. of land flints for highways. The specification, etc., may be obtained on application at the office of the Borough Surveyor, at the Town Hall, Brighton.

AUGUST 26. — **Grays Thurrock.**—MACADAM.—The Grays Thurrock U.D.C. invite tenders for the supply and delivery to the Town Wharf, Grays, of 500 tons of 1½-in. granite or basalt macadam, and 100 tons of ½-in. chippings of the same material. Form to be obtained, with specification, from the Council's Surveyor, at his office, High-street, Grays.

AUGUST 31. — **Rochester.** — ANNUAL CONTRACTS. — The Corporation invite tenders for the supply of materials, etc.; also for a period of three years for the cartage and disposal of nightsoil. Copies of specifications, etc., can be obtained on application to Mr. William Banks, A.M.Inst.C.E., City Surveyor, Guildhall, Rochester.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*ARCHITECTURAL ASSISTANT	Singapore, Sts. Set., Mupality.	See advertisement in this issue	Aug. 10
*CLERK OF THE WORKS	Glamorgan C.C. Educa. Com.	2*l.* 5s. per week	Aug. 12

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
*STOCK, PLANT, AND MACHINERY OF BLDR. AND CONTR., HORSHAM—On the Premises	H. W. Smith	Aug. 11
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	do.
*CONTRACTOR'S PLT., MACHINERY AND STK., N. KENSINGTON, W.—On the Premises	Fuller, Horsey, Sons, & Cassell	Aug. 25
*BLDR. AND CONTRACTOR'S PLT. AND MACHINERY, BELVEDERE-RD.—On the Premises	Fuller, Horsey, Sons, & Cassell	Sept. 14

RECENT SALES.—*Continued from page* 167.

By C. M. STANFORD (at Colchester).

Bures St. Mary, Suffolk. — Allens Farm, 44 a. 1 r. 18 p., f. £710

July 26.—By DAWSON, SON, & TERRY.

Hammersmith.—King-st., c.g.r. 120*l.*, reversion in 46 and 58 yrs. (¼ share) 700

By DIXON & Co.

Sutton.—1 to 4, Distillery-cottages, u.t. 61 yrs., g.r. 8*l.* 13s., w.r. 70*l.* 4s. 350

Carshalton.—3, Bedford-villas, f., y.r. 25*l.* 190

Leyton.—131, 133, and 135, Grove Green-rd., u.t. 76 yrs., g.r. 15*l.*, w.r. 91*l.* 18s. 455

Holloway.—110, Carleton-rd., u.t. 43 yrs., g.r. 7*l.* 17s. 6d., y.r. 75*l.* 410

Wandsworth.—26, Swaffield-rd., u.t. 76 yrs., g.r. 5*l.*, w.r. 38*l.* 16s. 200

By ELLIOTT, SON, & BOYTON.

West Kensington.—Barton-st., f.g. rents 30*l.*, reversion in 77¾ yrs. 695

St. John's Wood.—Boundary-rd., l.g.r. 12*l.* 12s., u.t. 28 yrs., g.r. 1*l.* 135

By MARTIN, WHITE, & Co.

Bethnal Green.—76 and 78, Bacon-st., area 5,000 ft., f. 820

Du wich.—40, Darrell-rd., u.t. 54 yrs., g.r. 4*l.* 10s., w.r. 28*l.* 12s. 160

By MULLETT, BOOKER, & Co.

Paddington.—6, Southwick-pl., u.t. 25¼ yrs., g.r. 4*l.*, p. 500

By ST. QUINTIN, SON, & STANLEY.

City.—5, Tower Dock, area 675 ft., f., e.r. 60*l.* 700

By TOWERS, ELLIS, & Co.

Bayswater.—25, Sutherland-pl., u.t. 37 yrs., g.r. 8*l.* 8s., y.r. 50*l.* 290

July 27.—By BUNCH & DUKE.

Clapton.—18, Newick-rd., u.t. 80 yrs., g.r. 6*l.* 10s., e.r. 45*l.* 420

By DEBENHAM, TEWSON, RICHARDSON, & Co.

Dulwich.—Pellatt-rd., f.g. rents 250*l.*, reversion in 57 to 70 yrs. 5,690

Acton.—Colville-rd., f.g. rents 50*l.*, reversion in 55 yrs. 935

By DRIVER, JONAS, & Co.

Bayswater.—Inverness-ter., f.g. rents 55*l.*, reversion in 45 yrs. 1,625

By LETHABY & LETHABY.

Haggerston.—73 to 91 (odd), Boston-st., u.t. 16½ yrs., g.r. 70*l.*, w.r. 223*l.* 255

By ERNEST OWERS.

Hampstead.—7, Narcissus-rd., f., e.r. 38*l.* 400

By THURGOOD & MARTIN.

Westminster.—12, Dacre-st, area 3,790 ft., f. .. 5,000

Fulham.—Lintaine-gr., f.g. rents 22*l.* 10s., reversion in 68 yrs. 495

Lillie-rd., f.g. rents 50*l.* 16s., reversion in 68 yrs. 1,000

Pyrford, Surrey.—Old house and 10 a. 0 r. 8 p., f. 2,700

Enclosures of arable and woodland, 29 a. 3 r. 19 p., f. 1,150

Townslow Meadow, 36¼ acres, f. 900

Send, Surrey.—Enclosures of pasture and arable land, 14 a. 2 r. 15 p., f. 710

Arable, pasture, and woodland, 14 a. 2 r. 0 p., f. 710

Scotchers Mead and two cottages, 27 a. 3 r. 39 p., f. £1,000

Worplesdon, Surrey.—Plimms-row-cottages and 41 a. 2 r. 18 p., f. 1,490

Stoke-next-Guildford, Surrey.—Part of Slyfield Farm, 19 a. 1 r. 33 p., f. 1,200

Stoke Mill Mead, 8 a. 3 r. 36 p., f. 400

Joseph's-rd., enclosure of building land, 2 r. 3 p., f. 410

Stoke Park Farm, 145 a. 0 r. 38 p., f. 7,500

By FREDERICK WARMAN.

Highbury.—15, Grange-rd., u.t. 27 yrs., g.r. 9*l.* 9s., e.r. 55*l.* 325

Harringay.—32, Kimberley-gdns., u.t. 80 yrs., g.r. 6*l.* 6s., e.r. 30*l.* 260

By DREWEATT & WATSON (at Newbury).

Shaw-Cum-Donnington, Berks.—House and carpenters shop, f. 600

Kiln-rd., two cottages and blacksmiths shop, f. 600

By WALLER & KING (at Southampton).

Shirley, Hants.—Clarence Lodge and 1 a. 3 r. 18 p., f. 2,500

July 27.—By H. & R. L. COBB (at Chatham).

Chatham.—Fair-row, Sir Colin Campbell p.h., f. 8, 10, and 18, Fair-row, f. 1,200

By WINCH & SONS (at Ashford).

Appledore, Kent.—Court Lodge Garden, 3 r. 15 p., f. 100

Box House, f. 300

Poplar House and 6 a. 2 r. 30 p., f. 610

Barn Field, 2 a. 1 r. 27 p., f. 135

Tenterden, Kent.—Two cottages and enclosures, 7 a. 0 r. 37 p., f. 385

July 28.—By DAVID BURNETT, SON, & BADDELEY.

Folkestone.—46, Upper Sandgate-rd., u.t. 35 yrs., g.r. 10*l.* 3,500

By DYER, SON, & HILTON.

Greenwich.—Annandale-rd, f.g. rents 40*l.* 0s. 6d., reversion in 55 yrs. 960

Ashburnham-gr., l.g. rents 12*l.* 2s., u.t. 37½ yrs., g.r. 8*l.* 170

By FIELD, SONS, & GLASIER.

Blackheath.—56, Kidbrook Park-rd., u.t. 55½ yrs., g.r. 15*l.*, y.r. 90*l.* 500

Peckham.—21, Willowbrook-rd., and Willowbrook Arms b.h., u.t. 13½ yrs., g.r. 6*l.*, y.r. 60*l.* 12s. 255

By HAMPTON & SONS.

New Oxford-street.—No. 78 (business premises), u.t. 16½ yrs., g.r. 156*l.*, p. 4,000

Hyde park.—47, Hyde Park-gate, f., p. 4,250

By MATTHEWS, MATTHEWS, & GOODMAN.

Camden Town.—177, Camden-rd., l.g.r. 15*l.*, u.t. 33 yrs., g.r. nil 210

By RUSHWORTH & BROWN.

St. Giles.—18, Little St. Andrew-st. (s.), f., y.r. 60*l.* 1,060

Forest Gate.—188 and 190, Odessa-rd., f., p. 435

By ROBERT TIDEY & SON.

Shoreditch.—122 to 132 (even), Weymouth-ter., f., w.r. 215*l.* 1,600

Marylebone.—Lyons-pl., l.g.r. 42*l.*, u.t. 12 yrs., g.r. nil 225

De Beauvoir Town.—De Beauvoir-rd., l.g. rents 10*l.*, u.t. 62 yrs., g.r. 2s., with reversion £290

Downham-rd., l.g. rents 18*l.* 12s., u.t. 63 yrs., g.r. 2*l.* 14s., with reversion 480

Hoxton.—39, Fairbank-st., u.t. 38 yrs., g.r. 6*l.* 10s., w.r. 75*l.* 8s. 210

By WALFORD & WILSHIN.

Anerley.—63, Croydon-rd., u.t. 53½ yrs., g.r. 35*l.*, p. 105

By H. & R. L. COBB (at Watton).

Carbrooke, Norfolk.—Arable and pasture land, 65 acres, f. 1,470

By WRIGHT & SCRUBY (at Cambridge).

Chesterton, Cambs.—The Manor and King Hedges Farms, 362 a. 2 r. 10 p., f. 15,400

By WALLER & KING (at Southampton).

Southampton.—67, Alma-rd., f., p. 500

July 29.—By CHESTERTON & SONS.

Peckham.—Tilson-rd., f.g. rents 92*l.*, reversion in 53 yrs. 2,130

Islington.—149, Upper-st. (s.), f., y.r. 100*l.* 1,480

Chelsea.—31, Moore-st., u.t. 33 yrs., g.r. 8*l.*, y.r. 60*l.* 630

By C. W. DAVIES & SON.

Islington.—5, 7, and 9, Prebend-st., u.t. 68 yrs., g.r. 25*l.*, w.r. 117*l.* 300

Clerkenwell.—24, Percy-circus, u.t. 23 yrs., g.r. 6*l.*, e.r. 65*l.* 290

By LEOPOLD FARMER & SONS.

Wimbledon.—10, Leopold-rd., f., y.r. 75*l.* 690

By C. C. & T. MOORE.

Limehouse.—12, 13, and 14, Pelling-st., f., w.r. 98*l.* 16s. 700

Old Ford. — 96 and 98, Usher-rd., f., w.r. 67*l.* 12s. 500

By BISLEY & SONS.

Deptford.—45 and 47, Windmill-la., u.t. 35½ yrs., g.r. 6*l.*, w.r. 61*l.* 2s. 340

63, Cornbury-rd., u.t. 66 yrs., g.r. 4*l.* 10s., w.r. 32*l.* 10s. 145

By BOWDITCH & GRANT.

Croydon.—237, 239, and 241, Brighton-rd., f., w.r. 55*l.* 18s. 735

Peckham.—Denman-rd., f.g. rents 31*l.* 10s., reversion in 62 yrs. 770

East Sheen.—Upper Richmond-rd., f.g. rents 25*l.* 10s., reversion in 60 yrs. 680

Mortlake.—King's-rd., f.g. rents 104*l.* 10s., reversion in 60 yrs. 2,478

By H. J. BLISS & SONS.

Bethnal Green.—Fuller-st., f.g. rents 50*l.* 8s., reversion in 9½ yrs. 1,510

15, 17, and 19, James-st., f., w.r. 70*l.* 4s. 400

Lambeth.—5, Heyford-av., u.t. 78 yrs., g.r. 8*l.* 10s., w.r. 62*l.* 8s. 320

Chiswick.—14, Balfern-gr., u.t. 86 yrs., g.r. 5*l.* 10s., w.r. 44*l.* 4s. 300

Plaistow.—25 and 27, Perth-rd., f., w.r. 44*l.* 4s. .. 355

By NEWBON, SHEPHARD, & EDWARDS.

Hackney.—Amhurst-rd., l.g. rents 66*l.* 14s., u.t. 55½ yrs., g.r. 7d. 1,120

Battersea.—Bridge-rd., f.g.r. 17*l.*, reversion in 39 yrs. 430

Stoke Newington.—Philip-st., f.g.r. 29*l.* 8s., reversion in 38 yrs. 560

Digitized by Google

Hampstead.—Adamson-rd., l.g. rents 20*l.*, u.t. 69 yrs., g.r. 4*l.*	£280
Chalcot-gdns., l.g. rents 20*l.*, u.t. 55 yrs., g.r. 4*l.*	270
Camden Town.—35, Cantlowes-rd., u.t. 52 yrs., g.r. 8*l.*, y.r. 46*l.*	260 225
10, Clifton-rd., u.t. 41 yrs., g.r. 7*l.* 4s., p.	
Stroud Green.—7, Osborne-rd., u.t. 59 yrs., g.r. 6*l.* 6s., y.r. 42*l.*	310 280
2, Lorne-rd., u.t. 52 yrs., g.r. 6*l.* 10s., y.r. 40*l.*	305
4, Lorne-rd., u.t. 58 yrs., g.r. 6*l.* 6s., e.r. 40*l.*	280
28, Lorne-rd., u.t. 59 yrs., g.r. 6*l.* 10s., e.r. 42*l.*	
By ROBINS, GORE, & MERCER.	
Rotherhithe.—6 and 8, St. Helena-rd., u.t. 47½ yrs., g.r. 6*l.*, w.r. 93*l.* 12s.	380
Hyde Park.—4, Frederick-mews, u.t. 10 yrs., g.r. 6*l.*, y.r. 34*l.*	140
St. Giles.—2, Great St. Andrew-st. (s.), u.t. 17½ yrs., g.r. 45*l.*, w.r. 105*l.* 6s.	160
By STIMSON & SON.	
South Kensington.—125 and 127, Gloucester-rd. (Hereford Arms p.h.) 58 and 60, Clareville-gr., profit rental of 160*l.* for 10 yrs	900
84 to 92 (even), Earl's Court-rd. (Pembroke Arms p.h., etc.), profit rental of 142*l.* for 12½ yrs	780
Old Kent-road.—1 to 19 (odd), Victory-pl., u.t. 36½ yrs., g.r. 50*l.*, w.r. 260*l.*	435
Brockley.—120, Howson-rd., u.t. 74½ yrs., g.r. 1*l.* 10s., y.r. 28*l.*	305 200
80, Malpas-rd., u.t. 55½ yrs., g.r. 4*l.*, w.r. 39*l.*	
Dulwich.—21 and 23, Croxted-rd., u.t. 35 yrs., g.r. 10*l.* 10s., y.r. 78*l.*	450 310
Anerley.—43, Samos-rd., f., e.r. 45*l.*	
By WEATHERALL & GREEN.	
Leytonstone.—9, 11, 15, 17, and 19, Lytton-rd., f., y.r. 114*l.*	1,215 3,166
Littleton, Middx.—Avenue Farm, 54 acres, f.	
By SAMUEL WOOLRAUCH.	
Ilford.—100 to 110 (even), Parkhust-rd., f., w.r. 101*l.* 18s.	600
Bromley, Kent.—29 to 32, Great Elms-rd., u.t. 74 yrs., g.r. 20*l.* 10s., y.r. 108*l.*	370
Gray's Inn-road.—34, Frederick-st., u.t. 13 yrs., g.r. 6*l.*, p.	175
Dalston.—57, Sandringham-rd., u.t. 57 yrs., g.r. 7*l.* 10s., y.r. 45*l.*	265
July 30.—By HULBERT & HAYSMAN.	
Stockwell.—101, Loughborough-park, u.t. 13½ yrs., g.r. 5*l.* 10s. 6d., e.r. 46*l.*	123
96, Osborne-ter., u.t. 19 yrs., g.r. 7*l.* 10s., e.r. 45*l.*	110

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 4 6	" at railway depôt
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks, 6 in sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks, 6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" " "
20×10 first quality "	13 0 0	" " "
20×12 " "	13 15 0	" " "
16×8 " "	7 5 0	" " "
22×10 best blue Portmadoc	12 12 6	" " "
16×8 " "	6 12 6	" " "
20×10 best Eureka unfading green	15 17 6	" " "
20×12 " "	18 7 6	" " "
18×10 " "	13 5 0	" " "
16×8 " "	10 5 0	" " "
20×10 permanent green	11 12 6	" " "
18×10 " "	9 12 6	" " "
16×8 " "	6 12 6	" " "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000, at rly. depôt.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards—1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	... 4 15 0

WOOD (*continued*).

JOINERS' WOOD.	At per standard. £ s. d.	£ s. d.
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg—First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 0 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
Battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	... 0 3 9
Small " "	0 2 6	... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¾ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	... 0 1 0
Selected, Figury, per ft. super. as inch	0 1	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak per load	17 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4	... 0 5 0

Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	... 0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	... 0 18 0
1½ in. by 7 in. yellow, planed and matched	0 16 0	... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	... 0 15 0
1½ in. by 7 in. white, planed and matched	0 15 0	... 0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	... 0 13 6
1 in. by 7 in. " "	0 14 0	... 0 18 0
¾ in. by 7 in. white " "	0 10 0	... 0 11 6
1 in. by 7 in. " "	0 12 9	... 0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	... 7 10 0
Compound Girders, ordinary sections	9 0 0	... 10 0 0
Steel Compound Stanchions	11 0 0	... 12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	... 10 0 0
Flitch Plates	9 0 0	... 9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	... 8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—Common Bars	8 10 0	... 9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	... 9 5 0
Staffordshire "Marked Bars"	10 10 0	... —
Mild Steel Bars	8 15 0	... 9 5 0
Hoop Iron, basis price	9 5 0	... 9 10 0
" " Galvanised	17 0 0	... —
(*And upwards, according to size and gauge.)		
Sheet Iron, Black—Ordinary sizes to 20 g.	9 15 0	... —
" " 24 g.	10 15 0	... —
" " 26 g.	12 5 0	... —
Sheet Iron, Galvanised, flat, ordinary quality—Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	... —
Ordinary sizes to 22 g. and 24 g.	15 10 0	... —
" " 26 g.	18 10 0	... —
Sheet Iron, Galvanised, flat, best quality—Ordinary sizes to 20 g.	18 0 0	... —
" " 22 g. and 24 g.	18 10 0	... —
" " 26 g.	20 0 0	... —
Galvanised Corrugated Sheets—Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	... —
" " 22 g. and 24 g.	14 15 0	... —
" " 26 g.	16 5 0	... —
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	... —
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	... —
" " " 26 g.	15 0 0	... —
Cut Nails, 3 in. to 6 in. (Under 3 in., usual trade extras.)	10 10 0	... 11 0 0

LEAD, &c.	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up.	16 0 0	... —
Pipe in coils	16 10 0	... —
Soil pipe	18 10 0	... —
Compo pipe	19 10 0	... —
ZINC—Sheet—Vielle Montagne	26 10 0	... —
Silesian	26 5 0	... —

Digitized by Google

LEAD, &c. (*continued*).

		£ s. d.		£ s. d.
COPPER—				
Strong sheet	per lb.	0 1 0	...	—
Thin "	"	0 1 1	...	—
Copper nails	"	0 0 10	...	—
Copper wire	"	0 0 10	...	—
BRASS—				
Strong Sheet	"	0 0 11	...	—
Thin	"	0 1 0	...	—
TIN—English Ingots	"	0 1 5	...	—
SOLDER—Plumbers'	"	0 0 7	...	—
Tinmen's	"	0 0 9½	...	—
Blowpipe	"	0 1 0	...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4½d. " "
Flute Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
⅛ "	2½d. " "
¼ "	2½d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 2
" " ,, in barrels	"	0 2 3
" " ,, in drums	"	0 2 6
Boiled ,, ,, in barrels	"	0 2 6
" " ,, in drums	"	0 2 9
Turpentine in barrels	"	0 2 11
" in drums	"	0 3 1
Genuine Ground English White Lead	per ton	20 10 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERAYRON.—For erecting a new chemical laboratory and manual workshop at Intermediate School, for the Governors. Mr. G. Dickens-Lewis, architect, 49, North-parade, Aberystwyth:—

M. Davies	£945 0	W. Edwards, Fatod, Aberayron*	£748 18
Edwards Bros.	815 0		
R. & H. L. Owen	789 0		

BERKELEY.—For proposed new Council school, for Gloucestershire Education Committee. Mr. R. S. Phillips, Architect, Midland Bank Chambers, Gloucester:—

—	Estimate No. 1. Main Building.	Estimate No. 2. Cookery Centre.	Total.
	£ s. d.	£ s. d.	£ s. d.
J. Coats	4,874 14 4	724 10 8	5,599 5 0
King & Sons	3,539 0 0	514 0 0	4,053 0 0
E. Love	3,340 0 0	509 0 0	3,849 0 0
J. H. Gurney	3,226 0 0	463 0 0	3,689 0 0
A. S. Cooke	3,193 6 3	492 9 1	3,685 15 0
Collins & Godfrey	3,159 0 0	473 0 0	3,632 0 0
E. Walters & Son	3,155 0 0	467 0 0	3,622 0 0
P. C. Cousins	3,100 0 0	479 10 0	3,579 10 0
W. Jones	3,100 0 0	460 0 0	3,560 0 0
A. J. Colborne	3,095 10 0	464 0 0	3,559 10 0
Orchard & Pier	3,046 0 0	454 0 0	3,500 0 0
W. T. Nicholls	3,070 0 0	427 0 0	3,497 0 0
Bloodworth & Son	3,058 0 0	436 0 0	3,494 0 0
Byard & Son	2,984 0 0	450 0 0	3,434 0 0
H. Dorse	2,950 0 0	470 0 0	3,420 0 0
Dimery & Sons	2,937 16 0	435 8 0	3,373 4 0
W. Crane	2,897 0 0	443 6 10	3,340 6 10
C. Griffiths	2,880 0 0	435 0 0	3,315 0 0
Adams & Jefferies, Bristol*	2,590 0 0	448 0 0	3,038 0 0

BRIGHTON.—For the supply of glazed drain pipes, for the Corporation:—

—	Per cent. below Schedule Prices. 4-in. and 6-in.	9-in.	12-in. to 18-in.
Young & Son, London*	64	64	64
W. C. Candy	65	62½	57½
J. H. Turner & Lisney	63¾	63¾	(a) 62½ (b) 60
Hall & Co., Croydon, Ltd.	62½	62½	60
Ellistown Collieries	61½	61½	(a) 61½ (b) 55
Barton Cement and Plaster Co.	60	60	(a) 60 (b) 57½
Sutton & Co.	55	55	55
Doulton & Co., Ltd.	55	55	55
Albion Clay Co., Ltd.	55	55	55
Sharp, Jones, & Co.	55	55	55
Donington Sanitary Pipe and Fire Brick Co., Ltd.	55	55	55
J. Woodward, Ltd.	55	55	55
H. R. Mansfield	55	55	55
G. Skey & Co., Ltd.	55	55	55
J. Knowles & Co. (Wooden Box), Ltd.	55	55	55
T. Wragg & Sons, Ltd.	55	55	55
Leeds Fireclay Co., Ltd.	55	55	55
Stanley Bros., Ltd.	55	55	55
G. Jennings	55	55	55
J. Oakes & Co.	55	55	(a) 55 (b) 52½

2½ per cent. off net account.

2½ per cent. off monthly account.

2½ per cent. off monthly account.

and 2½ per cent. off monthly account.

BARKING TOWN.—For private street works at Devon and Sparsholt roads, for the Urban District Council. Mr. C. F. Dawson, Surveyor, Public Offices, Barking:—

	Devon-road.	Sparsholt-road.
Pothick Bros., Ltd.	£475 0 0	£1,178 0 0
G. J. Anderson	398 4 6	973 3 2
Parsons & Parsons	385 9 5	944 14 10
Wilson, Border, & Co.	380 5 11	933 15 3
W. Wilson	380 0 0	920 0 0
E. & E. Iles	368 0 0	906 5 0
B.W. Glenny, Oatlands, Romford*	366 4 11	869 14 3

BOOTLE.—For water works extension, for the Rural District Council of Bootle:—

Contract No. 1. *For Supply and Delivery of Cast-Iron Pipes and other Castings.*

D. Y. Stewart & Co.	£665 5 4
Cochrane & Co.	622 17 6
Whittle & Sons	602 15 0
Cockrane & Co.	602 9 4
Stanton Iron Works Co., Ltd.‡	592 12 6
Birtley Iron Works Co., Ltd.§	591 3 0
A. J. Cloake	575 1 6
Clay Cross Co.	570 13 2
Staveley Iron Works Co.‡	566 16 7
Heathcote & Sons	558 13 9
Staveley Coal and Iron Co., Ltd., near Chesterfield*	553 16 0
G. W. Watson & Co.	552 3 6
Sheepbridge Coal and Iron Co.	551 5 10
British Mannesman Tube Co., Ltd.	—

‡ Per Wilkinson, of Whitehaven. § And extras £14 or £15.

Contract No. 2. *For the Supply and Delivery of Meters, Sluice Valves, Air Valves, Hydrants, and Other Fittings.*

G. W. Lees & Sons	£132 16 3
Guest & Chrimes	78 0 5
Glenfield & Kennedy	75 13 7
Ham, Baker, & Co.	74 6 8
Leeds Meter Co.	66 12 0
Bird & Co., Ltd.	66 6 4
Blakeborough & Sons, Brighouse*	60 3 4

Contract No. 3. *Excavating Trenches, Laying and Jointing Cast-Iron Water Mains, Construction of Meter Chambers, the Fixing of Valves, Hydrants, and Sundry Attendant Works.*

F. Mitchell & Sons	£518 12 0	J. Jackson	£381 11 3
J. Garner	515 19 6	F. & W. Dirkin	352 2 8
C. Bushby	441 10 0	J. Dawson, Whitehaven*	311 14 9
W. Bradley	383 2 0	J. Steele	233 7 3

CHELMSFORD.—For laying a sewer in Burgess Well-road and extending sewer in Rainsford-road, for the Town Council. Mr. Cuthbert Brown, A.M.Inst.C.E., Borough Surveyor. Quantities by Borough Surveyor:—

H. Potter & Son	£288 0 0
J. Jackson	266 7 1
Wilson, Border, & Co., Vine-street, Romford*	265 6 4

CONGLETON.—For alterations and additions to Mossley School, for School Managers. Mr. C. Russell Hall, architect, Chapel-street, Congleton. Quantities by architect:—

Bennett Bros.	£1,250 0	W. Worrall & Co.	£808 0
E. & A. Frith	1,010 0	T. Brown, Congleton*	805 5
A. J. & G. Worrall	894 18		
T. & E. Cooke	860 0		

CROES YNYD.—For new isolation hospital at Croes Ynyd, near Conway, for Conway Joint Hospital Board. Mr. T. B. Farrington, architect, Trinity-square, Llandudno. Quantities by Mr. W. F. Gregory, Post Office-chambers, Colwyn Bay:—

E. Jones & Son	£12,373 0 0
W. Thornton & Sons	12,350 9 7
E. Thorpe & Sons	12,098 6 6
E. Owen	11,989 10 0
H. Martin, Ltd.	11,814 0 0
F. S. Huxley	11,765 0 0
H. Smith	11,628 0 0
J. Dallon & Son	11,595 0 0
R. L. Roberts	11,533 16 6
C. Griffiths	10 710 2 6
H. Hughes	10,379 15 5
D. Jones, Son, & Roberts, Conway*	9,942 6 11

CRICKLADE AND SWINDON.—For work to be done in the internal and external renovations to *Cricklade*, Old Swindon, and New Swindon police-stations, for the Standing Joint Committee of the Wilts County Council. Mr. J. G. Powell, County Architect and Surveyor, County Offices, Trowbridge:—

—	New Swindon.	Old Swindon.	Cricklade.
	£ s. d.	£ s. d.	£ s. d.
F. G. Norman	35 0 0	230 0 0	—
Tydeman Bros., Swindon	37 18 0*	246 14 4*	28 14 0*
W. Wallis	40 0 0	227 10 0	—
Hope Bros.	48 17 3	304 0 0	—
F. Finn	51 1 6	—	—
A. Sainsbury	51 1 6	—	—
E. Preece	52 10 0	310 0 0	35 0 0
A. King	56 0 0	—	—
Spackman Bros.	57 7 5	—	—
Tumley	59 10 6	—	—
W. Hill	60 4 0	397 7 11	38 1 0
Osmond & Son	62 1 6	—	—
W. Robbins	71 14 0	—	29 0 0
Tarrant	76 17 2	376 2 11	42 1 6
Little Bros.	—	—	31 16 6

CATFORD.—For 200 yds. of iron fencing at Culverley-road, for Lewisham Borough Council. Mr. Ernest van Putten, Borough Surveyor:—

F. Morton, jun., & Co., 110, Cannon-street, E.C.* 5s. 3d. per yd. for railings, £3 17 6 for gate.

DERI (near Bridgend).—For erecting an entrance porch and new boundary walls, etc., at the Mission Church. Mr. D. M. Davies architect, 38, Cardiff-road, Caerphilly:—

E. T. Davies	£221 12 0	D. Williams, Deri*	£181 6 10
Davies & Evans	208 13 6		
Vodden & Lee	197 0 0		

DRIGG (Cumberland).—For erecting a dwelling house, for Mr. J. Kitchin. Mr. J. S. Stout, architect, 36, Lowther-street, Whitehaven. Quantities by architect:—

Builder: A. & T. Anderson, Catherine-street, Whitehaven*	£279 19 0
Joiner: J. Steel, Workington*	145 15 6
Slater and Plasterer: M. T. Gilbeck, Gosforth (Cumb.)*	103 12 2
Plumber: W. Strathem, Whitehaven*	62 18 9
Painter: E. McConn, Whitehaven*	24 6 11

EAST HAM.—For renovation of Municipal Offices, Council Chamber, etc., at corner of High-street South, and Barking-road, for the Corporation. Mr. A. H. Campbell, M.Inst.C.E., Borough Engineer, Town Hall, East Ham:—

J. Stokes & Son*	£359 15 4

GAINSBOROUGH.—For a new heating apparatus, for St. John the Divine Church:—

A. Grindrod & Co.	£349 0 0	J. Keith & Blackman Co., Ltd.	£245 0 0
Newton, Chambers, & Co.	329 0 0	Mackintosh & Sons	243 10 0
Medow Foundry Co., Ltd.	327 10 0	Pearce & Sons	240 0 0
Mellows & Co., Ltd.	317 0 0	Ginson & Co.	233 10 0
Goodacre, Glover, & Butler, Ltd.	310 8 0	Longbottom & Co.	225 0 0
Heating & Engineering Co.	304 0 0	Truswell & Sons	222 7 6
J. Collis	300 0 0	F. Milan & Co.	220 0 0
G. F. Wells	297 0 0	W. G. Smith & Co.	218 0 0
Leeds Marble Co.	292 4 7	Seaward & Co.	212 15 0
Tilley Bros.	280 0 0	W. E. Henton & Co.	212 7 0
W. J. Fox	275 0 0	Ashworth & Sons	207 0 0
Boulton & Paul, Ltd.	266 0 0	G. H. Robinson	195 0 0
B. Parker, Ltd.	262 0 0	Rosser & Russell, Ltd.	193 0 0
J. S. Ackroyd	260 0 0	Kettle & Son	179 18 0
J. Cook & Son	252 14 0	Richardson & Co., Darlington*	179 10 0
Baines Bros.	250 0 0	Denning & Cook	174 15 0
Dalgue, Griffiths, & Co.	249 15 0	T. T. Smith & Co.	164 10 0
		W. F. Spencer	163 0 0
		A. Richardson	154 0 0

Digitized by Google

GRANTHAM.—For erecting a girls' secondary school, for Kesteven County Council Education Committee. Mr. H. H. Dunn, A.R.I.B.A., Silver-street, Lincoln :—

—	School Building.	Cottage.	Levelling.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Walker Bros.	8,025 13 0	513 0 0	827 0 0	9,365 13 0
Halkes Bros.	7,360 13 1	502 5 8	503 2 2	8,366 0 6
Fox	7,180 0 0	439 0 0	380 0 0	7,999 0 0
Parker & Son	7,349 0 0	420 0 0	220 0 0	7,989 0 0
Wright & Son	7,148 0 0	399 0 0	267 0 0	7,814 0 0
Hedley	6,699 0 0	570 0 0	297 0 0	7,566 0 0
Hockley & Co.	6,430 16 9	414 17 5	575 0 0	7,420 14 2
Cracknell	6,571 0 0	434 0 0	392 0 0	7,397 0 0
Rudd & Son	6,600 0 0	400 0 0	350 0 0	7,350 0 0
Maxey & Son	6,400 0 0	350 0 0	514 0 0	7,264 0 0
Read	6,625 0 0	373 0 0	258 0 0	7,256 0 0
Faulks	6,310 0 0	340 0 0	345 0 0	6,995 0 0
Moss & Sons	6,300 0 0	383 0 0	286 0 0	6,969 0 0
Wainer	6,190 0 0	360 0 0	310 0 0	6,860 0 0
Bosworth & Lowe	6,138 0 0	345 0 0	296 15 0	6,779 15 0
Corah & Son, Loughborough*	6 184 15 0	356 10 0	236 8 0	*6,777 13 0

GORLESTON.—For erecting a Primitive Methodist church, Nile-road, Gorleston-on-Sea. Mr. Arthur S. Hewitt, A.R.I.B.A., Bank-chambers, Great Yarmouth :—

Bricklayer, Slater, Mason, and Plasterer.

B. G. Beech, Great Yarmouth* £623 6 4

Carpenter, Joiner, Plumber, Glazier, and Painter.

Goffin & Co., Great Yarmouth* £450 12 6

Low-Pressure Hot-water Heating.

The Great Yarmouth Ironworks and Foundry Co., Ltd., Great Yarmouth* £69 10 0

Electric Lighting.

F. Wade, Great Yarmouth* £19 10 0

GRAYS.—For repairs to Quarry-hill, Bridge-road, and Arthur-street schools, for the Essex Education Committee. Mr. Christopher Shiner, A.R.I.B.A., Architect and Surveyor, Adelphi, London, and at Grays :—

G. Brown	£142 10 0
Brown Bros.	138 0 0
H. J. Carter, Grays*	70 0 0

GRAYS.—For alterations to classrooms at Grays Quarry-hill schools, for the Essex Education Committee. Mr. C. M. Shiner, A.R.I.B.A., 10, John-street, Adelphi, W.C., and Gate House, Grays, Essex :—

Tarring Playground.

H. J. Carter	£182 0 0	....	—	
Pavitt & Son	165 0 0	....	£50	0 0
G. Brown	142 10 0	....	52	0 0
Brown Bros.*	132 0 0	....	42	0 0

GUILDFORD.—For repairs and additions to schools, for the Town Council. Mr. C. G. Mason, Borough Surveyor, Tun's-gate, Guildford :—

Various Small Repairs at Several Schools.

A. E. Pollard, Mill Mead, Guildford £62

Alterations, etc., at Sandfield Schools.

W. Bullen, Commercial-road, Guildford .. £109

Alterations and Repairs at Charlotteville Schools.

T. Carn, Foxenden-road, Guildford £529

Alterations and Repairs at Stoughton Schools.

T. Swayne & Son, Stoke-road, Guildford .. £266

HALE.—For heating, ventilating, electric lighting, and wiring Altrincham New Higher Elementary School, Queen's-road, for the Committee :—

Heating: T. H. Higson, 12, South King-street, Manchester*	£195 0 0
Ventilating: T. H. Higson*	94 15 0
Electric Lighting: J. Swainson & Son, 22, Booth-street, Manchester*	295 5 0

HARROGATE.—For additions and alterations to the United Methodist Church and Schools. Mr. W. Hugill Dinsley, architect, Chorley, Lancs. Quantities by architect :—

Masons: J. Simpson & Sons, Harrogate*	£695 0 0
Joiner: J. W. Rudd, Harrogate*	260 0 0
Plumber: C. Foster, Harrogate*	118 0 0
Plasterers: A. Calverley & Sons, Harrogate*	115 10 2
Slater: J. Shepherd, Harrogate*	51 0 0

HARROW-ON-THE-HILL.—For sewage disposal and works, for the Urban District Council. Mr. J. Percy Bennett, C.E., Surveyor, Council Offices, Harrow-on-the-Hill :—

	Sewerage.	Sewage Disposal.
T. Adams	£3,088	.... £2,267
J. Batchelor	—	 1,830
Bell & Sons	3,117	 1,991
Bower Bros.	2,825	 2,056
Brebner & Co.	3,155	 2,181
A. B. Champniss	3,283	 2,274
Cunliffe & Co., Ltd.	—	 1,973
Davies, Ball & Co.	2,983	 2,094
Edwards & Co.	3,053	 2,001
F. Egan	3,178	 2,058
A. E. Farr, Frinton-on-Sea*	3,100	.... 1,758*
Free & Sons	3,876	.... —
W. & C. French	3,011	 1,909
E. Iles, jun.	3,289	 2,190
W. Iles	2,950	 2,050
W. J. Jackson	2,891	.... —
Moran & Son	3,162	 2,137
Muirhead & Co.	3,153	 1,927
T. H. Pedrette	3,707	 2,248
J. Simmons	—	 2,093
T. Watson, Southall*	2,640*	 1,978
Wickstead & Beardsell	2,903	.... —
Wills & Powis	3,120	.... —
W. Wilson	3,528	.... —
Wilson, Border, & Co.	2,926	 1,989
Wimpey & Co.	3,140	 1,965
Dean & Perkins	3,516	.... —

HULL.—For 500 yds. of pale fence, 6 ft. high, at electricity works, for the Corporation. Mr. H. Bell, City Electrical Engineer, Hull :—

W. Robinson, 1, Melrose-street, Hull‡ .. £122 0 0

‡ Accepted subject to inquiries proving satisfactory.

HOMERTON.—For additional accommodation for male staff at the Eastern Fever Hospital, Homerton-grove, for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.Inst.C.E., Engineer-in-Chief :—

W. Silk & Son	£2,713 0 0
Gathercole Bros.	2,682 4 1
Welbking & Co., Ltd.	2,590 0 0
J. C. Richards & Co.	2,499 0 0
W. Pattinson & Sons, Ltd.	2,324 0 0
R. Woollaston & Co.	2,300 0 0
L. Kazak	2,291 0 0
W. Lawrence & Son	2,288 0 0
F. & A. Willmott	2,287 0 0
B. E. Nightingale	2 265 10 0
W. J. Fryer & Co.	2,264 0 0
W. Shurmur & Sons, Ltd.	2,232 0 0
F. Webster & Son	2,199 0 0
F. & G. Foster	2,110 0 0
Pasterfield & English, 58, Sunnyhill-road, Streatham*	2,058 0 0

KINGSTON.—For Kingston skating rink, Penrhyn-road. Mr. Alfred Mason, architect and surveyor, Broughton-chambers, Victoria-road, Surbiton :—

T. Watt	£4,500	Sheffield Bros.	£3,463
Lewis Bros.	3,804	F. Hawkey	3,425
Rice & Sons	3,693	B. E. Nightingale	3,270
Minter	3,589	Collinson & Co.	3,217
McC. Fitt	3,575	Dorey & Co.	3,212
W. Irwin	3,527	Limpus & Sons, Surbiton and Kingston*	3,167
W. Watson	3,479		
Oldridge & Sons	3,463		

LEDBURY.—For reconstruction of workhouse drainage, for the Guardians. Mr. R. G. Gurney, Surveyor, Ledbury. Quantities by Surveyor :—

T. Watson	£330 0 0	J. H. Gurney & Co.	£234 3 4
H. Dorse	321 3 8	W. P. Lewis & Co., Hereford*	212 0 0
G. Hill	238 0 0		
D. Smith	236 18 0		
W. James	236 3 2		

LEWISHAM.—For kerbing, etc., Bexhill-road (part of), Brockley, for the Borough Council. Mr. Ernest van Putten, Borough Surveyor :—

Roadway.

E. W. Webb, Falklands, Crofton Park-road, S.E.* .. £395

Footway.

Apthorpe & Co., Coldhams-lane, Cambridge* ..... 3s. per super yd.

LEWISHAM.—For kerbing, etc., of Sandrock-road (part of), for the Borough Council. Mr. Ernest van Putten, Borough Surveyor :—

Roadway.

Fry Bros., Lion Wharf, Greenwich* £473

Footway.

Apthorpe & Co., Coldhams-lane, Cambridge* ..... 3s. per super yd.

LEYTON.—For electric wiring and fittings for an installation of electric light required at Syborn-street School, now in course of erection, for the Urban District Council Education Committee. Mr. W. Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C. :—

E. E. Beaven	£369 10 0	Fryer & Co.	£250 0 0
Vaughan Engineering Co.	340 0 0	Lund Bros. & Co.	249 4 0
M. Parker	312 0 0	Hodgson & Co.	247 10 0
Alliance Electrical Co., Ltd.	295 0 0	Ryan & Son	245 0 0
Larkins & Co.	279 5 6	Pinchin & Walton	241 18 6
W. Simmons	271 0 0	Russell, Bridger, & Co.	238 4 0
Jackson Bros.	270 19 0	Ewart & Son	232 0 0
Electrical & Motor Co.	263 14 0	Tilley Bros.	231 13 6
J. T. Halsey	259 7 3	Foote & Milne	228 0 0
Headland & Headland	256 0 0	Rowland & Hulton	222 3 5
R. H. & J. Pearson	254 0 0	H. J. Whitehead	215 0 0
D. J. Macdonald	250 15 0	Whitehead Bros.	211 0 0
		Johnson & Phillips	172 6 8

LIVERPOOL.—For washing, preparing, whitewashing, and colouring walls, ceilings, etc., painting, papering, etc., for the Royal Southern Hospital :—

S. J. Waring & Sons	£453 8 6
G. H. Lee & Co., Ltd.	389 15 6
F. Hay, Seel-street*	351 2 6

LONDON.—For cleaning, painting, and redecorating the Town Hall, Commercial-road East, Limehouse, for Stepney Borough Council. Mr. M. W. Jameson, A.M.Inst.C.E., Borough Engineer, Municipal Offices, 15, Great Alie-street, Whitechapel, E. :—

Aldin Bros. & Davies	£583	A. W. Derby	£395
G. Barker	469	Finch & Co.	349
Campbell, Smith, & Co., Ltd.	415	Vigor & Co.	335
Wickstead & Beardsell	414	R. Wollaston & Co., 40, Turner's-road, E.*	296

LONDON.—For the erection of new offices, Blackfriars road, S.E., for the Trustees of the Sons of Temperance (London Grand Division). Mr. Arthur C. Russell, architect, Ilford. Quantities by Messrs. Andrews & Read, 13, Basinghall-street, E.C. :—

H. Knight & Sons	£6,987	Battley, Sons, & Holness	£5,843
I. Dawson	6,907	Higgs & Hill	5,794
J. Ham	6,490	Holloway Bros.	5,750
G. Brittain	6,190	Fairhead & Sons	5,695
Rice & Son	6,171	T. H. Kingerlee & Sons	5,579
Hall, Beddall, & Co.	5,893	J. Marsland & Son*	5,460

[Architect's estimate, £5,400.]

LONDON.—Erection of disinfecting station, residences, etc., at Grosvenor Canal, for the Westminster City Council :—

—	Disinfecting Station.	Residences.	Whole of Work.
	£	£	£
C. F. Kearley, 4, Great Marlborough-street*	4,941	4,980	9,921
Perry & Co. (Bow), Ltd.	4,990	5,280	10,270
Holliday & Greenwood, Ltd.	5,139	5,249	10,279
Spencer, Santo, & Co., Ltd.	5,200	5,250	10,300
Kirk & Randall	5,163	5,302	10,323
Patman & Fotheringham, Ltd.	5,186	5,220	10,406
F. G. Minter	5,358	5,393	10,600
Higgs & Hill, Ltd.	5,288	5,514	10,700
Holloway Bros. (London), Ltd.	5,270	5,500	10,770
Howard & Co.	5,318	5,489	10,807
Hall, Beddall, & Co.	5,350	5,514	10,864
Holland & Hannen	5,400	5,729	11,129
Foster & Dicksee, Ltd.	5,438	5,898	11,223
Bywaters & Sons, Ltd.	5,580	5,697	11,277
Mowlem & Co.	6,141	6,380	12,521

LONDON.—For the repair of six hundred old squeegees, for the Westminster City Council :—

	Each. s. d.		Each. s. d.
Angus & Co.	6 6	Leyland Rubber Co.	6 8
Angus & Co.	7 6	Leyland Rubber Co.	7 8
Bird & Co.	6 11	Middleton Bros.	7 0
Dunlop Rubber Co.	7 11	Pontifex & Co.	6 0
Gibb & Co.*	6 4	Pontifex & Co.	6 2

LONDON.—For the construction of brick sewers in four streets or (b) alternatively for brick sewers in Berkeley-street, Coventry-street, and St. James's-square, and a pipe sewer in King-street, for the Westminster City Council :—

	Tender (a).		Tender (b).
Pedrette & Co.	£4,003 16 8	..	£3,767 18 0
W. Muirhead & Co.	3,903 1 11	..	3,741 5 3
E. & E. Iles	3,552 18 2	..	3,392 3 4
J. A. Ewart	2,685 0 0	..	2,504 0 0
E. Parry & Co.	2,512 0 0	..	2,370 0 0
C. W. Killingback & Co.	2,365 5 1	..	2,249 10 6
J. Mowlem & Co., Ltd.	2,279 0 0	..	2,186 0 0
D. R. Paterson, Ltd.*	2,201 0 0	..	2,057 0 0

LONDON.—Painting work at public conveniences, for the Westminster City Council :—

E. Jenner	£346 4 6	Wright & Son	£229 18 0
Burton Bros.	252 10 0	Love & Co.	206 5 0
T. Coulthard	244 9 6	J. R. Sims*	190 16 0

LONDON.—For cleaning and painting works and repairs at the office of the Metropolitan Asylums Board, for the Board. Mr. W. T. Hatch, M.Inst.C.E., M.I.Mech.E., Engineer to the Board :—

B. E. Nightingale	£360 0 0
Wickstead & Beardsell	355 0 0
G. W. Matthews	353 0 0
Aldin Bros. & Davies	337 0 0
W. A. King	273 0 0
G. H. Gunning & Sons	260 0 0
Bridge, Barrett, & Co., Ltd.	243 10 0
D. T. Bostel & Sons	239 0 0
Vigor & Co.	215 10 0
L. Kazak, 3 and 4, Station-road, Belvedere*	205 0 0
R. Woollaston & Co.	145 0 0

LONDON.—For repairs to slate roofs and chimney-stacks, etc., at the South-Western Fever Hospital, Landor-road, Stockwell, for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.Inst.C.E., Engineer-in-Chief :—

J. Darch	£525 10 0
Welbking & Co., Ltd.	338 0 0
D. T. Bostel & Sons	330 0 0
W. Reason	329 0 0
Turtle & Appleton	289 0 0
E. Wall	265 0 0
Gardner & Hazell	263 0 0
T. Robinson	259 0 0
B. E. Nightingale	231 0 0
L. Kazak	229 0 0
S. Squire	223 11 7
W. A. King, Melbourne Works, Melbourne-square, Brixton*	180 0 0

MACCLESFIELD.—For laying 478 yds. of 9-in. stoneware pipe sewers, etc., at Woodford, and 280 yds. at Poynton, for the Rural District Council. Mr. J. Thorpe, Surveyor, 19, King Edward-street, Macclesfield :—

	Woodford.	Poynton.
W. Bradshaw	£630	.... £116
W. H. Worthington, Ltd.	328	 99
D. Eadie & Co., Ltd.	291	 93
W. Crossland	284	 75
T. Winter	218	 95
Gosling & Stafford, Hazel-grove*	258	 71

MAIDENHEAD.—For additions to the electric light central station, for the Town Council. Mr. Percy Johns, Borough Surveyor, Guildhall, Maidenhead. Quantities by Surveyor :—

F. Bissley	£500 0	C. W. Cox & Sons	£418 0
W. Parth	485 0	W. Creed	394 9
Silver & Sons	459 0		

[All of Maidenhead.]

Digitized by Google

PENYGRAIG.—For new vestry, etc., in Field-street, for the Trustees of Tabor Welsh Congregational Chapel. Mr. R. S. Griffiths, architect and surveyor, Tonypandy:—

W. Spratt	£758 0 0
J. Cox	701 17 0
Waterman & Glade	663 0 0
J. Davies, Tonypandy*	660 0 0

PORTSMOUTH.—For the erection of a teachers' room and a cloakroom at the George-street Council School (Girls' Department), for the Education Committee. Mr. A. H. Bone, Surveyor, Cambridge Junction, Portsmouth:—

J. Durrant	£178 10	H. Jones & Son	£164 0
E. G. Bedford	177 0	F. Corke	160 0
Coltherup & Woods	170 0	J. Crockerell	159 0
J. Tanner	169 0	F. J. Privett*	157 0

[All local firms.]

SOUTHAMPTON.—For reconstructing the draining and the provision of new sanitary fittings at the St. Denys Council School, for the Education Committee:—
Franklin & Son, Portswood, Southampton.. £175

SOUTHAMPTON.—For pulling down and re-erecting latrines and playsheds at the Central District Council School, for the Education Committee:—
Douglas, Portswood Park Southampton.. £842

SPENNYMOOR.—For making of Back Barker-street, for the Urban District Council. Mr. C. R. Spencer, Surveyor, Silver-street, Spennymoor:—

F. Sowerby	£112 0 0
G. Pickering, West Hartlepool*	98 3 0

STANFORD-LE-HOPE.—For the erection of boys' and girls' schools at Stanford-le-Hope, for the Essex Education Committee. Mr. C. M. Shiner, A.R.I.B.A., 10, John-street, Adelphi, W.C., and Gate House, Grays, Essex. Quantities by Mr. G. Silvester, 46, Strand, W.C.:—

	Pitch-pine.		
W. Potter	£7,023 5 0	£65 0 0	£7,088 5 0
T. Bruty	7,050 0 0	31 10 8	7,081 10 8
I. Dobson	6,580 0 0	47 6 0	6,627 6 0
C. Wall, Ltd.	6,500 0 0	47 6 0	6,547 6 0
E. Lawrence & Sons	6,267 0 0	52 0 0	6,319 0 0
Hammond & Miles	6,151 19 6	52 9 6	6,204 9 0
Spencer, Santo, & Co.	5,986 0 0	47 6 0	6,033 6 0
Archer & Sons	5,973 0 0	47 0 0	6,020 0 0
Hammond & Son	5,875 0 0	23 13 0	5,898 13 0
H. J. Carter	5,400 0 0	39 0 0	5,439 0 0
Brown Bros.	5,360 0 0	43 7 0	5,403 7 0
G. Brown, Grays*	5,241 10 0	47 6 0	5,288 16 0

SWANLEY (Kent).—For the erection of two detached villas in High-road, Swanley, Kent, for Mr. J. S. Fortescue. Mr. C. Wisher, architect, Erith, Kent. Quantities supplied by the architect:—

Challenor	£3,245 0	H. E. Smith & Sons	£2,763 0
Hicks & Co.	2,960 0	Elliot & Co., Woolwich*	2,750 0
Bowbottom	2,933 0	Button	2,695 0
Hill Bros.	2,795 10		

[Architect's estimate, £2,800.]

THURLSTONE.—For (1) fence and burr-walling (2) kerbing and channelling; and (3) alterations to entrance to Plumpton, for the Urban District Council. Mr. R. Longden, Surveyor, Thurlestone, near Penistone. Quantities by Surveyor:—

C. Winterbottom	£486 0 0	A. Turner, Thurlstone, near Penistone*	£426 15 4
J. Bentley	448 10 6	S. Bedford & Son	422 19 4
R. Turner	434 6 8	L. Hinchliffe	412 2 4
J. Lee	428 17 4		

TILBURY.—For painting and other work at Chadwell St. Mary Schools, Tilbury, for the Essex Education Committee. Mr. C. M. Shiner, A.R.I.B.A., 10, John-street, Adelphi, and Gate House, Grays, Essex:—

Gray & Co.	£225 5 6	H. J. Carter, Grays*	£130 0 0
Brown Bros.	180 10 0		

TOLWORTH (Surbiton).—For reconstructing the drains, etc., at St. Matthew's Schools, Ewell-road, for Surbiton Urban District Council. Mr. W. Neafield, Sanitary Inspector:—

W. H. Hyde & Co.	£196 6 3	W. Rice & Sons	£138 0
Foster & Sons	179 10 0	R. Scase & Son	132 14
L. Lown	179 10 0	J. H. Allwork	127 0
Bull & Esdaile	166 0 0	W. H. Gaze & Sons	125 0
E. Scase	159 0 0	J. Turner, Surbiton*	118 15
T. Johnson	146 10 0		

TREHAFOD.—For erecting six houses. Mr. Edward Rees, architect and surveyor, Alexandra-chambers, Pontypridd:—
R. Jones, Pontypridd* £1,230
[Only tender sent.]

VERWOOD.—For building a brick bridge at Potterne Ford, for Wimborne and Cranborne Rural District Council. Mr. R. T. S. Seymour, District Surveyor, Wimborne Minster:—

J. Tiller	£290	A. Sims	£205
E. Hodder	237	Tryhorn, Salisbury*	185
R. Elcock	223		

WATFORD.—For erecting new business premises in Pinner-road, for Watford Co-operative Society, Ltd. Mr. C. P. Ayres, architect, 6, The Parade, High-street, Watford. Quantities by architect:—

	Estimate No. 1.	Estimate No. 2‡.
G. & J. Waterman	£1,517	£22 10 0
J. L. Tyler	1,450	35 0 0
C. Eames	1,450	24 12 0
Hyde & Co.	1,419	48 10 0
L. R. Ensor	1,417	15 0 0
W. G. Stone	1,400	47 10 0
G. Wiggs	1,383	30 0 0
Clifford & Gough	1,383	22 11 0
G. Jaggard	1,340	28 0 0
W. & D. Wilkins	1,325	29 0 0
A. E. & C. Saw	1,297	29 14 6
Clark Bros., Watford*	1,187	35 0 0

‡ For vertical damp course.

WEST THURROCK.—For painting and general repairs to schools and master's house, for the Essex Education Committee. Mr. Christopher M. Shiner, A.R.I.B.A., architect and surveyor, Adelphi, London; and at Grays, Essex, and Stanford-le-Hope:—

H. J. Carter	£171 0	J. J. Lawrence	£153 15
Brown Bros.	164 14	Pavitt & Sons	139 10
G. Brown	160 10	J. Aslett, Grays*	129 5

WREXHAM.—For alterations to disinfecting chamber, ambulance shed, dining-room, and larder, at the Joint Fever Hospital, for the Rural District Council. Mr. J. Price Evans, engineer, Argyle-chambers, Wrexham:—

H. A. Jones	£114 10	J. B. Woolley, Wrexham*	£97 10
R. Williams	106 0		

TENDERS FOR SCHOOL, WANDSWORTH.—In reference to the list of tenders for the "Furzedown" Secondary School, Wandsworth, for the London County Council, appearing in our last issue, Messrs. J. & C. Bowyer, Ltd., of Upper Norwood, write to say that upon the figures published they were recommended for acceptance and not Messrs. Holliday & Greenwood, Ltd. "The facts," they write, "are that in an alternative estimate substituting terra-cotta for Portland stone, Messrs. Holliday & Greenwood's, Ltd., tender was found to be lower than ours, and upon these figures their tender in terra-cotta is recommended for acceptance.

"The respective tenders in terra-cotta were as follows:—
J. & C. Bowyer, Ltd. £32,767 0 0
Holliday & Greenwood, Ltd. ..... 32,475 1 8."

As we stated at the end of the list of tenders, the report containing the list was not submitted to the Council at the last meeting, and has yet to be considered.—ED.

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS.
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

Telephone: DALSTON 1388.
OGILVIE & Co.
(Many years connected with W. H. Lascelles & Co., Ltd., of Bunhill-row),
Amhurst Works, DALSTON LANE, N.E.
Experts in High-class Joinery, Alterations, and Decorations.
ESTIMATES SUBMITTED.

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor,
Oakeley-Portmadoc.
BEST WORK ONLY.
"RUSTIC BROWN"
Roofing Tiles a Speciality.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company.
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

ALSO AT DEPTFORD, LIVERPOOL, BRISTOL,

GLASGOW, FALKIRK BELFAST, & DUBLIN.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3471. AUGUST 14, 1909.

Contents.

	PAGE
Orthez and Hagetmau	175
The Earliest English Monumental Brass	177
Notes	178
Changes in Board of Education Syllabuses for Building and Engineering Students	180
The Architectural Association: Fortieth Annual Excursion	180
Engravings of Old London Buildings	181
Competition for Liverpool University Arts Extension Building	183
Cottages near Barnet	184
Lump Plaster (Plaster of Paris), Overburnt Plaster, and Flooring Plaster	184
Legal Column	185
Meetings	186
Illustrations:—	
Sketches with the Architectural Association Excursion	186
The American Institute of Architects	186
Projected New Buildings in the Provinces	188
The London Master Builders' Association	188
Chimney-piece in St. Peter's Hospital, Bristol	189
London and District Borough Councils	190
Competition News	190
Books Received	190
Correspondence:—	
The Budget and Building	190
Re Land Taxes	191
London County Council General Powers Bill	191
Architectural Copyism	192
Methods of Heating, etc.	192
Slating	192
Obituary	192
General Building News	192
Sanitary and Engineering News	193
Miscellaneous	193
List of Competitions, Contracts, etc., Open	195
Some Recent Sales	197
Patents	197
Prices Current	197
Tenders	198

Illustrations.

Sketches with the Architectural Association Excursion. By Mr. W. Curtis Green.

The Tower, Gloucester.

The Cloister, Gloucester.

Grevel House, Chipping Campden; the Corner Cupboard, Winchcombe; and Sketches at Broadway.

Upper Slaughter and Winchcombe.

Illustrations in Text.

	PAGE
Orthez and Hagetmau:—	
Fig. 1. XIVth Century Bridge at Orthez	176
Fig. 2. Crypt of St. Girons, Hagetmau	176
Fig. 3. Capitals from the Crypt of St. Girons, Hagetmau	177
Fig. 4. Plan of Crypt, St. Girons, Hagetmau	177
Engravings of Old London Buildings	182
Cottages near Barnet, Herts, Mr. Rowland Paul, Architect	184
Chimney-piece in St. Peter's Hospital Bristol	189

Orthez and Hagetmau.

THE name of Orthez brings to the Englishman's mind the memory of the Peninsular Campaign and the victory gained by Wellington over Marshall Soult on the hills above the town to the north and north-west. There are other memories of an earlier date, for Froissart, the chronicler, frequented the Court of Gaston Phœbus, held in the castle of which there are still some remains, and celebrated its splendour. The house in which it is said he lived is still shown—known as the Hôtel de la Lune, and lying back from the street down a narrow passage.

The town is about twenty-two miles west-north-west of Pau, lying on the right bank of the Gave de Pau, here a rocky chasm, and united to its suburb on the other side of the river by a bridge (Fig. 1) of four unequal pointed arches of the XIVth century, restored, but still picturesque. In the centre is a tower beneath which the road passes. The guardroom is lighted by a window called "the Priest's window," because the Protestant soldiers under Montgomery, who took the town by assault in 1569, on the very day that the new governor sent by Charles IXth to re-establish Catholicism arrived, forced priests and monks to throw themselves into the river from it. The lordship was acquired from the Viscounts of Dax at the end of the XIIth century by Gaston VIth, Viscount of Béarn, called "the Good." Under Gaston VIIth, called "of Moncade," who built the castle in 1242, it became the favourite residence of the Viscounts, and so remained for more than two centuries. The donjon which remains is known as the "Tour Moncade"; round several of the window openings traces of gratings may be seen, recalling its use as a prison. The well in the courtyard is still in use, and part of the moat and a corresponding portion of the wall with niches and loopholes for defence remains. A good deal of the rest of the plan can be traced, showing that it had three *enceintes*. This castle has a tragic interest as being the place in which Gaston Phœbus killed his son and heir (apparently accidentally), who was imprisoned under suspicion of an attempt to poison his father. Here, too, the governor of Lourdes was executed in consequence of his refusal to hand over the fortress to Gaston.

Jeanne d'Albret established a Calvinist University in the town to reward the people for their attachment to the Reformed faith, in which Theodore de Beza was professor for some time. A portion of the buildings (of the XVIth century) remains. Down by the bridge are many Mediæval and early Renaissance houses, and the road to the castle is lined with those of a slightly later date. The most important perhaps is that said to have been Jeanne d'Albret's, a fine XVIth-century building well preserved externally. The church, commenced at the end of the XIIth century, but mainly of the XIVth and XVth, with a modern spire, is at the side of the market-place. The principal hotel is called the "Grand Hôtel de la Belle Hôtesse," a name given to it by Wellington, who stayed there and was struck with the beauty of his hostess.

A light railway from Orthez to Aire-sur-l'Adour, which runs familiarly along roads and serpentines up the hills, affords an easy means of reaching the little town of Hagetmau, on the road between St. Sever and Orthez. It is a chief town of the *arrondissement* of St. Sever, but is fallen in importance, for it was once the second town of La Chalosse, and possessed a castle of the kings of Navarre, who frequently resided there. It cannot boast the great antiquity which some of its neighbours can, as it owes its origin to the Abbey of St. Girons, the foundation of which has been ascribed to Charlemagne. The patron saint was a companion of St. Sever, and, like him, was martyred about 409, according to tradition, on the site occupied at a later date by the monastery. The Hagetmau tradition is that the greater part of the relics were preserved there till 1569, when they were taken to Bourg-sous-Vic in the Couserans, which thenceforward was known as St. Girons. At that place they say that the skull and some bones were brought there in the Vth century by the companions of the saint, and at St. Eulalie, Bordeaux, were portions said to have been brought there by Charlemagne. The dispute is of little importance, as all the relics vanished at the Revolution.

The abbey at Hagetmau was served by regular Augustinian Canons at first, but was secularised in the XIVth century and destroyed by the Huguenots in 1569. In 1888 the crypt was made known to the French Archæological Congress, which met at Dax in that year, and as a consequence was declared an historical monument. Since that time the church has been cleared away, the XIVth-century ribbed vaulting removed and replaced by a modern imitation of XIth-century work, and a chapel built above it, apparently to serve a fine new hospital which has been erected close by. The XIth century church was destroyed in some way, and on its remains another was built in the XIVth, but the crypt (Fig. 2) is mainly of the earlier date, though the fully developed style and accomplishment of much of the carving point to a delayed completion. Certain of the patterns upon the abaci (Fig. 3)

Digitized by Google

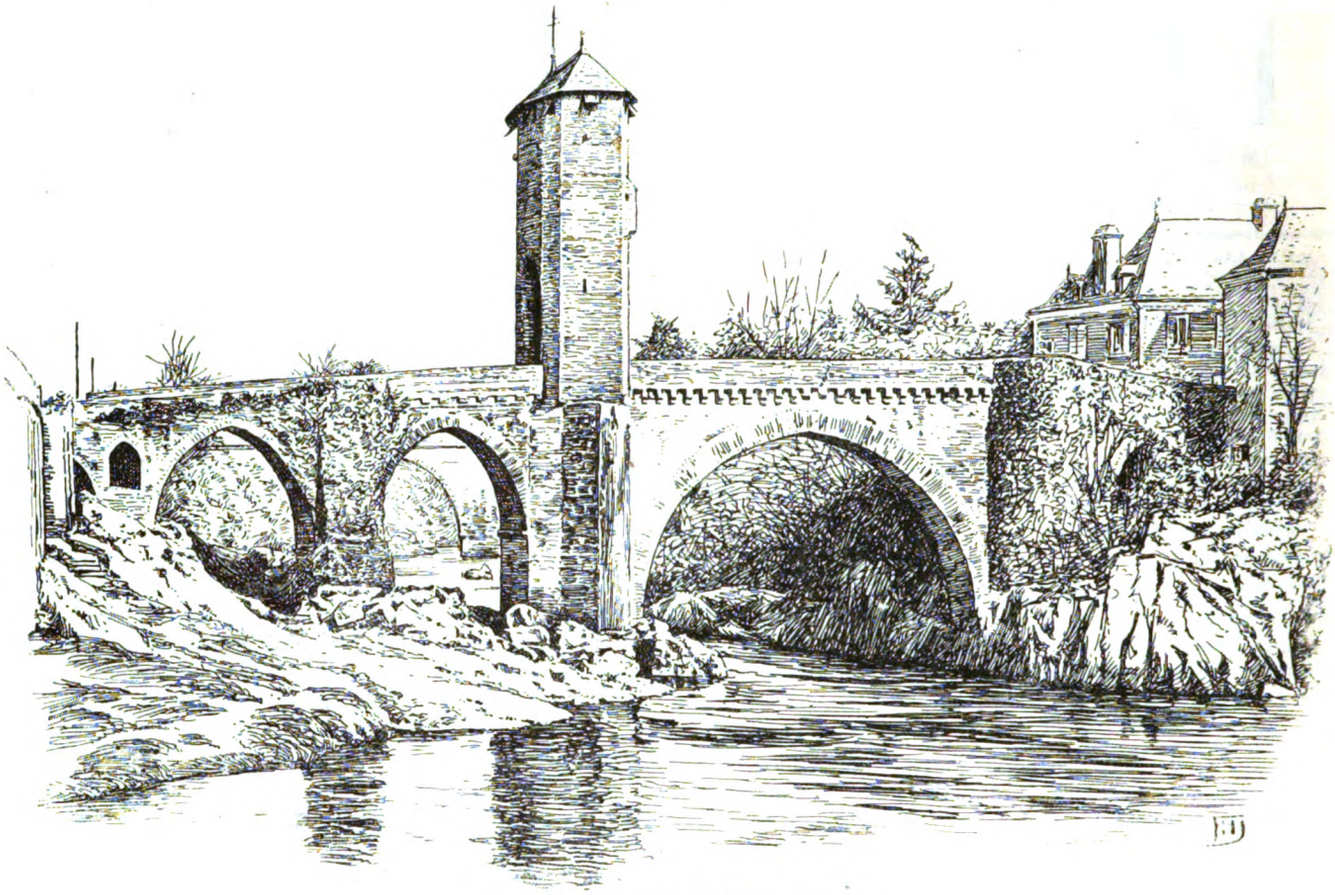


Fig. 1. XIVth Century Bridge at Orthez.

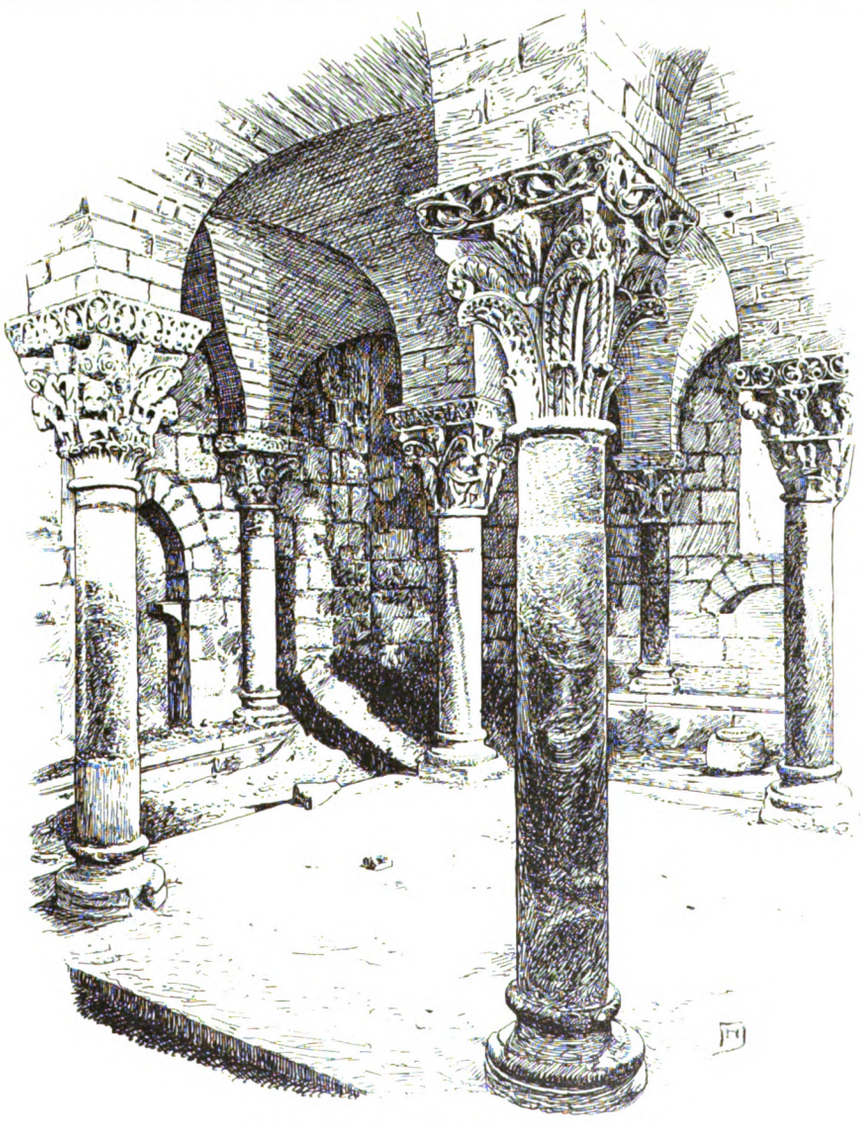


Fig. 2. Crypt of St. Girons, Hagetmau.

closely resemble others met with at Moissac and S. Sernin, Toulouse, and there is also considerable resemblance in the costume and treatment of some of the figures. The lions, monsters, and birds bear an equal likeness in treatment to carving in Roussillon, as at Serrabona, and the fragments of the cloisters of S. Michel de Cuxa and S. Martin de Canigon. The eyes of the figures have pupils of lead.

The plan (Fig. 4) shows the shape and general structure of the crypt. In the centre is a platform, slightly raised above the ground level, upon which the shrine of St. Girons probably stood, since there were holes in the slabs of stone as if for metal clamps or rails, and the four central columns are of grey marble, said to be Campanian, which may be antique and may have been used in the primitive church. But three kilometres away is a place called Jouarbe ("Jovis Arva," the fields of Jupiter?). The columns are of different lengths, made up with another kind of stone; one is in three pieces and another has the remains of a necking worked on the upper end; two of them have circular bases. The engaged columns of the walls are built in courses; their bases have spurs. At the east end is a low arch sunk in the wall, a kind of *arcosolium*, and in the horizontal slab beneath it is a sinking as if for the relics consecrating the altar. Round the walls runs a low stone bench with a simple moulding. There is one pointed niche in the north wall, and the window by it has a lintel with brackets beneath; all the other openings are round-headed, though the western windows (which opened into the church) have the semi-circles cut out of lintels. The walls vary

Digitized by Google

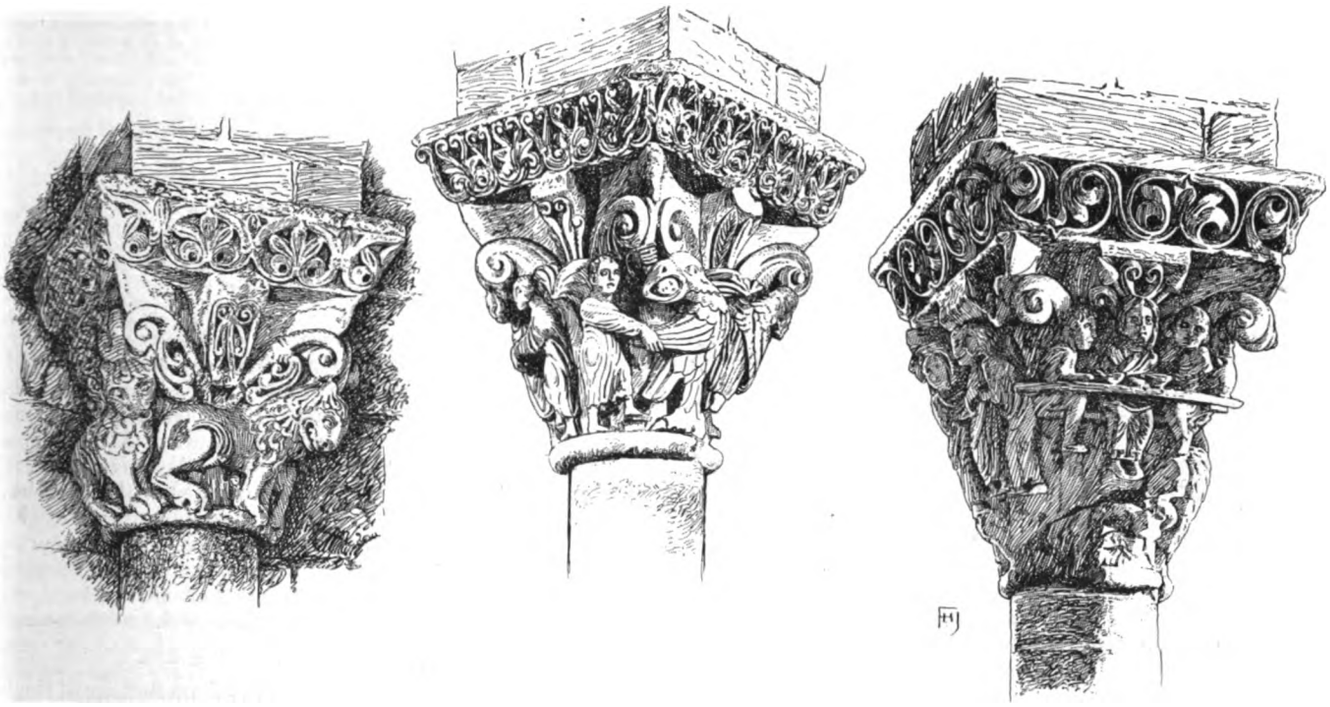


Fig. 3. Capitals from the Crypt of St. Girons, Hagetmau.

from 3 ft. to 4½ ft. in thickness and are buttressed at intervals.

The portions of the walls of the church remaining attached to the crypt show an unmoulded arcading descending to the entrance stairs, attached columns in courses, and a bit of a circular tower through which a barrel vault decreasing in diameter descends, with the base of another contiguous. Several bosses from the XIVth-century vaults lie on the ground, with armorial bearings; one shows an abbot with mitre and crozier; two carved corbels of the same period occupy the western corners. The springing of the vaults is about 11 ft. from the ground. The great central caps are nearly 3 ft. high, and the great interest of the place lies in the fine ornament and splendid carving of the capitals, which are surprisingly little damaged. Several of them have simple foliage, though the abaci are carved with interlacing scrolls, but upon others are lions attacking martyrs, personages holding fantastic birds by their wings, birds with human heads in their claws, griffins holding lions' heads, etc. Two have figure subjects—on one Daniel stands holding an apple with the god Bel as a dragon facing him; on another is the deliverance of St. Peter from prison; the figures placed beneath elaborate Roman porticoes with twisted columns. Under the two first arches is a Roman soldier with sword and shield guarding the prison; under the third is St. Peter chained to the column—he has a nimbus; under the fourth is an angel who cuts the chains with a stroke of a lance.

The whole place has been painted, probably in the XVIIth century, when considerable alterations were made; but there are also signs of fresh experiments in colouring the caps, which one may hope will be abandoned. In many restored Romanesque churches colour has been added in such a manner as to disguise the fine carving and reduce the capitals to the level of the coloured modern religious figures, etc., so common in French churches.

M. Brutails remarked a very curious thing in this church, which probably disappeared with the restoration, viz., that the Romanesque workmen, wishing to simulate joints in voussoirs which were too long, carved them on the surface, broad, with a rising in the middle as if it were the mortar joint. This seems to prove that it was then usual so to finish the wall surface.

THE EARLIEST ENGLISH MONUMENTAL BRASS.

IT is one of the merits of the literary guide-book, which is so prominent among the books of the time, that it tends to produce a greater interest in local history, and to accentuate the value of it as an element in general national history. The village churches, for example, are full of vivid illustration of those facts of common

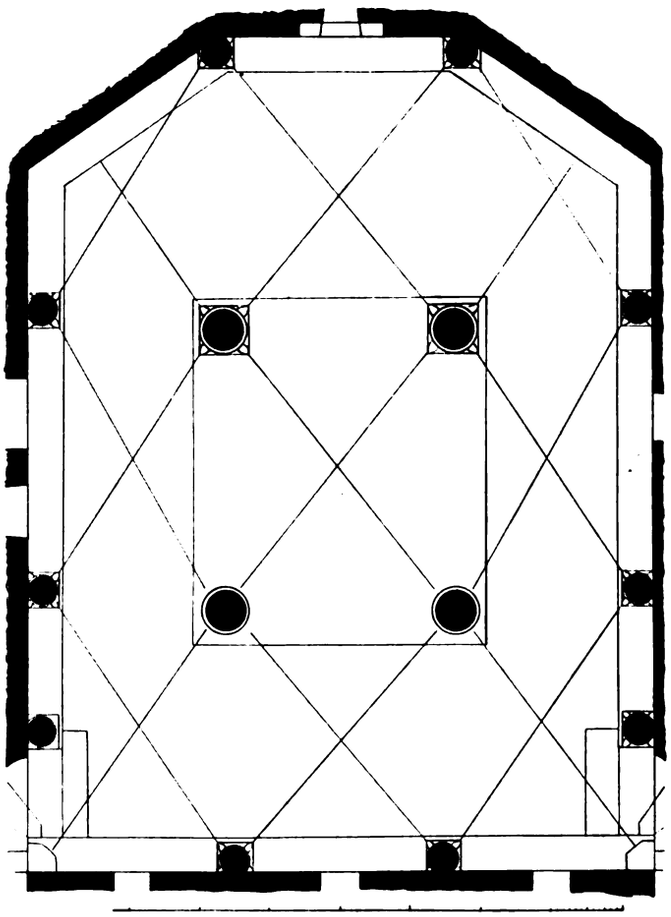


Fig. 4. Plan of Crypt, St. Girons, Hagetmau.

Digitized by Google

existence, which in the aggregate comprise the national life. Every monumental brass fastened to the floor—a monument to some forgotten gentleman—illustrates the history of our country. The monumental brasses of England—a unique characteristic of cathedral and church alike, for in no country in Europe are they to be found so numerous or so consecutive as in England—have been regarded too much as mere illustrations of costume, too little as pictorial representations of the movements of the past.

No more striking reminder of this, no more telling representation of mediæval life, can be found than that splendid and long-enduring monument, the brass effigy of Sir John Daubernoun in the church at Stoke d'Abernon in Surrey. This, the oldest of existing English brasses—it dates from 1277—shows a life-size figure in chain mail—the panoply of the Conquest, of the Crusades, of the Angevin reigns—the armour partly covered in its turn with a linen surcoat. A long cross-hilted sword hangs from a hip belt; just above the handle is the knight's shield, the blue enamel still well preserved, and within the bended left arm is the lance with its pennon.

The church, with its architectural indication of each age of the Gothic style, its quaint Elizabethan monuments, its Jacobean pulpit, placed as it is in the charming gardens of the manor-house, by which the Mole slowly flows, dividing them from wide water meadows, is an epitome of the past. But the brass of Sir John Daubernoun, as perfect now as when it was placed in the chancel of the little Norman church more than eight centuries ago, its bold and simple lines still clear, is that which most stirs the historic imagination. The smaller effigy of a younger Sir John of 1327 continues the story of a family, somewhat short-lived, of mediæval country gentlemen. Roger d'Abernon, who about the time of the Domesday Survey became lord of the Manor, was the tenant of a far more important personage, Richard de Bienfaite, son of Gilbert Count of Brionne. The first Sir John, who was Sheriff of Surrey, was but an ordinary knight, one of hundreds who were building up the English nation, who fought in the Holy Land and in France; yet, soldier as he was, his last resting-place was in the little English church around which his patrimony lay: "Sire John Daubernoun: Chivalier: Gist: Icy: Deu: De: Sa; Alme: eyt: Mercy" is the simple inscription round the figure. There in his imperishable monument he looks at us of this XXth century as he has at an endless train of Englishmen in each age of national life, and there in the silence of the summer noon we may ourselves review the pageant of the past from the day of Sir John Daubernoun to our own strenuous epoch.

COUNTY COUNCIL OFFICES, MARCH.—The Ely County Council have built new offices at March. The architect for the new building is Mr. Herbert John Green, of Norwich and King's Lynn, whose design was selected in competition with a number of architects who had been invited to send in plans. The builder is Mr. Reuben Shanks, of Chatteris, 4,295*l.* being the amount of his accepted tender, which was the lowest of nineteen sent in. The total expenditure, including furnishing, heating, etc., was 8,133*l.*

NOTES.

Society for Protection of Ancient Buildings.

THE Thirty-second Annual Report of the Society for the Protection of Ancient Buildings is a rather interesting and gratifying evidence of the fact that the Society has succeeded not only in educating the public to a considerable extent in regard to the evils of "restoration," but also in educating itself. In the early Reports the Society used to record, with a touching frankness, the series of rebuffs and snubs which it encountered from the custodians of buildings whom it endeavoured to instruct. There is a great alteration in this respect; we now read of a number of instances in which the Society's recommendations have been adopted with thanks. But the style of their Reports and comments has also altered, much for the better. The recommendations made are now mostly moderate and practical in character; the blind worship of everything that is in existence in a building at the moment, ugly or not, seems much modified; and there is far less of that *précieux* attitude of exquisite superiority which used to be such an irritating quality in the Society's communications. Several of the criticisms in the present Report refer to the treatment of bell-frames so as to avoid injury to the stability of the tower walls; the Society are quite right in recommending oak bell-frames in preference to steel, as having more elasticity and pressing less rigidly on the walls, and also (as they add in one instance) being better for the tone of the bells. We remember telling the first bell-founder who introduced steel bell-frames that they would be bad for the tone of the bells—a criticism which was of course indignantly scouted by the bell-founder; but every one with any knowledge of the effect of adjacent material on musical tone knows that it is true, and we are glad to find the Society repeating the caution. There is, however, one point which they seem to overlook in their general article which heads the Report. We quite agree that in most cases imitation mediæval work is of no value; if niches have lost their statues the lost figures should be replaced (if at all) by the best work that modern sculptors can produce, not by figures "in the mediæval style." But it is different in the case of a continuous repeated design, part of which has been destroyed. Take the case of a cloister of (say) eight bays, two bays of which have been at some period destroyed. That is a case in which it would be perfectly right to rebuild the two missing bays, in order to render the design complete. Ancient architecture is design as well as history. We do not know whether the Society has become broad-minded enough to admit that; but if not, we think they have still some progress to make in the paths of toleration.

Ninth International Architectural Congress.

THE organising committee of this Congress has recently decided on the subjects which are to be discussed at the forthcoming Congress to be held in Rome during the Jubilee celebrations of 1911. They include:

1. Ferro-concrete. Its uses in various countries up to the present, and the advisability of applying it to large buildings of an artistic character, both from a technical and from a decorative point of view.
2. Regulation of national competitions on the lines of international ones.
3. Town planning. Urban building and æsthetic regulations.
4. Technical and artistic education and the architectural diploma.
5. Duties and rights of the architect with respect to his client.
6. Professional practice abroad.
7. Review of modern architecture.
8. On the execution of architectural works by the State and other public bodies.
9. On the advisability of starting an international biographical architectural Review.

The Council has been elected: President, Camillo Boito; Vice-Presidents, M. E. Cannizzaro, R. Mazzanti, A. Guerra, G. Magni; Treasurer, A. Petrignani; General Secretary, G. Giovannoni. The Council was entrusted with the selection of two Hon. Secretaries and with the study of the conditions for the programme and for the regulation of the discussions at the Congress, which matters are to be finally decided at the next committee meeting.

Church Chancels.

IT is characteristic of England that a certain number of the chancels of churches belonging to the Established Church have to be kept in repair by persons who do not belong to that Church. This arises, as was shown in a short discussion in the House of Lords last week, from the fact that certain persons are "lay rectors," in other words they have special rights to the tithe, and special liabilities—the upkeep of the chancel of the church. There is really no hardship in this position, as any lay rector can sell the tithes just as much as any other kind of property. To what extent it affects the state of the structure of some churches can only be discovered by a somewhat detailed examination of particular buildings, but we are not aware that there is any reason to suppose that owners of the tithes with this particular liability attached neglect the legal duty which is cast upon them.

Reinforced Concrete.

IN discussing a paper on this subject read at the summer meeting of the Institution of Mechanical Engineers, two speakers expressed opinions markedly trending in opposite directions in respect of safe construction. Thus, Mr. Priest suggested that in making concrete it was not necessary to have the sand either sharp or clean, an idea which we trust will not be taken seriously by any of our readers. Professor Unwin, on the other hand, struck a note of warning in respect of possible uncertainties as to the factor of safety, and concerning the risk attending reinforced concrete construction by unskilled and inexperienced persons. Taking all things into account there need really be no more incertitude as to the factor of safety of a reinforced concrete design than in one for structural steel, masonry, or timber. But it is important that those responsible for safety should know the exact basis on which every detail of the calculations has been founded, this point applying with especial force to the designs submitted to architects by competing specialist firms. We are quite in accord with Professor Unwin as to the need for skill and experience. These are

Digitized by Google

qualifications which cannot be gained in a day, and must grow up—as in fact they are now growing up—with the increasing use of the new structural material. The large number of contractors already fully competent to deal successfully with reinforced concrete is a sufficient guarantee of safety if only such firms be intrusted with the execution of important works.

Water Supplies Protection. ALTHOUGH only touching the fringe of a great question, the Bill of which the second reading was moved last week by Lord Desborough deserves support, and if ultimately carried will certainly do something to relieve a grievance which is experienced in many rural districts in connexion with underground water supplies. Briefly summed up, the main objects of the Bill are to give more direct control over the sinking of wells and the construction of works for obtaining water, to provide for compensation to persons whose supplies are injured by the abstraction of water for public supplies, and to establish more clearly the right of any district whence water is taken for outside communities to demand a fair share of such water for its own needs. As matters now stand, the Bill has passed the second reading, the question as to the nature of the Committee to which it shall be referred having been deferred for consideration by the Government. As we point out in the "Note" below, and have repeatedly urged, the whole subject of water supplies now demands attention by a central authority, the creation of which ought not to be much longer delayed.

The National Consumption of Water. A PAMPHLET by Mr. W. R. Baldwin-Wiseman, reprinted from the *Journal* of the Royal Statistical Society, deals with the increase which has taken place, and still continues, in the consumption of water throughout the country. After making due allowance for waste through leaking pipes and taps, there is still a remarkable difference in the daily supplies thought adequate in the early days of waterworks development and those common at the present time. Quite apart from the greater quantities properly applied for domestic purposes, much of the water supplied by companies and local government bodies is accounted for by the requirements of public baths, wash-houses, street conveniences, drinking and other fountains, electricity and power stations, fire prevention, street cleansing and drain flushing, and of manufacturing premises of various kinds. The author does not suggest that we are now using too much water, his ultimate object being to urge the formation of a central authority charged with the duty of water conservancy in the widest sense of the term, and empowered to co-ordinate its work with that of water supply and sewage disposal authorities. An important duty of such a body would be the collection of data on rainfall, and another to advise Parliament as to the advisability of schemes affecting water supplies, sewage disposal, and river regulation, with the object of securing the just and efficient administration of the national water resources.

The Ngawun River Bridge: Burmah. OWING to the extension of the Burmah railway lines from Henzada to Kyangin, it became necessary to construct a bridge across the Ngawun River, about sixteen miles from Henzada, one essential being the provision of a movable span for navigation. As the Government requisition demanded an opening of 200 ft. clear, the plans were very carefully considered, and the Scherzer rolling lift system was found to be the most suitable for the purpose. The bridge comprises five fixed girder spans, each with the approximate length of 160 ft., the movable span having two leaves together measuring 220 ft. from centre to centre of the bearings. The substructure consists of masonry piers supported on well foundations of the type largely used in India. One distinguishing feature of the bridge is the economical arrangement and relatively small dimensions of the piers, the latter being a point of no small importance in a river subject to heavy floods. Including the largest movable span hitherto constructed in Asia, the Ngawun River bridge will probably become the model for similar structures elsewhere in Burmah and India.

Preservative Coatings for Iron and Steel. MUCH attention has been devoted by the American Society for Testing Materials to the preservation of iron and steel. At the recent annual meeting interim reports were presented by a committee and a sub-committee by whom the qualities of linseed oil are under investigation. The same committee have also been engaged in the periodical examination of the large scale exposure tests of different paints on the Havre de Grace bridge of the Pennsylvania Railroad. It appears that after the exposure of two and a half years nearly every variety of paint is showing good results, but that no definite conclusions will be drawn for another year. Other exposure tests at Atlantic City within a quarter of a mile from the sea are now in progress, considerable divergencies being exhibited by the various paints employed. The useful work of the society has also extended to the conduct of exposure tests with the object of observing the behaviour of wrought iron and steel under climatic influences. We shall probably have to wait until next year for full particulars of the several tests, and apparently to wait for many years before British architects and engineers begin to institute investigations of the same praiseworthy character.

The Budget and Building. A CORRESPONDENT signing himself "Interested" inquired in our columns last week, "How will a Budget which proposes to tax land which is unbuilt upon be likely to discourage the owner from building?" The answer to his question has been furnished by the Notes we have published during the last two months; but in case there are others like himself who have not studied the question we may shortly recapitulate one or two reasons why the Finance Bill will check building operations. In the first place, "Interested" apparently is only considering the tax on undeveloped land and ignoring the increment value duty and the reversion duty, which are all part of the Budget. If the tax on undeveloped land stood alone, as he appears to imagine, even that would prejudice the building trade (1) because it involves an expensive valuation on an uncertain basis, which clogs the transfer of the land; (2) because the definition of undeveloped land includes land which, in fact, is developed, and imposes a tax on all but the smallest properties of less than one acre; (3) because the imposition of burdens on land, unless it be used in one particular manner within very narrow limits, renders it commercially less valuable; (4) because if the land is in fact not ripe for development the imposition of this annual tax will tend to raise its price. The undeveloped land tax does not, however, stand alone, but all property in land is subjected to increment value duty in the future—a heavy impost, and one of great uncertainty and also involving repeated valuations. If land has hitherto not paid for development, the imposition of a possible 20 per cent. on any improvement in its value is a strange incentive to offer for its development, and land-owners may prefer the certain undeveloped land tax to the uncertain increment value duty. Lastly, the tax on reversions interferes with contracts and discourages the leasehold system which has enabled builders to develop land with a small capital outlay. The above are only a few of the "strong reasons" which our correspondent wishes to see adduced in support of the statement that the Finance Bill contains provisions injurious to the building trade.

The Finance Bill and Open Spaces. WE are glad to see that the National Trust for Places of Historic Interest or Natural Beauty have addressed a letter to the Chancellor of the Exchequer embodying the views held by the open space societies as to the effect the undeveloped land tax will have upon open spaces. The letter, as published in the *Times*, shows that there are many open spaces not open to the public, but which are confined to the use of the occupiers of the houses surrounding them, and which, nevertheless, contribute materially to the health of the towns, and these should be exempted from taxation. We referred last week to the case of playgrounds, which also are necessary for the national health. Sect. 11 subsect. 3 of the Finance Bill, which deals with such open spaces, has not yet been discussed in Committee, but it is to be hoped it may yet be amended. That subsection provides that undeveloped land duty shall not be charged ". . . on the site value of any land which is used for the purpose of games or other recreation, where the Commissioners are satisfied that the use of the land is for the benefit of the public or of the inhabitants of the locality, and that the land is so used under some agreement with the owner which as originally made could not be determined for a period of at least five years." This places an undue onus of proof on the trustees of such open spaces and gives the Commissioners undue discretionary powers. It is the

Digitized by Google

fashion now for Ministers to allude to the Finance Bill as though its provisions would alone affect dukes and large landowners, a class who do not habitually use recreation grounds or open spaces, and thus it is important that the public should be reminded that the open spaces are in jeopardy and that even private gardens exceeding one acre are by sect. 11 subsect. 4 not exempt. It is extraordinary that the Government which has favoured Town Planning and which professes to take an interest in the sanitary conditions of the poorer classes should by the Finance Bill treat open spaces, both public and private, as though they were a luxury. The present exemptions are wholly inadequate.

CHANGES IN BOARD OF EDUCATION SYLLABUSES FOR BUILDING AND ENGINEERING STUDENTS.

A RECENT memorandum issued by the Board of Education draws attention to recent alterations in certain sections of the syllabuses relating to geometry, practical mathematics, and applied mathematics. As it is desirable that the scope of the amendments should be brought to the notice of students at the first opportunity, we indicate below the general nature of the changes about to be made.

The syllabus in Subject I., Practical Plane and Solid Geometry, has been remodelled so as to incorporate material affecting architectural and engineering practice, and with the object of enabling teachers to adapt their tuition to specialised subjects a wider choice of questions will in future be accepted in examinations, hints being given as to the selection of suitable examples drawn from different branches of building and engineering work.

Before entering on a course in Subject I., students are required to have passed the examination in the preliminary Section Vp, Practical Mathematics. In Stage 1 of Subject I. specific mention is made of additional details in Plane Geometry, and a paragraph has been added to the Solid Geometry Section with reference to problems in connexion with roof construction, sloping ground, embankments, and joints in woodwork.

In the Syllabus of Stage 2, Subject I., there is a welcome intimation that in place of the work in vectors, building students may give special attention to applications of solid geometry in building construction, and occurring in the design of handrailing, strings for stairs, roofs, principals, hips, purlins, and rafters, and masonry domes. As the changes in Stage 3 of the same subject are too numerous for detailed mention, we must refer our readers to the revised text of the syllabus, simply mentioning the fact that the alterations are of the same general character as those in Stage 2.

Subject VII., Applied Mechanics, will in future cover a field of study which has necessitated the subdivision of the syllabus in Stages 2 and 3. The rearrangement has been effected so that the section on the Strength of Materials and Structures shall cover work of special value to building students, the other section, which is essential to engineering students, being the Theory of Machines and Hydraulics. Although there will be only one Examination in Stage 1, the questions will be chosen so as to encourage specialisation in the teaching of building students, another feature of practical utility.

Speaking generally, the changes announced should have the effect of rendering the subject-matter of instruction and examination more fully in accord with prevailing developments of building and engineering practice. They will undoubtedly facilitate more specific application of the teaching by means of examples drawn from those branches of work in which students are directly engaged, and at the same time they will provide for the most exhaustive study of sections of certain subjects in which marked advances have been made during recent years.

THE ARCHITECTURAL ASSOCIATION:

FORTIETH ANNUAL EXCURSION, AUGUST 9 TO 14.

CHELTENHAM AND NEIGHBOURHOOD.

COMPARATIVELY few years have elapsed since Architectural Association excursionists visited this part of the country, the headquarters on the last occasion having been at Cirencester. Such is the architectural wealth of the district, however, that a programme entirely different was then fulfilled.

Cheltenham itself, beyond a certain graciousness of lay-out, is not a specially interesting town, being almost entirely of the Regency period and later, but the creature comforts obtainable there, and its convenience as a centre, outweigh the fact that its attractions are not of an architectural nature. It has, in fact, once before served as headquarters for the Architectural Association excursion—fourteen years ago.

The word "Cotswold" has latterly achieved a blessedness like unto that of Mesopotamia, and a good attendance infallibly resulted from the selection of this field of work. As usual the majority of the party assembled on the Saturday previous to the commencement of the official period covered by the programme, but reinforcements arrived at intervals during Sunday and Monday. Those in occupation devoted Sunday to exploration of the surrounding country, Gloucester being the extreme point touched.

First Day—Monday.

Leaving Cheltenham in brakes at nine o'clock, a drive of about five miles through hilly country brought the party to Whittington, where, by the kind permission of Mr. Dobell, Whittington Court was inspected. This is an interesting house of late XVIIth century date, and forms a charming picture as first seen from the road, against a background of well-wooded rising land.

The detail is of the Cotswold type, representing the struggle of tradition against classic interpolations. In this case, the doorjambs, fireplace arches, and gable copings are almost mediæval in section and form, but triglyphs, guttæ, and other classic features appear in the chimney-pieces, and the string courses are frankly renascent. The windows in the three acutely-pointed gables of the north or entrance front retain their original glazing, and show how much the house suffers by its absence elsewhere. Internally a very fine oak open-newel stair claimed the attention of members, and was quickly thronged by sketchers, its ample proportions affording them freedom for their efforts. The staircase extends from the cellars to the roof in a series of flights of seven steps each, 4 ft. 9 in. in width; treads, 11 in.; risers, 7 in.; solid close strings, 13½ in. by 7½ in.; square 7½-in. newels, 3½-in. turned balusters, 6-in. by 6-in. handrail—a truly prodigal use of timber, but well justified by the effect. It is too much customary in modern practice to assume that handrails must be small enough to allow the hand to close completely over them, but this example presented strong evidence of the completely satisfactory nature of a much larger section if well designed. Some interesting panelling was seen in some of the rooms, including an ingenious solution of the Ionic angle volute difficulty, presented by the treatment of a corner lobby in one of the bedrooms, where the Gordian knot was boldly cut by its complete omission, the egg and tongue, and hems, mitring with the utmost simplicity.

Whittington Church stands curiously, with its north-west corner about 3 ft. from the Manor House. It consists of a nave with narrow south aisle, a chancel with what appears to have once been a private chapel, now united by modern arches, and forming a south aisle of almost equal importance, and a north porch. A weatherboarded and shingled bell-cot stands over the junction of the nave and choir roofs.

In the south aisle are three sepulchral effigies, *temp.* Edward I.—II., one of a lady and two of cross-legged knights, each bearing similar arms—six lozenges in pale with a label of five. Built into the chancel wall is a fragment (apparently a portion of the side of an altar tomb) bearing the same arms, which do not appear to have been identified. There is also a brass to Richard Coton and Margaret "his wiefe," dated 1556. In the vestry are several encaustic tiles from the original chancel floor, and a water-colour drawing showing the interior before its restoration by Mr. Waller in 1872. The shaft of a churchyard cross stands adjoining the east window.

On leaving Whittington, a further drive of about 3 miles through delightful country terminated at Charlton Abbotts. Here the Tudor Manor House, now a farm, proved well worthy of the closest study. Clinging to the steep slope of a rolling down, the house and its farm buildings form a splendid group as approached from the road below. The house is a lofty, three-storied one, roofed in a single span running east and west, and with three acute gables on the south front and two on the north, as well as a projecting two-storied wing (apparently added) with a third gable at a lower level on this side. The entrance is in the angle, and the house gains its picturesque qualities from the position and use made of the staircase to accommodate the varying floor levels to suit the fall of the site. The narrow eastern face fronting the road has a lofty square bay.

The farm buildings, higher up the slope, group most picturesquely with the house, a low range of buttressed buildings on the high ground being terminated by a fine upstanding gable-end facing east, pierced with slits and vent-holes, and brought down the slope by lower buildings clinging to its base—a splendid effect dependent entirely on mass and proportion.

Internally the principal rooms have been stripped of their panelling and chimney-pieces, and the hall is now divided by partitions. The upper rooms retain a good deal that is of interest—doorways, chimney-pieces, and panelling, and in the bedroom at the east end is a coved ceiling, while that at the west has early mitred panelling, and a chimney-piece with termes. The feature of the house, however, is the fine staircase and the effective approach by its means to the chief rooms. It has a solid newel wall of stone 5 ft. 6 in. square, and facing the head of the bottom flight (also of stone) is the fine entrance doorway to the hall. For the remainder the treads are solid, of oak without nosings, but with a curious skirting mould on the riser, and at the head is a screen of turned balusters of unusual and delicate profile.

Returning towards Cheltenham, a halt was called at Sevenhampton (locally Sennington), where the interesting cruciform church was first inspected. It consists of an unaisled nave, choir, and north and south transepts, all on a diminutive scale; a central tower of later date has been intruded at the crossing, and provides the most unusual feature of the church. Both this tower and the south porch are assumed to be due to a bequest of John Camber, whose brass is in the chancel, dated 1497. By his will, dated September 15, 1496, and proved May 5, 1498, he directs that his body be "buried within that Holy Churche in whatsoever parishe it shall so tyme me to decease. And I bequeathe to the same churche werke that my bodye shall be buried in, Cs." There are inferences in the will that he was a wool-merchant of Worcester, presumably given to travelling in the Cotswolds, so that his bequest appears to have been somewhat in the nature of a lottery. In detail the tower is somewhat coarse, and loses

Digitized by Google

scale owing to the relatively large size of the stones of which it is constructed. Its arches are without label mouldings, and internally are of depressed form in chamfered orders without impost mouldings or caps of any kind. Its most curious feature, however, is its position so far east of the actual intersection of nave and transept that its western piers stand free in line with the transept ridge, buttressed *internally* with diagonal flying buttresses to the transept west wall. The tower is vaulted at some height with a vault upon angel corbels, and there is a stair turret at the south-east angle. The traces of the existence of a rood loft are very plain. The spandrels of the south porch are pierced, and all this work, dated with almost entire certainty about 1500, is quite interesting in character. For the rest, the church contains little of surpassing interest. The south transept end has a XIIIth century triplet of rather poor design, and the north transept a late decorated two-light window. The east window is a three-light perpendicular one, but it is stated that evidence was externally visible that it was once a XIIIth century triplet—if so, later restoration has obliterated it.

Adjoining the church is the manor, to which the party were admitted by the kindness of Captain Pears, who conducted them over the house. It has had in its time a checkered career, serving in turn as a retreat for Sudeley nuns, a public-house, and, again, as a private residence. The internal stone sill of a window at the top of the house is said to have served as an altar. It has a raised rim along the edge and basin-shaped sinking at the left-hand end. The house was originally quite a small one, successive additions having brought it to its present size. The facts of its growth are well displayed by the east front facing the churchyard, though little difference in detail is discernible in the portions of various dates. The interior effects are of the unexpected order, consequent upon its growth piecemeal, and the original staircase has ceased to exist.

Magnificently bright and sunny weather favoured the start of the excursion, and suggested as the subject for a future paper "The Influence of the Position of Trees on the Selection of Sketching Points of View."

Second Day—Tuesday.

A rail journey of about fifteen miles brought the party on Tuesday morning to Broadway, where the old church, stranded about a mile from the later village, was first inspected. It is cruciform in plan and the nave is of XIIth century date with transitional arcades, though the chancel and transepts are later. The dedication to St. Eadburgh is unusual. Owing to its distance from the village it is only occasionally used, having been replaced by a modern church; but to this very fact it owes its chief charm—freedom from restoration.

Entering the village at the west-end, the XIVth century grange of the Abbey of Pershore, to which foundation Broadway belonged in the Middle Ages, was visited. Here members were welcomed by Mr. Millet, the well-known American painter, to whose efforts the reclamation of this delightful building from its former condition of neglect is due. It had been converted into a cottage, with the usual insertions of floors and partitions subdividing the big rooms, but has suffered surprisingly little during its vicissitudes. Traces even now remain, in the shape of "filling" above the transomes of the traceried windows, coinciding with the levels of floors removed. Measured drawings of the house appeared recently in the "Architectural Association Sketch Book."

The main lines of the plan are those normal to the mediæval house. The hall runs north and south with the kitchens (destroyed) at the north end and the dais at the south. It has a fine open timber roof with three principals. A curiously contrived stone stair is approached by a depressed ogee archway from the dais. This conducts to the tiny chapel above a small chamber on the east of the hall, and also to an upper chamber overlooking the hall by a squint—probably the Abbot's solar. In this room are the remains of a hooded fireplace and a well-preserved two-light window with reticulated tracery and mouldings quite remarkable in their grace and vigour. Beyond is another chamber with Jacobean panelling. A studio has been added on the site of the ancient kitchens, of which the foundations were traced and remain beneath the floor. Lunch was taken at the Lygon Arms, but time permitted only of a casual inspection of this fine old hostelry. The doorway is inscribed "John and Ursula Trevis, 1620," and there is much interesting work internally. Additions are now being made from the designs of Mr. Bateman.

Passing "Tudor House" (dated 1659) and admiring its fine proportions and the pattern glazing in some of the upper windows, a visit was next paid to Lady Maud Lyon's house, now in the occupation of Mr. Robert Hichens, by whose kind permission it was freely inspected. The beautiful doorway has formed the model for many others in the village. A large music-room, built by Mr. Prentice in 1905 upon the site of an old barn, has been very well handled, and the house gains much in effect from its setting amid gardens rich with old-fashioned flowers and scented herbs. The same can be said for the next house visited—Court Farm, now the residence of Madam de Navarro. It was impossible in the limited time remaining to do more than gain a hasty impression of the series of rooms, each with some point of interest, whether old panelling, chimneypiece, ceiling, or the fine collections of old furniture and pewter gathered by the fortunate possessors. A start had to be made for Chipping Campden, which was reached by a drive in brakes, passing through the picturesque villages of Willersey, Saintbury, Weston Subedge, and Aston Subedge. At Campden Church the Rector received the party, and Mr. C. R. Ashbee here gave a short address on the history of the town, once a place of considerable importance. He explained that two eras of prosperity had been experienced—the first during the golden age of the wool industry in England, and, later, when the centre of this had shifted into the Stroud Water Valley, a spell during which silk manufacture was introduced. To one or other of these periods most of the chief buildings of Campden belong. In each period the town had its great man—Greville, whose well-known house with its noble bay-window stands in the main street, and whose brass (dated 1401) is in the Parish church, during the Middle Ages; and Sir Baptist Hicks in the early XVIIth century. The church is of the type peculiar to its district and date. Its nave is of five bays with octagonal concave-sided piers, rather coarse mouldings, and an Eastern nave window above the chancel arch. It has suffered restoration internally. Its erection was in progress at the death of William Greville, who bequeathed 100 marks towards the work. It also contains examples of Campdens second life in the pulpit and brass lectern given in 1618 by Sir Baptist Hicks.

After leaving the church the party proceeded by the scant remains of the Manor House (burnt during the Cromwellian wars) and Sir Baptist Hicks's almshouses to Woolstapler's Hall—a survival of the earlier period, now in the possession of Mr. Ashbee, and used by him as a private residence. The form of its curious oriel window was explained by Mr. Ashbee as probably the result of an Elizabethan rebuilding of the original after a structural failure. A fireplace in the great room on the first floor has the arms of the Calf family in one of the spandrils. Measured drawings of the house have appeared in Mr. Ashbee's "Book of Cottages and Little Houses." Time again did not permit of more than a glance at the arcaded Market Hall or the many other noteworthy buildings of the old town, but a hasty visit was paid to the workshops of the Guild of Handicraft, and members then proceeded to the station *en route* for Cheltenham, with memories of a day crowded with incident, but not productive of much tangible result in the shape of sketches, owing to an *embarras de riches*.

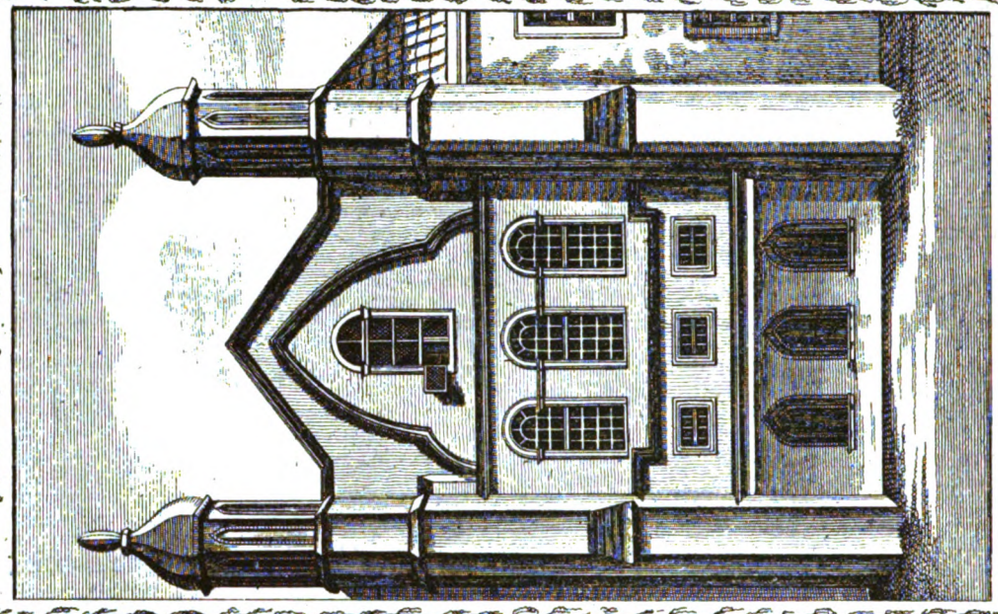
[Our report will be concluded next week.]

ENGRAVINGS OF OLD LONDON BUILDINGS.

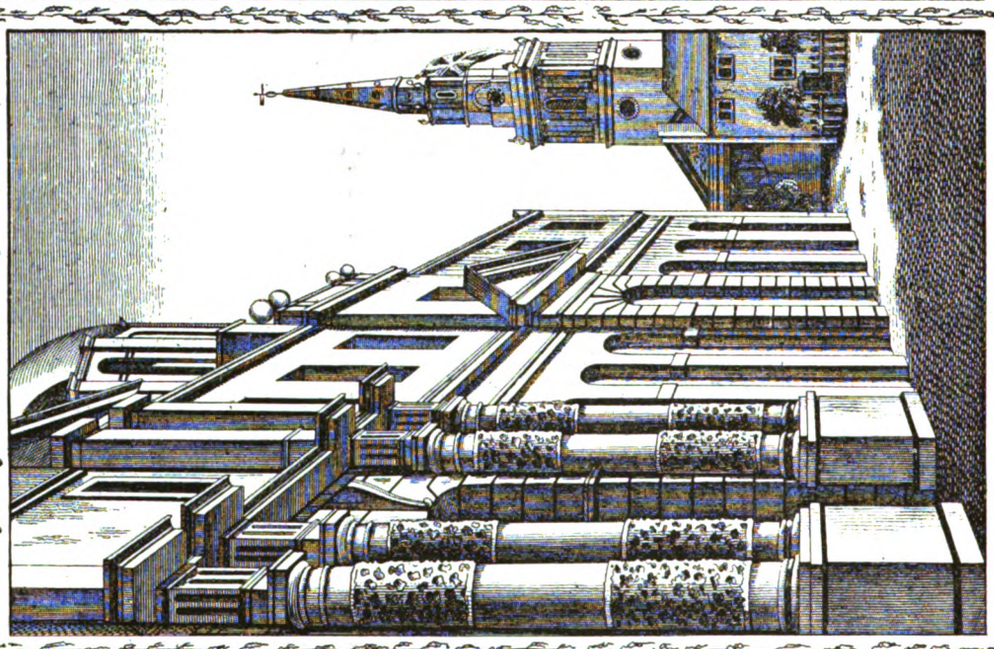
THE "View of the House of Commons" is of the east end of St. Stephen's, or perhaps more correctly St. Lawrence's, Chapel, abutting upon the Speaker's riverside garden of Westminster Palace. The Commons migrated thither *temp.* Edward VI. from the Chapter House of the Abbey, and sate there until the almost entire destruction of the chapel by the fire in 1834. King Stephen's collegiate church, which is still commemorated by the cloisters built in or about 1530 by Chambers, last dean of the college, and restored by Barry, and the name of Canon-row was to the Palace what St. George's is to Windsor. Having been twice burned, the chapel was rebuilt in the reigns of Edward I.—Edward III. We may refer our readers to H. W. Brewer's "Westminster in the Time of Henry VIII.," in our issue of November 15, 1884, for a view of the chapel, palace, and adjacent buildings, and also to an article with a drawing of the interior of the chapel (as restored), by him, in our number of July 23, 1892, which gives a detailed history of the building of the chapel, with extracts from the accounts preserved in the Public Record Office, the rolls of Robert de Hill and Walter de Weston, and other authoritative sources; the chief painters were Master Walter and Hugh of St. Albans; Master Thomas, of Canterbury, was the principal mason. The article is illustrated, further, with some drawings of the mural paintings and decorations—including portraits of the princes and princesses of Edward III.'s family—copied by Smirke and cited in our "Note" of April 17, pp. 461-2 *ante*, and of one of the nine XIVth century paintings of Biblical subjects (now in the British Museum), which were again revealed upon the removal of the fittings inserted by Wren when more room was needed to receive the Irish members. St. Stephen's Hall, 95 ft. by 30 ft. and 56 ft. high to the apex of the groining, now marks the position and limit of the old House of Commons. The crypt, also known as "St. Mary's Chapel in the Vaults," having served as a coal-cellar, and then as the Speaker's State dinner-room, was restored and decorated in 1852-3 as the chapel of the Palace and officers of Parliament.

The "Entrance of the House of Lords" is the King's Entrance from Old Palace-yard into the Prince's Chamber, and so to the House of Lords—that is, the White Hall, reputedly, of King Edward the Confessor, and afterwards the Court of Requests, whither the Peers removed from Henry II.'s Parliament Chamber when their number had been increased by the Act (July 2, 1800) of Union with Ireland. The many buildings, taverns, etc., along the east side of Old Palace-yard, comprising the old Ordnance Office and the King's Entrance, gave place to James Wyatt's front to the House of Lords (see an illustration of Wyatt's work in the *Builder* of January 5, 1901, with J. T. Smith's plan of 1807, and a view of the chapel and cloisters as after the fire on October 16, 1834).

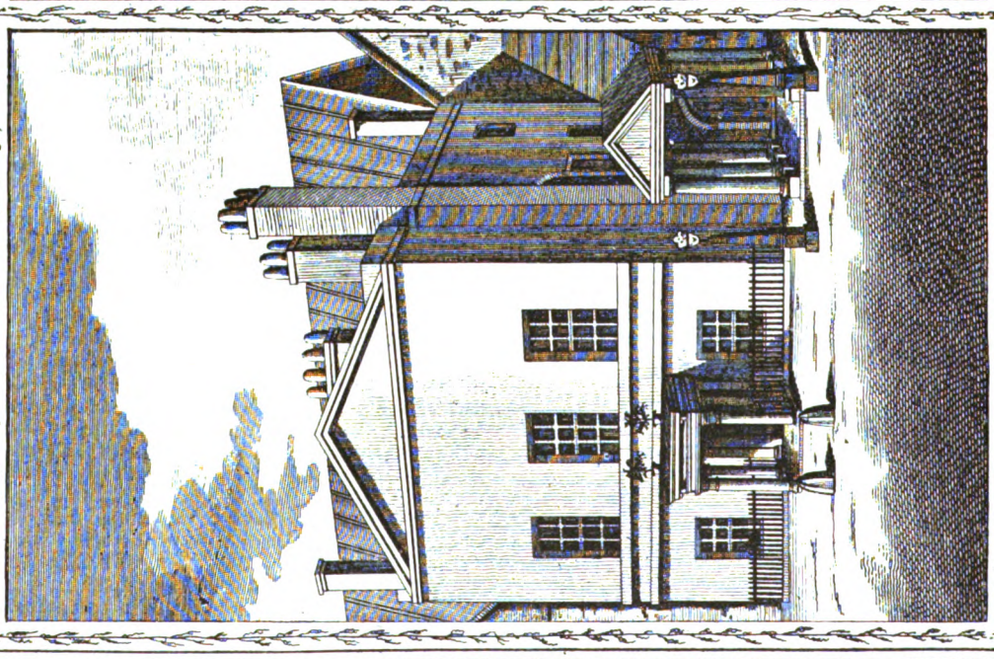
The "Royal Stables" is a view of the south side of the east wing of the King's Mews at Charing Cross which gave way to Sir Charles Barry's scheme, begun in 1835, for the laying out of Trafalgar-square—compare the plans, based upon E. Waters's and J. Wyld's surveys of 1799-1840, in the *Builder* of July 2, 1904. That wing of the Mews, which were removed thither in 1534



View of the HOUSE of COMMONS, from the River Thames.



View of the ROYAL STABLES, and part of the Church of St. Martins in the Fields.



The Entrance of the HOUSE of LORDS, with the late Office of Ordnance, adjoining.

Engravings of Old London Buildings.

Digitized by Google

from Bloomsbury, measured 271 ft. by 55 ft., and formed the stables of the State horses—it is often confused with the riding-school which adjoined it on the south-east. The middle gateway opened out of Frontier-court and into the Green-mews. Some ascribe the south front, depicted in the view, to Kent; but it seems that it was designed by Lord Burlington when, in 1732, he remodelled the entire mews for George II. (see T. Malton's print of December 30, 1794, and Wale's print of about 1750, reproduced in our issue of January 17, 1903). After the transference of the stud and equipages to Pimlico in 1824 the "Royal Stables" were used for storing public records, and, in 1829, for Cross's Ménagerie, from (Old) Exeter Change, Strand, and for the National Repository, an institution somewhat similar to the Conservatoire des Arts et Métiers in Paris.

The illustrations are reproduced from a print in the collection of Mr. A. W. Venner, architect, of Redhill.

COMPETITION FOR LIVERPOOL UNIVERSITY ARTS EXTENSION BUILDING.

THE Universty of Liverpool has held a competition for an extension of the Victoria Building, in which the Arts Faculty is housed; four architects were invited to compete, Messrs. Briggs, Wolstenholme, & Thornely, Mr. J. F. Doyle, Mr. F. W. Simon, and Messrs. Willink & Thicknesse; the assessor appointed by the President of the Royal Institute of British Architects was Mr. Guy Dawber, F.R.I.B.A.

The problem to be solved from the point of view of internal planning and external appearance was equally difficult. The proposed Arts extension wing closes one end of the roughly rectangular quadrangle, which is surrounded by irregular buildings, chiefly from the design of the late Mr. Alfred Waterhouse.

Liverpool University was not one of his most happy efforts; the materials are unpleasant—whitish grey brick and staring red terra-cotta, and the type of design is a sort of non-collegiate Gothic of a lean nature. Furthermore, the buildings are grouped on the site surrounding this quadrangle in a manner that suggests the entire absence of any guiding principle.

The new Arts wing, therefore, links up the Victoria Building on the one hand with the Holt Physical Laboratories, which latter are not Mr. Waterhouse's work, but belong to a group built by Professor Simpson and Messrs. Willink & Thicknesse, and are distinctly different both as regards materials and design to Mr. Waterhouse's work. Their main character, however, is vertical and gabled in treatment, with here and there a twinge of Greek ornament.

It was, therefore, evidently undesirable to carry on the design of this Physics building, as this would give the new Arts wing the appearance of a physical branch; three alternatives, accordingly, presented themselves:—(1) To carry forward exactly Mr. Waterhouse's design and materials; (2) To place an entirely new piece between these two different older portions, cutting it off by a short blank space at either end; (3) To compromise by designing the new wing in a more collegiate, and, we may venture to say, better type of Gothic, which would not militate against the older, and yet would give a distinctive character to the new wing.

The latter is what the committee seem to have had in their mind in the original conditions, which say, "The character of the new building externally, both in form and colour scheme, is to be in harmony, as far as this is possible, with the Victoria Building on the one hand and the Physics building on the other. Seeing the difficulty of this, the assessor does not wish to impose on the competitor a continuation of Mr. Waterhouse's internal or external detail, or to restrict the competitors to any particular style of detail or material. But whatever style is adopted, the purpose of the building should be borne in mind." In justice to Mr. Dawber we must explain that the above confused clause was not his work, but that of the special committee appointed by the Council of the University, which suggests that perspicuity of thought is not always to be found in academic circles. We understand that the "harmony" here insisted on was somewhat relaxed in later notices of the competition, which may account for two of the competitors, Mr. Simon and Messrs. Willinck & Thicknesse, who, adopting our second alternative, sent in designs as completely out of harmony with the existing work as they could possibly make them both in scale, style, and materials. Mr. Doyle chose the course that needed least bother or thought, and as nearly as possible carried on Mr. Waterhouse's type in design and materials.

Messrs. Briggs, Wolstenholme, & Thornely attempted the third solution, and designed their elevation in a late French château type of Gothic with symmetrical grouping. To decide which is æsthetically the right treatment is a difficult task. The last-named firm, to whom the assessor awarded the first premium, were undoubtedly designing in harness, partly in deference to the clause quoted and to the generally-accepted opinion that it is necessary to sink one's individuality somewhat on occasions for the sake of a general effect. It is this spirit of self-denial that has created the town of Paris as we know it to-day, and which Wren put into practice at Greenwich, but Vanbrugh, a lesser mind, could not bring himself to. At the same time we understand that it has become generally known since the competition that there may be eventually a new quadrangle on the far side of this new wing where Ashton-street now exists. The new wing would then form the first side of a new quadrangle, and an entirely new and different treatment would then be possible and preferable. In the conditions this quadrangle was not mentioned, and the only hint of it given was the suggestion that the Arts building might be continued further up Brownlow-hill outside the area of the present quadrangle, and that the present loss of the Arts Theatre (the principal hall of the University), which will disappear under the new arrangements, would necessitate the building of a University Hall at no very distant date. Mr. Simon has even gone so far as to show this hall, which he places in the inner angle between the Victoria Building and his proposed wing—a singularly unfortunate position, as it half hides his symmetrical front of the Arts wing; nor could it possibly be treated in a similar style, it being a vast three-quarter circle on plan flanked with two circular or octagonal turrets suggesting the end of Worms Cathedral. We mention the possibility of this new quadrangle, as it seems to us that the University is still going on in the same hand-to-mouth manner, tacking on buildings here and there without any definite scheme to work to; and we are of opinion that Messrs. Briggs, Wolstenholme, & Thornely might possibly desire to alter their scheme in many particulars if they were told that not only is the new building the completion of the existing quad, but the first side of a new one. We hope, at any rate before the work proceeds, that the whole scheme of the future quadrangle will be considered with some small degree of that foresight which one expects from an enlightened body such as a university. One small point will illustrate the advisability of what we suggest:—In the conditions no entrance is asked for to the new wing from Ashton-street, but there is to be a carriageway through into the quadrangle. As the buildings now stand, this is quite natural, and the entrance to the street would require extra supervision, etc. But if Ashton-street were replaced by a quadrangle belonging to the college, an entrance into it from that side would be essential; therefore, should not the possibility of an entrance at the right point be provided for in the present scheme?

As regards the plans of the extension, we have not the space adequately to discuss them. The competitors were required not only to plan the new wing, but to remodel the adjacent portion of the Victoria Building so as to form a central administration library connecting the old Tate Library in the Victoria Building with the departmental libraries in the new wing. The great variety of treatment possible in the solution of this problem, and the special nature of the requirements of the building, makes it extremely difficult to decide what are essentials and what non-essentials to the plan, but looked at from the general standpoint it would seem to us that the assessor had selected the most straightforward and direct plan for the first premium. The staircase and crush-spaces are particularly well arranged so as to take away the audiences from the lecture-theatre without interfering with the quietness of the departmental suites. This scheme certainly involves a good deal of reconstruction in the Victoria Building, but one can hardly regret the disappearance of the Arts Theatre, as its awkward shape is not amenable to convenient treatment. Mr. Simon has attempted to preserve the shell of this Arts Theatre and line it inside with a new facing of shelves, gallery, etc., which is an ingenious method of utilising it. His staircase, which is oval on plan, has an attractive appearance, but its position between the central library and the departmental libraries is one open to many objections. His elevations, as already mentioned, are in a Renaissance style of considerable merit, very delicately rendered.

Messrs. Willink & Thicknesse's design is in a much freer type of Renaissance treated with plain side wings in brick and a stone central feature, but we cannot agree with the square-headed tunnel carried through the centre of the block as an entrance to the quadrangle, its length further increased by the great projection of the central features. Their plan for the remodelling of the Victoria Building was not visible; it was, therefore, impossible to compare their scheme with the others.

Mr. Doyle's scheme was distinctly inferior to the other three in plan, and his elevations, being an exact continuation of Mr. Waterhouse's, do not call for comment. It would seem that the reporter to a local paper had mixed these elevations up with those submitted by Messrs. Briggs, Wolstenholme, & Thornely, which are described as "an all too successful imitation of Mr. Waterhouse's work"—an error too gross even for the well-known ignorance displayed by the public press towards architecture.

The first premiated elevations are, as we have already pointed out, a conscious departure from Mr. Waterhouse's design, but not so wide as to be out of harmony with it, according to the committee's original stipulation.

What we should like to see done now is to appoint the architects awarded first premium and to commission them to prepare a scheme for the whole quadrangle (without necessarily the University binding itself to employ them to carry it out), in order that they may be able, if desirable, to modify their present design to accord with the wider scheme, even to the extent of adopting an entirely new external treatment of their building.

The drawings were on view in the old Blue Coat School, Liverpool, from July 25th—30th inclusive.

NEW HOTELS, AUSTRIA-HUNGARY. — The *Oesterreichischer Zentral-Anzeiger* (Vienna) of July 25 contains a notice to the effect that Mr. Isidor Rendes, the proprietor of the Meteor Hotel in Budapest, intends to build an hotel at the corner of Rákóci-Strasse and Csokonai-Gasse. It appears, also, that the Ritz Hotel Construction Company, of Paris, have decided to build, at a cost of 2,500,000 kronen (about 104,000*l.*), an hotel, also in Budapest, on the banks of the Danube.

Digitized by Google

Cottages near Barnet, Herts. Mr. Roland Paul, Architect.

COTTAGES NEAR BARNET.

THESE cottages have recently been erected a short distance north of Barnet. The walls are brick rough cast, and the roof is covered with sand-faced Broseley tiles. The builder was Mr. H. Harrison, of Barnet, and the architect Mr. Roland Paul, of London and Clifton.

LUMP PLASTER (PLASTER OF PARIS). OVERBURNT PLASTER, AND FLOORING PLASTER.

M. GLASENAPP, in the *Thoninder Zeitung* of 1908, contributed in three successive numbers an account of his studies in this subject, and the same has been abstracted by the Society of Chemical Industry. The following classification of the different varieties of plaster shows their properties, with the temperatures at which they are produced:—

Behaviour of Plaster.		Temperature of Formation.	Characteristics of Product.
		Degrees.	
Set with water owing to formation of crystals (*i.e.*, set with alteration of form).		107 Centigrade	Hemihydrated calcium sulphate $(CaSO_4)_2 H_2O$.
		107—170	Mainly hemihydrated calcium sulphate.
		170—200	More or less dehydrated hemihydrate. Sets rapidly with water to form the hemihydrate.
			These two known as lump plaster or plaster of Paris.
	Ditto	200—250	Contains small quantity of water, sets slowly at first with formation of hemihydrate.
	Ditto	250—400	Contains traces of water, sets very slowly.
When treated with alum solution, set owing to formation of crystals (*i.e.*, set with alteration of form).	Set slightly, or not at all.	400—750	Anhydrous calcium sulphate, practically dead burned.
		750—800	Beginning of formation of flooring plaster.
	Set slowly, with water, without alteration of form.	800	Flooring plaster, with cryptoform of the granular anhydride.
		900—1,000	Normal flooring plaster, with full development of the granules.
		1,000—1,400	Flooring plaster with granules of increased size and hardness, and rising content of basic sulphate.

A chemical and microscopical investigation of the different forms of plaster, M. Glasenapp says, has shown him that most of the previously-published statements on flooring plaster are erroneous. (A digest of the views of other investigators are given by the compiler at the foot of M. Glasenapp's statement.)

The statement, for example, that flooring plaster can be obtained at temperatures of 400°—600° C. or even lower, has no foundation in fact; further flooring plaster is not isomeric with soluble anhydrite; does not show the crystalline form of the hemihydrate; and on setting does not give crystals of the dihydrate, as ordinary plaster of Paris does. Flooring plaster is defined as consisting of a mixture of a granular, dense, sintered, hard, refractive, crystalline modification of anhydrite, with small quantities of a segregated, amorphous, vitreous, basic anhydrite holding lime in solid solution. It needs a temperature of about 900° C. for its complete formation, and at higher temperatures up to 1,300° C. and over, it becomes coarser in structure and harder, with formation of larger quantities of the basic constituent. It combines with water only slowly, and apart from the production of small quantities of crystallised calcium sulphate dihydrate $CaSO_4(H_2O)_2$, and calcium hydroxide $Ca(OH)_2$, without alteration of form, or of its optical properties and hardness. With addition of positive catalysts, *e.g.*, alum, it is converted into soluble anhydrite, and then sets by crystallisation just as plaster of Paris does. (Compare P. Rohland and Ch. Cloez, below.)

The results obtained as to the temperature of formation of flooring plaster are of considerable technical value, as showing that the possibility of overburning the charge is practically excluded. The temperature may rise as high as 1,300° C. or even higher locally and for a short time, without the setting properties of the plaster being adversely affected, provided the fuel does not exert a strong reducing action. The temperature may also fall as low as 800° C., but a lower limit of 900° C. is preferable. Flooring plaster of normal properties can be prepared from the different forms of natural gypsum and also from voluminous broken plaster (plaster moulds). The technical importance of flooring plaster is indicated by the following properties. It sets to a white material as hard as marble and as strong as Portland cement, translucent in thin layers, and with a dense close structure; it is superior to white silicate cements. The slow setting appears to be a disadvantage, but casts, prepared from flooring plaster, are sufficiently hard to be removed from the mould after a few days, and the hardening

Digitized by Google

may then be completed in a chamber in which the atmosphere is kept saturated with water vapour, the surface of the casts being occasionally moistened with water. The setting may also be somewhat hastened by adding about 10 per cent. of slow-setting plaster (prepared by burning at 200° to 220° Centigrade).

The use of the microscope is recommended for differentiating the several varieties of plaster, a small quantity being rubbed on an object glass with a drop of water, and then examined. Particles which appear fibrous, turbid, and of a yellowish-brown colour by reflected light have been produced by burning below 800° C., and are quite distinct from flooring plaster. They almost invariably show fragments of the needle crystals of the original crude gypsum. In the case of flooring plaster, on the other hand, there is no trace of a fibrous structure, except when the temperature of burning is only 800° C. The particles are clear and transparent and strongly refractive, appearing lighter in colour than the surrounding water, and increase in size as the temperature of burning is higher. The time required for crystallisation to set in, as observed under the microscope, serves to distinguish ordinary plaster of Paris from the slow-setting soluble anhydrite.

P. Rohland has classified the modifications of hydrated and anhydrous calcium sulphate as follows:—(1) The dihydrate, $CaSo_4(H_2O)_2$; (2) the hemihydrate $(CaSo_4)_2(H_2O)$ obtained when the dihydrate is heated to 107° C.; (3) the first anhydrous modification (so-called overburnt plaster of Paris) obtained by heating to 130° C.; (4) the second anhydrous modification (so-called hydraulic or flooring plaster of Paris) obtained by heating to 525° C.; (5) a third anhydrous modification obtained by igniting in the blow-pipe flame; but which usually contains decomposition products; and (6) natural anhydrite. The hemihydrate and the second anhydrous modification possess hydraulic and hardening (setting) properties, as also does the first anhydrous modification in presence of positive catalysts such as common salt, sodium sulphate, potassium bichromate, aluminium chloride, etc. With hydraulic or flooring plaster he found that the velocity of hydration was influenced to a degree depending upon the nature and concentration of the catalyser, the last-named acting through its influence on the solubility of the anhydrous calcium sulphate. An increase of solubility is accompanied by quicker hydration. Solution takes place before hydration and subsequently the crystalline dihydrate separated.

The (3) and (4) may be distinguished by their behaviour on hydration. The former is hydrated and becomes hydrated within sixteen hours, whilst the latter only hardens a long time after hydration. Natural anhydrite will harden in presence of a positive catalyser (sodium sulphate).

J. H. van't Hoff and G. Just found that "Estrich" or so-called flooring or hydraulic plaster took up water much more slowly than block plaster of Paris. The latter on setting shows, after strong contraction, a certain amount of expansion; but with flooring plaster, the volume decreases uniformly and continuously. The commercial "Estrich" consists essentially of anhydrous calcium sulphate, with a small excess of lime, and for the most part occurs in needle-shaped pseudomorphous crystals resembling the hemihydrate.

Ch. Cloez found that plaster from the oven, even at the lower temperatures, is free from water, but that at 14°—16° C. (the atmospheric temperature) it readily absorbs moisture to the extent 6·2 per cent, corresponding to the supposed hemihydrate. He regards the act of setting of plaster to be three successive phenomena—(1) Hydration; (2) solution; and (3) setting *en masse* of a supersaturated solution.

Legal Column.

Workmen's Compensation.

Hardly a better instance of the difficulties involved in the interpretation of the Workmen's Compensation Act can be given than that of a recent case in the House of Lords, Low or Jackson *v.* General Steam Fishing Company, Ltd. The question involved was whether a man who had been drowned met with his death by accident arising out of and in the course of his employment. The man was engaged as a watchman over four trawlers, and he would be on duty twenty-five hours, and he had to provide himself with refreshment. He went to a neighbouring inn and obtained refreshment, and having returned to the quay, and whilst descending a ladder on to one of the trawlers, he fell into the water and was drowned. It was a Scotch case, and the Sheriff Substitute found for the applicant, the widow. The Court of Session reversed his finding, but the House of Lords, in considering the question whether there was any evidence to support the original finding, were divided four against two, the majority holding that there was evidence to entitle the court of first instance to hold that the accident had arisen out of and in the course of his employment, but even this majority appears not to have been agreed as to the exact limits within which liability would attach. The difficulty arises from their being no limit of locality, as was the case, in the Act of 1897, and, this being the case, the scope of the employment is difficult to define. We dealt with this question in our Notes, November 2, 1907, and again in connexion with a recent case, Moore *v.* Manchester Liners, Ltd., January 9 last. The distinction between that case and the present, according to the judgment of Lord Ashbourne, was that the man in this case had returned to the field of his labours before the accident occurred. He was entitled to be on the quay or on the ships, and might have to pass from one to the other, and he was descending from the quay when he was killed. The great divergence in judicial opinion on a question of fact, and upon a point which may arise in nearly every case, emphasises the unsatisfactory character of legislation on these lines.

A Drainage Question.

Some points of interest were decided in the case East Barnet Valley Urban District Council *v.* Stallard. The defendant was the owner and occupier of a house and premises the greater part of which were situated outside the plaintiff Council's district. Before 1895 the system of drainage was as follows:—The house drainage went to a cesspool with an overflow into a pond; both the cesspool and the pond were in the plaintiffs' district. The farm buildings drained into the overflow drain before it reached the pond. The overflow from the pond went into a storm-water drain, and from thence into a brook. In 1895 the pond became a nuisance, and at the instance of the plaintiffs' surveyor the then owner of the defendant's premises connected the cesspool overflow drain by a 9-in. pipe through the pond with the storm-water drain. The road gullies and brook then became a nuisance, and in 1897 the plaintiffs, without consulting the owner of the above premises, turned the storm water into a sewer lower down the road. In 1900 the plaintiffs required the owner to agree to terms by which the communication should be continued, or to adopt another system of drainage, but he pointed out that the 9-in. pipe was laid down by the surveyors' permission, and the connexion with the main sewer had been made without reference to him, and therefore he was under no liability. In 1902 the plaintiffs extended their sewer and connected it with the 9-in. pipe, and in 1904 they served notices on the owner's executors, but took no proceedings in default. In June, 1906, the present defendant purchased the premises and made some alterations by connecting extra baths and water-closets with the 9-in. pipe, but he pulled down the stables and farm buildings, so the total amount of drainage was not increased. The plaintiffs then served notices upon the defendant requiring him to come to terms on which the communication should be continued under Sect. 22 of the Public Health Act, 1875, or to provide another mode of disposing of the sewage. The court held that in the above circumstances, Sect. 22 had no application. That section is as follows: "The owner or occupier of any premises without the district of a local authority may cause any sewer or drain from such premises to communicate with any sewer of the local authority on such terms and conditions as may be agreed upon. . . ." It has been decided upon sect. 21, which applies to owners and occupiers within the district, that when once the communication with the sewer has been made it cannot be interfered with (Attorney-General *v.* Clerkenwell Vestry, 1891; Brown *v.* Dunstable Corporation, 1899), and the Court applied the same ruling to sect. 22. When once the connexion between the sewer and the 9-in. pipe was made sect. 22 ceased to apply, because the defendant was not seeking to avail himself of the powers conferred by that section, but was only desirous of leaving things as they were. The connexion of the new baths and water-closets was not a new communication within the section; slight internal alterations of this description short of the sewer did not constitute a fresh connexion.

The Public Health Act.

A curious point arose for decision in the case Pegg & Jones, Ltd., *v.* Derby Corporation ("Current Law Reports"). The appellants, Pegg & Jones, were the occupiers of a factory on which were four privies. From the case as stated it appears that a local Act was in force which required that the situation, dimensions, materials, and construction of privies should be subject to the approval of the Corporation. The privies in question had, however, never been approved. The Corporation, under sect. 42 of the Public Health Act, 1875, had undertaken the cleansing of all privies which had received the approval of the Corporation, but on notice being given failed to cleanse those belonging to the appellants, who in consequence summoned the Corporation under sect. 43 of the Public Health Act. Sect. 42 of the Act provides that the local authority may undertake to cleanse the privies, etc., "either for the whole or any part of their district," and the Court interpreted this as meaning a limitation as to area, but not a limitation as to particular houses in the same area. Then sect. 43 imposes penalties for failure to cleanse, etc., "without reasonable excuse after notice in writing," and the Court held that the privies not having been approved did not provide a "reasonable excuse." The proper course for the local authority to adopt was indicated by the Court to be to make by-laws relating to the privies under sect. 157, and thus to compel the owners to put them into the condition which they would approve, but not to attempt to enforce submission to their requirements by refusing to cleanse. The terms of the local Act are not referred to in the judgments, so it is not quite clear why that was not as effective as any by-law.

Mansion-house, Glenisla. — A mansion-house has been built for Sir Andrew H. L. Fraser, K.C.S.I., LL.D., on a site at Auchinleish, Glenisla. The contractors were:—For mansion-house—mason, Mr. R. Torbat, Glenisla; joiner, Mr. J. Crowe, Edinburgh; plumber, Mr. W. Templeman; slater, Mr. J. Walker; plasterer, Mr. W. Sidey—all of Alyth; ironmongery, Messrs. Tosh, Kirriemuir; bell-hanging and window blinds, Messrs. Westwood & Son, Perth; painter, Mr. E. Copeland, Aberdeen. Stable, offices, etc.—mason, Mr. W. Robertson, Auldvournoch; joiner, Mr. J. Adam, Coupar Angus; slater, plumber, plasterer, and painter, same as for mansion-house. Messrs. L. & J. Falconer, Blairgowrie, were architects, and Mr. T. L. Kay, Alyth, was inspector of works.

Digitized by Google

THE BUILDER

AUGUST 14, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, AUGUST 14.

Manchester Society of Architects (Incorporated).—Visit to Tirley Court, Cheshire. Leader, Mr. F. P. Oakley. The party will be met at the building by the architect, Mr. C. E. Mallows.

TUESDAY, AUGUST 17.

Manchester Society of Architects (Incorporated).—Visit to the following buildings at Middleton:—New Council schools (Messrs. Wood & Sellars, architects); shops; fountain in park; new roof, etc., St. Leonard's Church (Mr. Edgar Wood, architect).

WEDNESDAY, AUGUST 18.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

Illustrations.

SKETCHES WITH THE ARCHITECTURAL ASSOCIATION EXCURSION.

WE devote this week's plates to a series of sketches by Mr. W. Curtis Green, illustrating some of the buildings visited by the Architectural Association during their annual excursion. Cheltenham, this year's headquarters, lies in the heart of a district which is singularly rich both in natural and architectural interest.

The Tower of Gloucester Cathedral forms a splendid subject for illustration, and we think our readers will agree that Mr. Green has done full justice to his subject.

The Cloister, whose vault is the earliest fan-vault of any importance, is so well known as to make any further comment superfluous. The other sketches give a comprehensive idea of the Gloucestershire vernacular style.

A report of the opening days' proceedings of the excursionists appears on another page.

THE AMERICAN INSTITUTE OF ARCHITECTS:

ADDRESS BY THE PRESIDENT, ETC.

THE following is taken from the address delivered by the President of the American Institute of Architects, Mr. Cass Gilbert, in connexion with the proceedings of the Forty-Second Annual Convention of the Institute at Washington, D.C., in December last, and we print it because of its general interest to architects in this country. We also print the greater part of the speech delivered by Mr. J. Bryce, the British Ambassador, at the banquet which followed. After some preliminary remarks the President said:—

"If we compare the broad influence of the Institute to-day with even that glimpse of the 'Golden Age' some fifteen years ago, when the Columbian Exposition was built by the leaders of our Institute, and we achieved governmental recognition as a profession through the passage of the Tarsney Act, we will see the sure advance of a great national organisation to a truly national scope—and so seeing we will realise the responsibilities that come with increased authority. Let us grow in wisdom as we have grown in numbers, in power, and in material wealth.

I forbear to make a comparison in detail or to furnish statistical records, but the evidence is before you in the fact that through the wise councils and unselfish endeavour of the Institute we have come to be the adviser and, as need arises, the respected arbiter in matters of the gravest importance. *Then* it was with difficulty that we obtained a hearing from either the public or the Government. *To-day* we are welcomed in the councils of all those who sincerely desire to do well in matters within the sphere of our profession. Our great and growing cities, our states, and the National Government itself, all call upon us for professional counsel, and approach the subject of architecture and the other fine arts from a standpoint largely influenced thereby.

The President of the United States, in calling together that notable conference of the Governors for consideration of the Conservation of the Natural Resources of our country, invited the American Institute of Architects, as one of a few organisations of national scope, to take part therein, and we have now an Institute Committee acting with the Conservation Commission which grew out of that conference. This commission will, I believe, become one of the greatest powers for national good that has ever been created.

Many of the states are considering laws for the licensing of architects, some have already passed such laws, whether with wisdom or not will only be proved by experience, but for the present it may be said that it is an experiment intended for the protection of the public and of the architects alike.

Several of our cities have official consulting architects to advise as to the best methods of procedure and to guide their officials in all matters of design.

Civic associations and municipal authorities are calling the members of our profession to assist in the study and betterment of civic conditions, the designs of streets, parks, bridges, and public monuments, and I need not add that the members of the Institute have responded cordially in assisting in these endeavours for the general good. . . .

The Congress of Architects in London of 1906, and in Vienna of 1908, and the international incidents of the last Convention of the Royal Institute of British Architects have demonstrated the increased respect in which our Institute is held and promise a closer relation with consequent mutual advantages for the future—such closer bond of sympathy and understanding between American and foreign societies of like intention has not been without encouragement from the National Government, however indirect or incidental, and in a large sense makes for a better understanding between nation and nation, weaving one more strand in the fabric of amity that makes for the peace of the world. . . .

Our Committees have chosen as the principal topic for this convention the relations of the arts to the Government, and you will be invited to consider and act on the proposition that it is desirable for the art works of the Government to be under the general control of a Bureau of the Fine Arts. I will not anticipate the report of the Committee by more than this brief reference to the subject, but may add that in all of our discussion of it we must bear in mind that we look at it from only one side, viz., that of the artist and the professional man, but that before such a proposition can be enacted into law it will be subject to careful legislative scrutiny; it will be considered from the standpoint of economy and administration, and many objections will doubtless be raised; many corrections and amendments will be made. But the outcome will be progress. . . .

Let us sternly rebuke those forms of practice which infringe on moral right, which place selfish interest above the general good, or tend to lessen the dignity or lower the tone of the profession. And with just and well-considered rules of conduct, let us hold *ourselves* as well as our neighbours to strict accountability for their fulfilment. In short, let us have the right code or none at all. The Institute is safer relying on the moral sense of its members than upon an inefficient or unwise code which could not be enforced.

In general the same reasoning applies to the matter of the schedule of charges. That some modification is desirable is obvious to all. We cannot hope to have a schedule of charges that will fit with mathematical precision and equal justice all conditions, but we can have a schedule that shall form a starting-point—and that shall represent a reasonable minimum. It must be a business paper, simple, direct, and to the point. It must be self-evident, comprehensive, and devoid of argument; inconclusive statements, fugitive suggestions, or elusive phraseology have no place in such a document. It must be a basic minimum statement leaving reasonable variations to local adjustments.

That the demands upon the architects both in professional service and in the cost thereof have enormously increased is a well-known fact. The schedule when adopted some forty years ago represented fair remuneration for that time, but it does not represent fair remuneration now.

On the subject of competitions there is much to say—and much that had better be left unsaid. Probably 90 per cent. of our professional difficulties have grown out of this one fruitful tree of discord. Let me point out, however, the economic side of the question.

The profession is expending vast energy and an enormous sum each year fruitlessly, foolishly, blindly, in maintaining this wasteful system. It has been impossible to obtain data, or to form anything like an adequate estimate of the cost. We do know, however, of specific instances which may be quoted as examples. Let me quote only one as typical. The Government established a competition within the last year wherein some 130 competitors took part, expending, in addition to their own time and service, about $65,000. The fees paid to the prize-winners and to the expert advisers amounted to about $5,000; loss, $60,000. The total gross fee of the successful competitor estimated on a per-centum of the proposed cost of the building is about $12,500, and his net estimated profit from this fee about $4,500. Net loss to the profession about $55,000. And, in the end, I am credibly informed the jury's award was disregarded and even the plan finally selected had to be revised.

The Government refuses to receive from a building contractor any value not required by the contract, without paying for it, and yet—strange inconsistency—the laws or

Digitized by Google

customs are such that it does not hesitate to accept such value from us. The competition system has become so widespread that now it applies not only to Government buildings but to all other classes of buildings. I think it would not be too much to say that the architects in this country annually expend over $1,000,000 in competitions from which they receive no return. How long can the profession stand this drain? And this is not all—to foot up the total you must add the profits that should have accrued from time and money expended, the wasted time and effort, the neglect of other duties, the depressing, the disheartening disappointments, and the dissensions that ensue. If fault there be it lies in ourselves. The correction is in our power. The public is eager to understand and ready to accept the professional man's point of view of it—if that view is sane and consistent.

The public does not know, and cannot understand this great waste. It is well that we should understand it and take serious thought.

We have during the past year sought information as to the amount of money expended in building in the United States for a period of years. Inquiry has been made of the authorities of every city in the country of over 20,000 inhabitants. We have asked like information from the Treasury Department and from the Census Bureau. We find that city records are not available in all cases, but have collected such information as they could give us. The Treasury Department reports are, of course, clear and comprehensive so far as works under its charge are concerned. The Census Bureau could give us no information at all.

With the development of the Institute come larger duties and a natural demand for a larger working capital. Our usefulness is constantly hampered for lack of funds. Our committees have to limit their work by the closest demands of economy and many useful projects must be neglected for this reason. The Institute should take a greater part in educational work, not only for students of architecture, but for students and apprentices in the lesser arts and in the trades. We could do most valuable work for the world if we could have under our supervision art guilds and trade schools; if we could direct the work of the young mechanic or artisan who labours in the building trades. Give him a knowledge of his art, inspire him to its finer development, and you make him a better artisan and a better citizen. Under the patronage of the Institute, lectures, exhibitions, circulating libraries, scholarships, and the like should be established. The Institute should take an active part in research and archæology, in library and museum work, and in many other forms of development from which all the people as well as ourselves would derive benefit. But all this means the expenditure of a great sum of money annually. It means an endowment, and a large one; an endowment of which we would be only the trustees, not the beneficiaries. We cannot look for such an endowment with a selfish end in view, and its acquisition would increase, not lessen, our labours and responsibilities.

In maintaining our place in the professional world, we must not forget that it is the student of to-day who is the practitioner of to-morrow. We should therefore act helpfully toward the younger men. Share with them our successes, give them their chance as we have had ours, and foster their reasonable ambitions for professional opportunity and success. So win their confidence by generous and helpful acts that they will naturally seek your counsel and be guided by your experience. They will richly repay you by loyal support of those principles and ideals for which you stand. When you receive a young student into your offices bear in mind that it is your duty to him and to all concerned to see to it that he is fit for the future work of an architect. If you cannot teach him yourself, put him under charge of someone who can.

Give to all the largest opportunity consistent with their ability, but carefully select those who are best fitted by natural inclination, and advise the others to seek another occupation. Encourage those who give promise of fitness, but reject the inefficient, the indolent, or the incompetent. And so build up a strong body of practitioners who can be useful to themselves and to the world. To this end, then, I recommend such action by the Convention as will foster and encourage the educational side of our work both in the matter of ethics and design. If this can wisely be accomplished by a closer affiliation with the other societies, or by establishing a junior grade or grade of aspirants within our own Institute, let us so proceed.

I suggest a closer union of our chapters and a system of correspondence between them. Topics of discussion, such as the arts and the laws and theories of practice, might be arranged in series, so that there would be concentration of effort. If the members of the Institute think and work along the same lines they will act as a unit. They will each develop the other. "As one lamp lighteth another and groweth not less, so nobleness enkindles nobleness."

But, above all, remember that we are engaged in a great creative art and that in the last analysis we stand or fall by our success as creative artists. Let us cultivate, then, that finer side of our lives and maintain those high ideals which have ever made our profession the recorder of the world's progress, the conservator of its rarest treasures, and the creator of its noblest monuments.

At the end you may say with Stevenson, 'I *know* what pleasure is, for I have done good work.'"

Speech by Mr. Bryce.

At the banquet given in connexion with the proceedings, Mr. J. Bryce, Ambassador from Great Britain, delivered the following speech in reply to the toast of "The King." After some preliminary remarks he said:—"It is a great pleasure to be, gentlemen, the guest of the American Institute of Architects. I have always—as a humble layman, not understanding the splendid art of which you are votaries, but esteeming its results—greatly admired your profession, and have thought it must be one of the most agreeable professions to belong to that a man could enter. There is, of course, one drawback connected with it—that vexation which an architect must experience when his beautiful designs for a noble building, grand in its lines and fine in its ornament, are frustrated by the deficient imagination and sordid ideas of the person for whom the building is erected, and who prefers internal comfort to external beauty. That must be, and no doubt is, a great drawback. But, after all, all professions have their drawbacks.

[Mr. Bryce then referred to drawbacks in other professions.]

You, gentlemen (I am reminded of this by my reference to legislation and the unprofitable character of a great deal of the political work we do), have one great satisfaction, which belongs to you as compared with all those other professions I have been thinking of, namely, you do attain a tangible result. You produce something. There is the building. It stands there for the world to look at, and for yourself to admire. It stands; it continues to serve some useful purposes; it is there as something definitely attained and effected; and if after some fifty or sixty years the inadequate construction causes it perchance to fall, by that time it will be forgotten who was the architect, and as for yourself, you will not mind any criticism, if it reaches you, because you will be elsewhere, and will no doubt be enjoying a happiness sufficient to make you entirely indifferent to criticism.

So I come back to this conclusion—that you have, on the whole, a very happy profession; and you ought to think yourselves much better off than most of the votaries of the other learned professions are. And it seems to me you have one great advantage, too—you are following a profession, all the study of which, conducted in examining the great works that have been done before our own time, is in itself thoroughly profitable and delightful.

Now, I cannot honestly say that the whole of the study of the law is enjoyable at all; much of it is artificial; it is written in one way. The statute may give a particular direction, but it might have given any other; there is not necessarily much principle or reason in this matter. But those of you who study your art; those of you who know what has been done by the great architects of former times, and especially those of you—and I suppose this covers most—who pursue the study by examining the noble buildings which have been created by the genius of earlier times in Europe and Western Asia, you have daily an undiluted pleasure in your study. I can remember no happier days than I have spent, and I am sure they would have been even happier had I had the special technical knowledge which you possess, in examining old churches and old castles and old city walls and palaces, especially in the cities of Italy. One can think of no greater or higher pleasure than in seeing what man has done in the pursuit of beauty and convenience than is to be found in following the progress of architecture, from the XIth down to the XVIIIth century, as one sees it in France, Italy, Germany, and England. To this I may add that your art has a special claim upon the student, because it is more than any other art the interpreter and the sister of history. There is nothing that helps so much to a comprehension of history as the study of the buildings of a country. In them you see what the needs of the day were, what the thoughts and ideas of the time were, what its aims were; you see exactly what it sought in the way of defence and in the way of comfort; you see what form of interior structure its religion prescribed for houses of worship; you see by tracing the type of buildings in each particular province or district of a country what were the political influences that operated upon that district at that time; and you are able, in a word, to read out of the buildings of a country much of its history which otherwise might remain unknown. I do not believe that there is anything which could be better done for a student of history than to send him on an architectural tour, and make him interpret the buildings into the history and interpret the history through the buildings.

When one thinks of all the exquisite buildings which adorn such a country as Italy or France, one has to remember that they represent the accumulated ingenuity and talent and labour and taste of many generations of men. None of these generations of men ever had such an opportunity as the architects of the last sixty years have enjoyed. It is true that the architects of the last sixty years, in some ways, have not had quite so free a field, because they have been perhaps more hampered by committees, trustees, and municipal councils and other authorities that cannot realise, as did Lorenzo the Magnificent or some equally large-minded prince, that the great architect ought to have *carte blanche* for the building he has planned. But, apart from that, you have had in this country, and in Western Europe also, extraordinary opportunities during the last sixty years. Never, I suppose, was there a time when so many buildings and so many great buildings were erected. I am sorry that in England we have used our opportunities in one respect rather badly. We have committed a crime which you here could not commit—I hope you would not have committed it; but, at any rate, you could not. We have been restoring our ancient churches, sometimes out of recognition, and in that way we have unfortunately obliterated a great deal of the history that was written

Digitized by Google

in those churches. Within the last twenty-five years, largely owing to the influence of an enlightened band of scholars and artists, the most conspicuous of whom was William Morris, we have stopped that process as far as possible, but not until a great deal of harm had been done. Here you have not had so many ancient buildings to injure; anyhow, you have not injured to anything like the extent we have done. I was, however, about to say that in England we have not made full use of the great opportunities for original genius in architecture which this immense quantity of buildings provided. We have not succeeded there in getting hold of anything like a distinctive style. When we look back upon every century from this to the beginnings of the Romanesque in the Xth or XIth century, we see that almost every century, almost every half-century, has something distinctive in the style of its time; but if we look in the XIXth century—the same thing is generally true if we go into France and Germany also—we see a motley array of different styles, attempts made to build sometimes in one and sometimes in another style, and to combine them, and we cannot feel that the result is worthy of the amount of knowledge that has been brought to the work and the amount of money that has been spent upon it.

Here in the United States you seem to me to have made one new departure in which you have gone ahead of us Europeans. Your designs for houses in cities, and perhaps even more for suburban houses and seaside houses, etc., have more variety, more freshness, more charm than the parallel designs have in Western Europe. You have certainly made more use of some of the early mediæval forms of architecture than we have succeeded in doing in England, and in that respect I think your recent architecture shows more originality than ours does. But, still, even here I suppose you would agree that you have not succeeded yet in either inventing an absolutely new style, which perhaps may be impossible—after all, the possibilities of invention are limited—or in so combining different styles as to make one which shall be distinctive of the XIXth or XXth century. Now, that is just what we laymen and especially we students of history are longing for. Three or four hundred years hence, when the student of architecture turns back to the preceding centuries he will find, as he comes down from the XIth to the XVIIIth, that there is a regular succession, and that he can fix a building pretty well by its general style and structure, and its mouldings and its ornaments, and so forth; but when he comes to the XIXth century he would be at a loss. Now, is not the time about due when you must be beginning to do something desperate? This proposition is a very presumptuous question for a layman to put, but I put it only as an ignorant layman's question, and it may be that that thing cannot be done; but I feel, projecting myself into the position of the historian of the XXVth century, that it would be an interesting thing for him to be able to realise what the XXth century was like by its buildings as he realises what the XIIIth, XIVth, and XVth were. Certainly there is still, in this country at any rate, a great field open for him. I know your wealth, your growth of population, your boldness and grandeur of conception far exceed those that we have in England. I have seen magnificent plans for the decoration of Washington; I have seen a magnificent plan for the rebuilding of a new Chicago out in the lake, which we in England, or indeed anywhere in Europe, would not be able to consider on the score of expense; but expense to you has no terrors. I won't say that there is nothing that Congress won't do for Washington, because I am told that Congress does not hesitate to do things that are desired for Washington; but I know that there is nothing that Chicago fears to do for Chicago, and I dare say that is true of many other cities also. So when I see the gigantic things that are being attempted in New York and Chicago I feel that there is no great enterprise to be attempted in such cities from which its large-minded and liberal citizens will recoil from on the score of cost. I congratulate you, therefore, gentlemen, not only on the profession to which you belong, but on the great opportunities which are open to you. We shall watch you from our side of the Atlantic without any jealousy of your superior wealth, but with admiration of your energy and with high hopes of what you will achieve."

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ACCRINGTON.—St. James's Church. Messrs. Grimshaw & Concliffe, architects, Accrington.

Alexandra Park.—School. Messrs. Rodway & Dunning, Orchard-street, Bristol.

Bloxwich.—Alterations to music-hall (467*l.*). Messrs. J. & F. Wootton, builders, Pinfold, Bloxwich, Walsall.

Blyth.—Banking premises, Mr. J. H. Morton, architect, King-street, South Shields; manse, Waterloo-road (1,200*l.*), Mr. J. Goulding, architect, Blyth, Messrs. J. & E. Simpson, builders.

Bodmin.—Hospital. Mr. M. B. Collins, architect, Churton-road, Redruth.

Brockenhurst.—School. Mr. W. J. Taylor, architect, Castle, Winchester.

Broomsgrove.—Secondary school. Mr. G. H. Gadd, architect, Broomsgrove.

Brownhills.—Church. Messrs. Jones & Jackson, architects, Hanley; Mr. W. Sherratt, builder, Smallthorne.

Burnley.—Hippodrome. Messrs. Watson, Ladlow, & Rees, architects, Burnley.

Calstock.—Church (1,500*l.*). Mr. N. Ros-Kilby, builder, Albashon.

Chatham.—The Town Council has passed the following plans:—Additions to Royal Sailors' Home, near Town Hall; eight houses, Hartington-street, Messrs. Treeby & Ginn.

Chipping Camden.—Additions, school. Mr. R. S. Phillips, architect, Bank-chambers, Gloucester.

Cliffe (Kent).—School (eighty places). Mr. F. W. Crook, Secretary, Kent Education Committee, Caxton House, Westminster, S.W.

Dorchester.—School. Messrs. Fletcher & Brett, architects, Shire Hall, Dorchester.

Eastbourne.—The Town Council has passed the following plans:—Extension of warehouse, Pevensey-road, Mr. F. G. Cooke, architect; motor-house at "Hanmer Lea," Prideaux-road, Mr. R. W. Hamblyn, architect; pair of houses, Milton-road, Mr. A. V. McCann, builder; addition to "Trevin Towers," Gaudick-road, also two shops, South-street, Mr. P. D. Stonham, architect.

East Cowton.—Church. Mr. Eccles, architect, Liverpool; Mr. T. Boyd, builder, Darlington.

Frome.—Shops, Market-street. Mr. P. Rigg, architect, 3, Cork-street, Frome.

Gorton.—Church. Mr. A. E. Lambert, architect, Park-row, Nottingham; Messrs. Burgess & Galt, builders, Manchester.

Grimsby.—Adaptation of Spring Church and schools into departments for Borough Engineer and Treasurer. Borough Engineer, Grimsby Town Council.

Hartshill.—Drill-hall (2,500*l.*). Mr. W. Cowleshaw, architect, Hanley.

Hones.—Additions, Hanchurch. Mr. J. Brealey, architect, Prudential Buildings, Hanley.

Hove.—The Town Council has passed the following plans:—Conversion of premises, Church-road, into shops and flats, also alterations to Princes Hotel, Queen's-gardens, Mr. J. H. Hackman; conversion of premises, Cambridge-road, into flats, Messrs. Albery & Lawrence; conversion of Medina and Hova villas into five maisonettes, Mr. A. H. Lainson.

Kettering.—Sunday-school (3,000*l.*). Mr. O. P. Drever, builder.

Kinson.—School. Mr. W. J. Fletcher, architect, Wimborne.

Leek.—Drill-hall (3,000*l.*). Mr. W. Cowleshaw, architect, Hanley; school (4,700*l.*), Mr. J. Hutchings, architect, County Hall, Stafford.

Leigh (Lancs).—Mill. Messrs. Bradshaw & Gass, architects, Bolton.

Longton.—Electricity-station. Mr. W. Langford, architect, Longton.

Lowestoft.—The Town Council has passed the following plans:—Three houses, Carlton-road, Mr. C. Critoph; three shops and showroom, London-road North, Mr. F. J. Smith.

Newton-in-Makerfield (Lancs).—Hospital. Mr. A. Bowes, Surveyor, Newton-in-Makerfield Urban District Council.

North Perrott.—Additions to St. Martin's Church. Mr. W. D. Caröe, architect, 3, Great College-street, London, S.W.

Oxshott (Surrey).—Adaptation of "Bevendean" into Home of Recovery for Surgical Convalescents. Mr. E. F. Schiff, Warnford-court, E.C. (donor of 100,000*l.*).

Paisley.—Extensions to works of Messrs. Doneton, Ltd.; soap factory for Messrs. Isdaile & McCallum; saw mill, Messrs. J. Young & Son.

Quinton (Birmingham).—Parish hall. Mr. E. D. Hoyland, architect, 2, Walbrook, E.C.

Ranelegh (Dublin).—Church. Messrs. W. H. Byrne & Son, architects, Suffolk-street, Dublin.

Rotherham.—The Town Council has passed the following plans:—School at Kimberworth, Secretary, Education Committee, Rotherham; four houses, St. Stephen's-road, Messrs. Armstrong & Wortley; pair semi-detached houses, St. Leonard's-road, Mr. Townend; tower and spire on St. Stephen's Church, Colonel C. J. Stoddart; alterations and additions to premises, Effingham-street, for the Masbro' Equitable Pioneers' Society, Ltd.; eighteen houses and house and shop, Ewers-road, Messrs. Gray & Sons.

Salford.—School, Robert Hill-street. Secretary, Education Committee, Town Hall, Salford.

Settle.—Steam laundry. Mr. J. S. Metcalf.

Stoke.—Sunday-school. Mr. E. G. Wildin, architect; Mr. J. Boston, builder.

Stretford.—The Town Council has passed the following plans:—Three houses, Chatham-road, Mrs. J. Ramsden; four houses, Chatham-road, Messrs. J. Hall & Co.; thirty-nine houses, Norton-street, etc., Mr. J. H. Ratcliff.

Sunbury.—Development of new estate in French-street. Messrs. Hickson, Moir, & Jeakes, solicitors, Blomfield House, E.C.

Sutton Valence (Kent).—School (200 places). Mr. F. W. Crook, Secretary, Kent Education Committee, Caxton House, Westminster, S.W.

Thornton-le-Fens.—Church. Mr. F. Peck, architect, Boston, Lincs.

Torquay.—The Town Council has passed the following plans:—Ten houses, Windermere-road, Mr. Brock; five houses, Westhill-road, Mr. A. J. Sampson; palace of varieties, rear of Market-street, Mr. E. Crosland; eight houses, Empire-road, Upton, Mr. J. Blatchford.

Tredworth.—School. Messrs. Medland & Pryer, architects, 15, Clarence-street, Gloucester.

Wallington.—Church, Park Hill-road, for Rev. G. F. Irwin.

Walsall.—The Town Council has passed the following plans:—Alterations to premises, High-street, for the Masonic Lodge Syndicate of Walsall; four houses, Bank-street, Mr. G. Whitehouse; additions to premises, Pool-street, Messrs. A. T. Price & Co.; drill-hall, Messrs. Hickton & Farmer, architects, Bridge-street, Walsall.

Warrington.—The Town Council has passed the following plans:—Twenty houses off Reynolds-street, for Mr. A. Griffiths; alterations to warehouse, Rylands-street, Mr. J. Griffiths.

Wednesfield.—Church school. Mr. A. Griffiths, builder, Wednesfield.

Wigan.—The Town Council has passed the following plans:—Sixteen houses, Little-lane, Mr. William Liptrot; dressing-rooms at Central Park, Hilton-street, for the Wigan Rugby Football Club; three houses, Chatham-street, Mr. Thomas Taylor; three houses, Brook-lane, Mr. William Charnock.

Worksop.—Additions, Worksop College (10,000*l.*). Sir Aston Webb, architect, 18, Queen Anne's-gate, S.W.

THE LONDON MASTER BUILDERS' ASSOCIATION.

THE following meetings of the London Master Builders' Association have been held since the June report:—

A special Council meeting was held on July 8, for the purpose of considering matters relating to the land taxation clauses in the Finance Bill before Parliament. After approving the Emergency Committee's report, the subject was widely discussed, and the following gentlemen were elected to represent this Association at the forthcoming conference:—Mr. F. G. Rice (President), Colonel G. Haward Trollope, Mr. Joseph Randall, and Mr. H. W. Hornor.

The Organisation Committee met on July 29, and a report was submitted orally by the Chairman (Mr. F. Higgs), and instructions were given to send out a statement of the recommendations with the notices convening the Council meeting.

The ordinary Council meeting, on July 29, received and approved the Committees' reports and endorsed the views expressed by its representatives at the late Portsmouth half-yearly meeting of the National Federation, that, taking into consideration the satisfactory results of the operation of the agreement between this

Digitized by Google

Association and the operative plasterers of London, the new National Association of Operative Plasterers' general rules should not supersede the working rule agreement already existing between these two bodies.

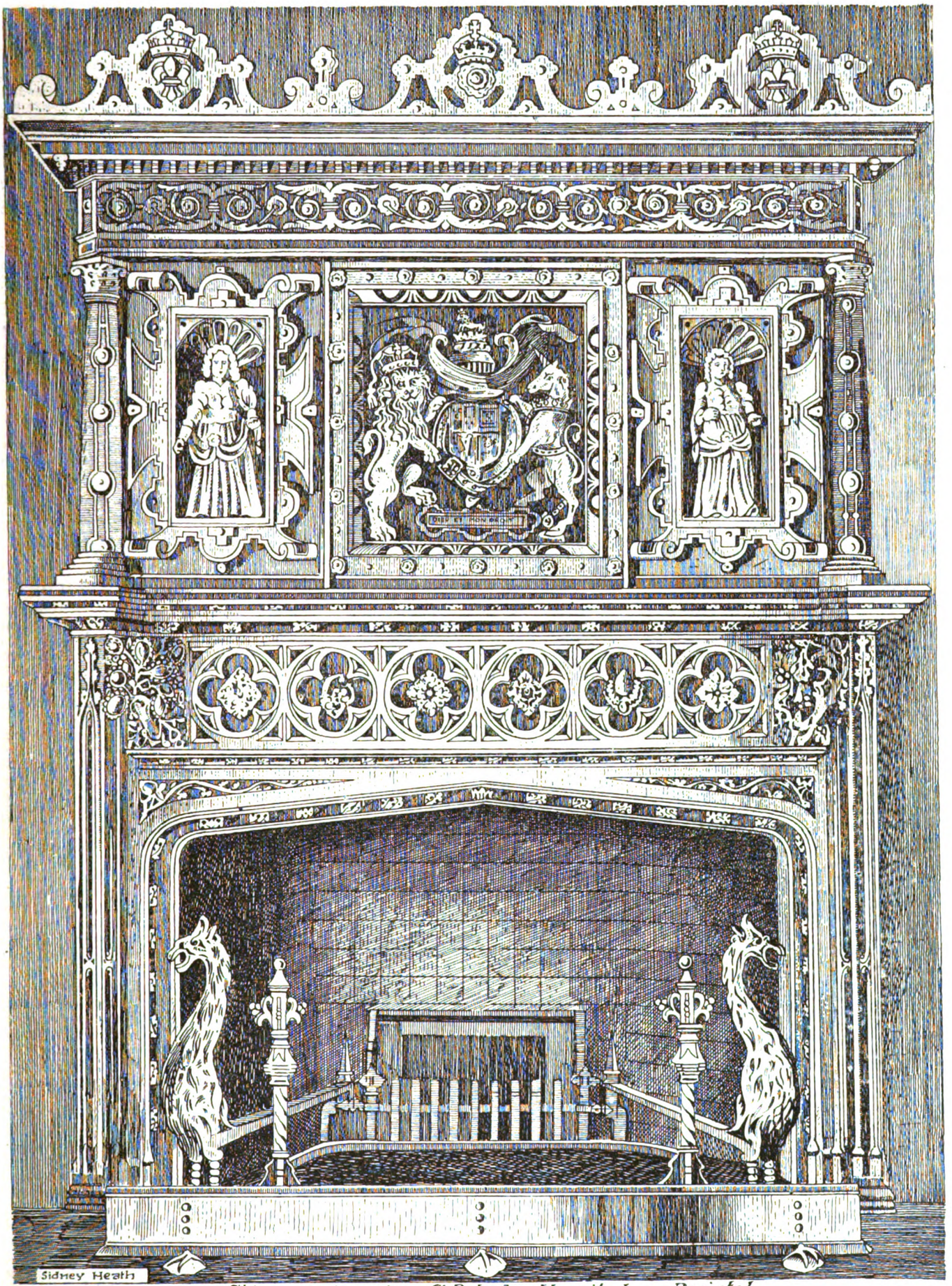
The Council then elected Mr. E. A. Hough a member of the London Master Builders' Association, and gave instructions to the solicitor to investigate and report upon the particulars of the case in which an appeal was made against the decision of an arbitrator.

From a feeling of international courtesy, and because of the warmth of hospitality extended to British builders by them last year, the Council gladly decided to invite the party of Belgian masters builders, who are now visiting London, to dinner at St. Ermin's Hotel, Victoria-street, Westminster, on Thursday, August 12, of which the members of the Association were duly advised.

Among the correspondence was a letter from the President of the Royal Institute of British Architects to Mr. J. Carmichael, congratulating him upon the evidence he gave in connexion with the London County Council (General Powers) Bill, 1909. The Council had much pleasure in learning the fact, and added its high approval and appreciation of Mr. Carmichael's action.

CHIMNEY-PIECE IN ST. PETER'S HOSPITAL, BRISTOL.

THIS elaborate chimney-piece forms part of the notable Jacobean room of St. Peter's



Chimney-piece in St Peter's Hospital Bristol

Digitized by Google

Hospital, Bristol, of which an exterior sketch was given in the *Builder* of October 10, 1908. The accompanying illustration needs no lengthy description, but attention may be called to the curious and not inharmonious blending of late Gothic with Jacobean ornament. The whole of this fine apartment is co-eval in date—ceiling, panelling, and furniture, forming one of the finest Jacobean interiors to be found in the country.

SIDNEY HEATH.

LONDON AND DISTRICT BOROUGH COUNCILS.

Battersea.—Dr. G. Quin Lennane, the Medical Officer of Health for Battersea, says in his annual report that during 1908 thirteen sewer ventilating columns were erected, one by the London County Council for ventilating the London County Council's sewer in Nine Elms-lane. The remaining twelve were erected by the Borough Council. During the year complaints were fairly frequent as to the nuisance arising from sewer ventilators on the surface of the roadway. These complaints were in every case inquired into, and ventilating columns were erected to mitigate the nuisance in the localities which gave cause for complaint. During the past three years a good deal of attention has been devoted to the subject by the Health Committee, and in that period fifty-two ventilating shafts have been erected by the Council in various parts of the borough to ventilate the Borough Council's sewers. Notwithstanding these efforts of the Council to minimise the nuisance from sewer emanations, complaints continued to come in during the past year, and it is clear that while the steps which have already been taken have to some extent improved the conditions of the ventilation in the sewers, something further will have to be done to prevent this kind of nuisance from periodically arising. The use of upcast shafts can, in the opinion of the Medical Officer, at best prove but a palliative, and of themselves are quite incapable of fulfilling the object for which they are, at considerable cost, erected.

Hendon.—The following plans have been passed:—Three pairs of houses, Harrow View, for the London Ground Rent Company; Baptist church, Paines-lane, Pinner, for the trustees, per Messrs. Spalding, Spalding, & Myers. A plan was lodged by Mr. H. Tann, jun., for six houses in Bolton-road, Pinner.

Hornsey.—Paving works are to be carried out in Great North-road, and North-hill, Highgate, at a cost of 700*l.* Tenders are to be invited for making up seven roads. The following plans have been lodged:—Mr. J. C. Hill, three blocks of maisonettes in Rathcoole-gardens, and seven blocks of maisonettes in Uplands-road; Mr. N. W. Cansick, Kentish Town, N.W., two houses, Cholmeley, Highgate; Messrs. Eyles, Lewis, & Co., Gresham-street, four houses, Connaught-gardens; Mr. F. Endell Rosser, Ilford, houses in Coleridge-road, Crouch End; Mr. J. W. Abraham, two houses, Springfield-avenue, Muswell-hill.

Westminster.—Dr. F. J. Allan, Medical Officer of Health, in his annual report, which has just been issued, says that 572 sets of drainage plans were examined during 1908; 455 of these resulted from notices served by the Public Health Department, and 117 were plans of new buildings or reconstructions. Failure to send in plans as required by law occurred in eleven instances. Infringement of the by-laws in connexion with the erection of buildings occurred in eight instances; 1,156 tests were applied to 1,121 drains, soil-pipes, etc., during the year, of which 410, with smoke or water, were carried out under the supervision of the sanitary inspectors by the men of the disinfecting staff. The routine is to test a drain first by means of chemicals, and, if necessary, subsequently with smoke, air, or water. After reconstruction drains below ground are tested with water, pipes above ground with smoke or air. The number of each test employed were:—Chemical, 462; water, 391; smoke, 274; air, 29.

Wimbledon.—At the meeting of the Town Council on August 5, the sub-committee appointed to consider the question of providing a new town hall or municipal offices submitted the following recommendations:—(1) That no attempt be made to extend the present offices in the Boardway, but that new municipal offices be provided; (2) that the sub-committee be authorised to ascertain and report (*a*) what sites in the borough are suitable for municipal offices, (*b*) at what price a suitable site can be acquired, and (*c*) the probable amount realisable from a sale of the Broadway site; (3) that the consideration of the question of providing or not providing a public hall be deferred for the present. The recommendations were carried. The consideration of a tree-planting scheme, to cost 2,895*l.*, was postponed. The following plans were passed:—Messrs. Goepel & Hazell, six houses, also four pairs of semi-detached houses, Coombe-lane; Messrs. Whitehead Brothers, dental laboratory, Lingfield-road; Mr. J. Rickards, two houses, Vineyard Hill-road; Mr. S. H. Burdwood, shop, Strathearn-road. The following plans have been lodged:—Messrs. Ryan & Penfold, forty-nine houses, Farquhar-road, Strathmore-road, The Crescent, and Crescent-gardens, also fourteen houses and shops, Arthur-road; Mr. C. W. Maplesden, additions to Christ Church, Alwyne-road.

Competition News.

NEW PUBLIC BUILDINGS, BURSLEM.

The award in this important competition has now been made. The design of Messrs. Russell & Cooper, 11, Gray's-inn-square, W.C., has been placed first. The second place has been awarded to Mr. E. Montague Thomas, 5, Queen Anne's-gate, S.W.; Messrs. Warwick & Hall, 13, South-square, Gray's-inn, W.C., have obtained the third place. Premiums of 100*l.* and 50*l.* were offered for the designs placed second and third respectively.

TRAINING COLLEGE AT HULL.

The Hull Education Committee, at their meeting on July 29, had a report by a special sub-committee which had been appointed to deal with matters raised in a letter from the assessor of the designs for the training college. The premiums agreed to be paid were 150*l.* for the design placed first, 100*l.* for the second, and 50*l.* for the third, the first premium to merge in the architect's commission. The question of foundations and one or two technical matters were left to the assessor and the City Architect to settle. The assessor suggested one dining-room for both males and females, and this was agreed to. The Secretary, Dr. Riley, reported that the assessor had made a rough estimate of the cost of the proposed buildings at 31,000*l.* The assessor suggested that the Committee should permit the exhibition of the designs to the public after the award was made; also that no person beyond officials employed in the hanging be allowed to see the designs until the award was made, and that the Committee should refrain from inspecting the designs until the award was made. The sub-committee recommended the adoption of the various recommendations and suggestions made above. Colonel Easton said that if the college cost 31,000*l.* as estimated by the assessor, that would be 6,000*l.* or 7,000*l.* more than they expected. The 31,000*l.* was only a rough estimate, and it might be considerably in excess of that. He thought they ought to inform the assessor and the architect that they wished for a building, the cost of which was not to exceed a certain sum. He moved that the limit be 25,000*l.* The minutes were adopted.

INTERNATIONAL COMPETITION FOR EARTHQUAKE-PROOF HOUSES.

The jury in this competition appointed by the Lombard Co-operative Society for Public Works have not awarded the 1st premium of 3,000 lire, as they did not consider that any one of the 214 designs (fifty submitted by foreigners) entirely met the conditions of the programme. However, the premium of 2,000 lire was awarded to the engineer A. Damusso, of Turin, and 1,000 lire to Messrs. V. Gianfranceschi & G. Revere, of Milan. The medals offered by the Board of Public Works were bestowed on Dr. F. von Emperger, of Vienna, on Messrs. A. Susiuno & E. Bachetti, of Rome, and on M. E. Cuignet, of Paris.

HIGHER STANDARD SCHOOL AT ROTHERHAM.

The Building Sub-Committee of Rotherham Education Committee reported having received a letter from the Board of Education requesting early submission of plans for the proposed upper standard school at Kimberworth. The Sub-Committee recommended:—(1) the erection of an upper standard school, on the site acquired, to accommodate 300 boys and 300 girls, to be proceeded with at once; (2) that a new infants' school, to accommodate 500 children, be also erected on the site; (3) that the Director be instructed to prepare the necessary instructions to architects; and (4) that an invitation be issued to architects practising in Rotherham to submit competitive designs for the erection of such schools. The recommendations were referred back by the Committee, with instructions to substitute the word "school" for "schools" in recommendation 4.

GRIMSBY TOWN HALL SCHEME.

At the meeting of the Grimsby Finance Committee on the 4th inst., the Borough Engineer, Mr. H. Gilbert Whyatt, reported that 104 architects had applied for particulars with regard to the town hall extension scheme. Of these forty-five had returned the papers, and had had their deposits refunded, while fifty architects had sent in fifty-one sets of plans for the competition. The Mayor explained that the Town Council, in order to get on with the competition, appointed Sir W. Alfred Gelder, F.R.I.B.A., of Hull, as assessor, but at a subsequent meeting the Council refused to confirm that appointment. In his (the Mayor's) opinion they would have to pay Sir Alfred Gelder's fees whether he adjudicated upon the plans or not. Some fifty architects had entered the competition under the impression that Sir Alfred would be the judge, and he personally felt that the Corporation should fulfil the agreement. Mr. Best submitted that Sir Alfred's "appointment" was "subject to confirmation," and as it was not confirmed there was no real appointment. Mr. Eason moved that the plans be not sent to Sir Alfred Gelder on the ground that a majority of the Town Council was now opposed to the extension scheme, and that the scheme would not go on. Alderman Cross said that he was sure Sir Alfred Gelder was appointed legally, and as the Committee would have to pay him they might as well have the benefit of his services. In closing the debate the Mayor made a strong appeal to the Committee to behave in a seemly and dignified way. Some fifty architects had devoted hours of labour in preparing schemes on the understanding that they were competing for the premiums which the Council had advertised. The Council would make itself the laughing-stock of the country if it did not go on with the competition, while it would be grossly betraying the architects. Upon a vote being taken the Committee decided, by twelve votes to nine, to send the plans for adjudication to Sir Alfred Gelder.

BOOKS RECEIVED.

ON THE MAKING OF GARDENS. By Sir G. Sitwell, Bart. Pp. 103. (London: John Murray. 5s. net.)

FIRE TESTS WITH DOORS. Pp. 40. (The British Fire Prevention Committee.)

Correspondence.

THE BUDGET AND BUILDING.

SIR,—In reply to your correspondent "Interested," we can give "the ordinary man in the building trades" some of the reasons why the Budget is likely to discourage building. In the first place, a person building by contract is usually a capitalist, and under the present Finance Bill he has to make arrangements to meet the increased income tax, super-tax, and the increased death duties, while if he be a landowner he has in addition to pay the new taxes on the land. Much building work has in the past been provided by the licensed trade, which now only undertakes such work as is absolutely necessary, as it has to provide funds for the enormous increase in the licence duties.

The speculative builder is usually enabled to build by means of mortgages, and if your correspondent had made a few inquiries he would have found that not only is it almost an impossibility to obtain a mortgage, but that many existing mortgages are being recalled. The speculative builder is frequently financed by the freeholder, or is the freeholder himself, and the impending legislation, coupled with the proposed increased stamp duties, will deter the transfer of property, and will also increase ground-rents to cover the additional taxation. "Interested" should refer to your leading article of May 22, 1909, and to page 34 of the *Builder* for July 10, 1909, for a clear exposition of the effects of the proposed taxation of land upon the building trade.

In conclusion, as the whole programme of the present Government has tended to unsettle all classes of investments, it is more than likely that an investor will not sink his money in bricks and mortar which are not easily realisable, always form a somewhat speculative investment, and stand on ground at the value of which the Budget is directly aimed, while, as you have very properly stated, "land without capital is useless."

LOVEGROVE & PAPWORTH.

Digitized by Google

RE LAND TAXES.

SIR,—The popular idea of the Land Tax Bill is that it is sought to tap the unearned increment of landowners which has accrued through the extension of towns; but there are many who are interested in property, and, in particular, the owners of small property, who do not realise that every yard of land, whether vacant or covered by buildings, comes within the Act, and is liable to increment duty to the extent of 20 per cent. of any increase in the site value between April 30, 1909, and the date when any of the following events take place:—(1) A sale; (2) a lease for more than seven years; and (3) death. The result, therefore, is that on every sale, whether it be cottages, shops, offices, buildings, factories, vacant land, or agricultural land worth more than 50*l.* an acre, the value of the site will have to be gone into; and if in the opinion of the Commissioners it has increased in value after the date named, one-fifth of the increase will have to be paid as a tax.

The site value, according to clause 14, is to be the amount which the fee simple would realise in the open market if the land were divested of buildings; but once modern buildings are erected they and the land are welded together and form a commercial commodity to be valued on their rent-producing capacity. To take, for instance, cottages or shops, and say that the site has increased in value because of its adaptability for some other purpose, or proximity to some new works, is theoretical when such site is already covered with modern bricks and mortar; but for the purpose of arriving at this 20 per cent. tax the Government are going to treat land covered by buildings on the basis that if the Commissioners decide that the site will produce more if adapted for some other purpose, the owner must pay 20 per cent. of such increase. He cannot remove his existing buildings and utilise the land in accordance with the methods laid down by the Surveyors of Taxes, in order to produce what they say is its proper value; and anything more likely to cause confusion and dislocation in the property market it is difficult to conceive. The cases of obsolete buildings waiting for demolition on a valuable plot of land are so few that they bear no relation whatever to the proposal to value and tax the sites of all the modern buildings in the country apart from the land.

According to the speeches of the supporters of the Bill one would imagine there was a shortage of dwellings in this country; but what are the facts as regards, for instance, Liverpool and Birkenhead? On June 30 last the uninhabited property in Birkenhead numbered 1,700 houses. In Liverpool for the same period there were 6,300 empty dwellings, and the same tale of empty property can be told in most large towns; and yet we are told land is being held up, and this selfsame empty property has to pay 20 per cent. of any increase in the site value after this year, with all the expense to the property owners attendant on arriving at such value. Mr. Lloyd George at the same time tells us that any garden over one acre is not fully developed, and Mr. Churchill says in his speech at Edinburgh on July 17:—

> "We see the imposture upon the public, and we see the consequences in crowded slums, in hampered commerce, in distorted or restricted development, and in congested centres of population; and we say here and now to the land monopolist who is holding up his land—This property of yours might be put to immediate use with general advantage; it is at this minute saleable in the market at ten times the value at which it is rated. If you choose to keep it idle in the expectation of still further unearned increment, then at least you shall be taxed at the true selling value in the meanwhile. . . . The effect will be to bring into the market, and thus somewhat cheapen the price at which it is attainable for every object. . . . We shall stimulate building, relieve overcrowding, and promote employment."

Comment is impossible on such fantastic statements.

With regard to agricultural land, this includes land where the capital value does not exceed 50*l.* an acre, or where it can be shown to the Commissioners that no part of the value is due to the capability of the land for use for building purposes, a point upon which it will be found very difficult to satisfy them; but despite the assurances of the Government that they are not going to tax agricultural land, what do their proposals indicate? They know that 50*l.* an acre does not cover the value of a very large proportion of the agricultural land in this country, and are quite alive to the fact that the words "capability of the land for building" leaves them with a free hand to do anything; and those who have had much to do with dealing with deceased estates which comprise land know how eagerly the Commissioners seek to fix any semblance of building value upon it. Therefore, although the Government pretend to say that agricultural land will escape, they know at the same time that a vast area will not, and will be taxed as undeveloped land on the difference between 50*l.* an acre and what the Commissioners say it is worth; and it also follows that that tax will find its way ultimately in some form or other on to the farmers' shoulders. Where and how are they going to draw the line between building land and agricultural land? And if the Government really intend to relieve land under cultivation from the tax, why do not they expressly exclude it? Otherwise, on the difference between 50*l.* an acre and what the Commissioners call "the value due to its capability for building," the undeveloped land tax of ½*d.* in the pound will have to be paid, and will, without doubt, be added on to the taxes already paid by the farmer.

As regards urban land there is no provision in the Act which allows the owner any interest on either the capital value or the money invested, nor is any allowance made if on part of a piece of building land there is a serious depreciation from causes in connexion with, say, the utilisation of adjoining land over which the owner has no control; but (according to the Chancellor of the Exchequer), in addition to the annual undeveloped land duty, 20 per cent. increment duty has to be paid on the part which has appreciated, but no set-off is allowed in respect of the portion which has depreciated in value.

The promoters of the Bill are very loud in their assertions that there is a constant increase in value of all urban land; but so far from this being correct it is a most misleading and inaccurate statement to make. If they could start from the prairie value in a new town it would be quite a different proposition; but in this country, where the statistics prove that there has been an enormous depreciation for many years past in the value of the land, and where the values in some districts go up and in others go down, it is preposterous to put such fairy tales before the public; and one can only assume that the gentlemen who make these statements have no practical experience of what they are pleased to call building land.

A great deal of capital is made of the fact that property in this country is already valued by the Commissioners for the purpose of duty on death, and it is rashly assumed that because that is so they are therefore capable of undertaking a bigger and much more extensive job in the same direction. I have had some experience in connexion with the payment of duties on death, and can give a number of cases where the Commissioners for Inland Revenue have put valuations upon property which are never realised on a sale, and I say, without hesitation, that there is a huge amount of duty paid in this country on an assumed capital value of property which is never seen by the owners.

It is, of course, obvious that the idea of the Government is to get at the big landowners, and one or two cases of large increments are dangled before the eyes of the public to make them believe that these are the rule, instead of being quite the exception; but, in any case, so far from hurting the big landowner, I prophesy that he will be able to turn the great bulk of this taxation on to the buyers of the land and on to his tenants, and Mr. Lloyd George will find that he is dislocating the property market and injuring the general body of small property owners (as well as hurting his countryman, the Welsh builder, who is a large owner of the equities of cottage property) more than he perhaps at present realises. Certainly a vast number of people who live on their equities are going to have their mortgages called in and be very hard hit, if not in actual taxation, then in expenses and law costs, to try and prove there is no increment duty payable on the sites of their houses.

With regard to the extra cost of conveyancing, the predominating feature of the Liberal party is "Free Trade," and they ought, therefore, to do everything to facilitate free trade in property, but instead of that are doing exactly the opposite. The present duty on transfer is 10*s.* per cent.; this is being raised to 1*l.* per cent., and they are, in addition, proposing to add enormously to the cost and trouble of conveying property—not land only—by requiring evidence of the value of the site under any buildings in order to assess their increment tax; and if this Act passes, it is not too much to say that the legal morass and bog into which property owners will be plunged will be so costly and so wearisome that it will seriously prejudice the trade in property.

As to Mr. Lloyd George's proposal to tax all gardens over an acre, under our present system the size of a garden about a house is taken into account in arriving at the assessment, and therefore the Government exact their toll upon it to-day in the shape of (1) property tax under schedule A; (2) house duty from 3*d.* to 9*d.* in the pound; and (3) land tax; but in addition to all this the Chancellor of the Exchequer seeks to impose an additional tax on any gardens which are more than an acre in extent.

Liverpool; August 5. W. BULLEN.

P.S.—The latest alteration in the increment tax is for the exemption of small houses in the occupation of the owner—in London 40*l.* annual value, and in the country, where the population exceeds 50,000, 26*l.* a year, in all other cases 16*l.* a year. There is also an exemption for agricultural land in the occupation of the owner which does not exceed 50 acres or 50*l.* annual value. In all these cases the exemption only applies to the site of a dwelling-house where immediately before the occasion on which the duty is to be collected the house was, and for twelve months previously, used by the owner as his residence.

*** Our correspondent is a solicitor practising in Liverpool. A portion of his letter, suggesting other sources of taxation, we have omitted as being too political for our pages; but his analysis of the effect of the proposed legislation on house property may be of value to owners of building property or building sites.—ED.

LONDON COUNTY COUNCIL GENERAL POWERS BILL.

SIR,—In connexion with your article of the 7th inst., may I draw attention to one among the many difficulties that will arise under the new Act?

The steel used in skeleton frames will have to be in accordance with the British standard.

It is well known that the results of tests of similar steel rolled to various sections are by no means uniform, and if rolled joist sections by any first-class British firm are tested, certain sections will often show an ultimate tensile strength slightly below the standard with which, in all other respects, they conform. As matters now stand, the architect is at liberty to use his judgment and accept this material, although the test may be in this one point a little below the standard. When the standard becomes absolute law he must, often against his common sense and good judgment, reject every piece that does not fully comply with it, thus causing needless delay and loss to his client for no reasonable purpose whatever.

With this difficulty will, of course, come those arising from disputes as to the precise methods of making the tests and as to the fairness of the methods of particular testing specialists. Questions of this sort have arisen in my own practice, and can scarcely be outside the experience of any architect who has had to deal with steel framework of any considerable size.

The plausible and obvious answer to these objections is, of course, that the makers must, as they certainly can, avoid making steel having a tensile strength very near to the lower limit of the standard, and doubtless this will be done, but the result will be an increased cost for no solid gain, and when by chance a batch of joists—excellent and quite fit for their intended duty—turn out in this one respect just below the standard, the client will have to suffer from the delay incurred through their useless rejection.

We shall, in consequence, soon find that, under the legal compulsion, we are getting harder and more brittle steel, with the minimum of ductility—obviously a change for the worse. MATT. GARBUTT.

SIR,—Referring to your leading article on this subject in the *Builder* of 7th inst., may I draw your attention to a curious omission in sects. 22 and 23, which determine the allowable loads on pillars? The loads appear to have been calculated according to the ordinary Gordon-Rankine formula used with a sliding factor of safety, and are considerably below the lowest limits of the Fiddler "breaking area" diagram. As such they are quite satisfactory for central loads, but nearly all loads—especially those on the outer columns of steel frame buildings—are more or less eccentric; and in practical design column dimensions are governed far more frequently by the necessity for keeping the maximum stress due to the resulting bending moments within safe limits than by safe central load.

To take an extreme case, as the Bill reads at present, there is nothing to prevent a heavy load 2 ft. or 3 ft. distant from the axis of a C.I. column being carried by a cantilever bracket cast on to the column. In fact, it might, and very probably will, be argued, if the Bill becomes law in its present form, that the sections give an implied statutory sanction to such a highly dangerous detail.

A short proviso stating that the stresses due to bending moment caused by eccentric loading shall not exceed the limiting stresses for materials detailed in sect. 24 might surely be inserted with advantage. It is difficult to contemplate without

Digitized by Google

painful apprehension the prospects of calculating roof loads according to the methods demanded by the Bill. The usual method, viz., ascertaining the actual structural load and compounding it with the normal component of wind pressure, presents no difficulty to any competent designer, but will now probably become illegal. The statutary method of calculation will enforce the same structural load whatever the construction of the roof may be, and will establish a legal inference that the wind acts on both sides of the roof at once.

To authorise incorrect rule-of-thumb methods of calculation by an Act of Parliament is bad enough; to insist upon them, when more correct methods are in common use, is quite unnecessary. PERCY J. WALDRAM.

ARCHITECTURAL COPYISM.

SIR,—Your extract from the *Builder* of fifty years ago, and republished in your issue of July 24, giving the case of architectural copyism at that time, brings to mind a recent competition, and it is to be hoped that either the establishment of architectural copyright or the Royal Institute of British Architects' future regulation for the conduct of competitions may deal with what I refer to also.

It was particularly required by the conditions of the said competition that the designs should be the work of a local architect, and, in face of that stipulation, the design placed first turned out to have been prepared by a London architect—an assistant of the assessor, I believe—and submitted by a local architect.

On disqualification, the next selected bore also unmistakable likeness to the assessor's own work, and by two published drawings I could send you sufficient to show—like your correspondent of fifty years ago—that if not a direct copy—that being impossible for buildings of varying uses and dimensions—by a manipulation of parts the author has produced a building (it cannot be called a design) that is more than a reminder of a design previously made by the assessor.

The author was soon afterwards publicly declaiming against architectural plagiarism!

The promoters did not get, therefore, what they asked for—the work of a local architect, but rather the work of a London architect (the assessor) locally translated. Until each competition is adjudged by more than one assessor this copying and the falling victim to flattery will continue, and architecture must suffer.

T. ROGERS KITSELL.

METHODS OF HEATING, ETC.

SIR,—The Institute of Heating and Ventilating Engineers held its annual meeting, a few weeks ago, in Manchester for the first time.

It was a favourable opportunity to visit our Free Trade Hall, and note the method of heating and ventilating in use there.

Amongst the papers read and discussed on various phases of the subject, it would have been interesting to have had some reference to this system, for, without reference thereto, no statements as to heating and ventilation can be considered complete.

The Free Trade Hall, 52 ft. high, and of a capacity of 500,000 cubic ft., is heated by Messrs. Constantine's convoluted stoves. The late Sir Charles Hallé said that it was the best hall in England for great concerts, and the question arises how far the comfort of the audience is due to the system of heating and ventilation.

Certainly a system of heating and ventilating that has been in use in this building for forty-one years without adverse criticisms—where the original stoves, after forty-one years of service, are still in actual use, the working cost of which is said to be less than half the cost of a former system which it displaced; which, because of its success, has been adopted in the Manchester Royal Exchange, a much larger building—seems to establish a claim that in any inquiry as to methods of heating and ventilating it should be included.

JOHN WYNNE.

Manchester.

*** We are very glad to print Mr. Wynne's letter; merely observing that Sir Charles Hallé's recommendation of the Free Trade Hall for concerts probably referred to its seating capacity and acoustic qualities combined, rather than to any question of heating and ventilation. Otherwise, the letter is quite to the point.—ED.

SLATING.

SIR,—One sometimes sees the slating at the hips of a high-pitched roof cut to a close mitre without a lead covering or flashing. Will you, or any of your readers, kindly tell me if soakers are necessary in such a case?

ZAX.

Obituary.

MR. OWEN.

The death on August 5, at his father-in-law, Sir Charles Scotter's, residence, Rutland House, Kingston-on-Thames, is announced of Mr. William Owen, aged 59 years, of Hale, and No. 134, Deansgate, and Duchy-chambers, Manchester. Mr. Owen was elected an Associate of the Royal Institute of British Architects in 1879. He was the architect of the cemetery chapel, etc., for the Altrincham Local Board, at Hale, for which his designs were chosen in a limited competition in 1893; for the enlargement and improvement of the Royal Victoria Station Hotel, Sheffield, 1901; of the Navigation-road Council schools, Altrincham, built for the Cheshire County Council in 1905-6 for 800 scholars, with separate departments for science and art, cookery, and manual instruction, at a cost of about 13,200*l.* for the fabric; the isolation hospital at Dunham Massey, for the Altrincham Urban District Council, his plans and designs having been accepted in a limited competition; and additions, embracing a new lecture-hall, five classrooms, vestries, etc., to the Baptist church in Hale-road, Altrincham. In last October Mr. Owen's designs were awarded the third premium for the Cheshire County Schools, for 900 scholars, in Beam-street, Nantwich.

MR. ARTHUR LEE.

We regret to announce the sudden death of Mr. Arthur Lee, which occurred at 37, Woodville-gardens, Ealing, W., on the 31st ult., at the age of 57. Mr. Lee was the managing director of Arthur Lee & Brothers, Ltd., marble merchants, of Bristol, and Hayes, Middlesex, and was well known and respected throughout the trade. An able writer and fluent speaker, his contributions to the annual meetings of the Associated Chambers of Commerce of the United Kingdom (where he represented the Bristol Chamber, of which he was President in 1901, for several years) were always received with attention. He acted as joint Hon. Secretary to the British Association for the Advancement of Science for the Bristol meeting (1898), and was one of the Vice-Presidents of the Economic Section at the Dover meeting of the following year. He was a justice of the peace for the city of Bristol, and a member of the City Council from 1899 until he came to reside in London, in 1903. In the latter connexion he took part in the Bristol Docks extension, and was greatly interested in the development of inland waterways. He was one of the witnesses selected to give evidence before the Royal Commission on Canals and Waterways in 1906. Mr. Lee was a firm believer in British craftsmanship, and in 1900 built and equipped a factory at Hayes, Middlesex, for the working of marble for decorative purposes on an extensive scale. The first work of importance carried through was the interior decoration of the new Sessions House, under the late E. W. Mountford. The marble for Mappin & Webb's new premises in Oxford-street (John Belcher, R.A.), was also worked at Hayes, as was that of the University College, Birmingham (Sir Aston Webb, R.A.), and several other important buildings. Mr. Lee was a frequent contributor to the trade papers, both in Great Britain and America, and he wrote "Marble and Marble Workers," a handbook published in 1889.

MR. H. WISE.

Mr. Harry Wise, the senior partner in the firm of Messrs. J. J. Wise, builders and contractors, of Deal, Walmer, and Winchester, has just passed away after one day's illness, at the age of 48. The business, which was established in 1790, will in future be carried on by the surviving partner, Mr. Arthur Wise, J.P., C.C., with head offices at Winchester and a branch office at Deal.

CONSISTORY COURT OF LONDON.—At a sitting of the Court in St. Paul's Cathedral on August 5, Dr. Tristram, K.C., Chancellor of the London Diocese, granted a faculty in respect of St. Mark's, Old-street, E.C., in approval of an agreement made with Sutton's trustees, as building owners, whereby the trustees pay 500*l.* to the vicar and churchwardens in compensation for an encroachment on the ancient lights due to the erection of new buildings at the west end of the church. The sum of 500*l.* will be applied towards the much-needed restoration, at a computed cost of nearly 1,900*l.*, of the fabric of the church. St. Mark's was built for 650 sittings in 1848 after designs, in the Transitional style, by B. Ferrey. Of Holy Trinity Church, some historical particulars were given lately in our columns.

General Building News.

ARBROATH ABBEY.

H.M. Board of Works had, last year, an important piece of work carried out at these ruins, namely, the thorough overhauling of the towers on the north side of the western gateway. It is now intended to perform a similar work on the towers on the south side of the gateway. For this purpose Mr. R. C. Farquhar, joiner, has received instructions to erect, as was done on the previous occasion, a gabbard scaffolding, and the erection of this scaffolding is in itself a somewhat delicate undertaking. The repairs upon the towers will be performed by Mr. Alex. Reid, builder, and the whole of the operations will be carried out under the superintendence of Mr. Hyslop, of the Board of Works.

NEW CHURCH, HELEN'S BAY, BELFAST.

The foundation-stone of a new church, to be known as St. John's, and which will be connected with Glencraig Parish Church, has been laid at Helen's Bay. The new church will, when it is completed, accommodate between 400 and 500 people. However, at present it is only proposed to proceed with the erection of the vestry, and to add a temporary apse for the choir. The exterior of the side walls and gables will be granite cut and polished, and the roof will be covered with Westmorland green slates, while wood blocks are to be employed for the flooring. The work is in the hands of Messrs. Courtney & Co., contractors, Belfast, and the architects are Messrs. Whitcombe & Cogswell, London.

MISSION CHURCH, BROOKWOOD.

The foundation-stone was recently laid of the new mission church of St. Saviour. The church has been designed by Mr. J. Henry Ball, and when completed will provide accommodation for 304 persons. For the present, however, seating for 238 only is to be provided. The building, which will have an entrance porch from the road, opening on to a raised platform, from which the church will be approached by three steps, is to be built of red brick, with open-timbered roof. The walls will be filled with lead glazing and ornamental ironwork. The builder is Mr. E. C. Hughes, of Wokingham.

NEW CHURCH, HANWELL.

The foundation-stone has now been laid of the new Church of St. Mellitus, Hanwell. Sir Arthur Blomfield & Sons are the architects of the new building.

SCHOOL-CHURCH, WREXHAM.

A school-church is in course of erection in Smithfield-road, Wrexham. The building will cost 3,000*l.*, and the architects are Messrs. Prothero, Phillott, & Barnard, of Cheltenham. The contract is in the hands of Mr. W. E. Samuel, of Wrexham. The complete extension scheme, of which the present building forms only a part, provides for the expenditure of about 13,000*l.*

MEMORIAL CHAPEL, THORNTON HEATH, SURREY.

The foundation-stones were recently laid of a new chapel which the Baptist community in Thornton Heath are erecting in memory of the late Charles Spurgeon. The church has been designed by Messrs. George Baines & Son. The dressings are to be of Bath stone, and the facings of Leicester pressed red bricks. Accommodation will be provided for 530 persons, all on the ground floor, and provision is to be made for future galleries, which would bring the total accommodation to about 830 persons. The building is being carried out by Messrs. Battley, Sons, & Holness.

TECHNICAL SCHOOL EXTENSION, DUNFERMLINE.

An extension is to be made to the Lauder Technical School, and a site has been acquired with this object in the New-row. The building will provide accommodation for the teaching of linen weaving, mining, and engineering. Messrs. Barclay, Glasgow, are the architects.

SCHOOLS, BROMLEY.

New secondary schools are being erected at Bromley, Kent, for the Kent Education Committee, under the supervision of their Architect, Mr. W. H. Robinson. The walls are of brick, with Doulting stone dressings from the Chelynch beds, supplied by the Ham Hill and Doulting Stone Company, Ltd. The builder is Mr. A. S. Ingleton, of Herne Hill.

PARISH-ROOM, BROXBOURNE.

The Misses Smith-Bosanquet have presented a new parish-room to Broxbourne, Herts. It is constructed of brick, with Doulting stone dressings from the Chelynch beds, supplied by the Ham Hill and Doulting Stone Company, Ltd. The architects are Messrs. Whitfield & Thomas, of London, and the builders Messrs. Ekins & Co., of Hertford.

Digitized by Google

PROPOSED COUNCIL SCHOOLS, OXFORD.

At a recent meeting of the Oxford City Council the Education Committee submitted plans of the new Council school, which it is proposed to build in South Oxford. The buildings, it was stated, were portions of a school which would accommodate 1,080 scholars, should the occasion ever arise for providing such accommodation. At the present time it was proposed to provide for 580 only; with two additional classrooms, which might be utilised for backward children. The Council decided to send on the plans to the Board of Education for approval. Mr. Castle is the architect to the proposed work.

HULME GRAMMAR SCHOOL, MANCHESTER.

It is proposed to extend the buildings of the Hulme Grammar School, in Alexandra Park, Manchester. The new building will provide a new main entrance, and will consist of a secretary's office on the ground floor, and in the basement storerooms and a room for drying clothes. The hall, which adjoins it, will, when complete, be 90 ft. in length by 40 ft. wide, divided longitudinally into six bays by oak roof trusses of the "hammer-beam" type of construction. The walls will be panelled in oak to a height of 8 ft., and faced with red Ruabon brick above. The floor will be laid with oak blocks. Externally the new building will be in red Ruabon brickwork and terra-cotta. The cost of the whole building, exclusive of furnishing, will be about 7,500*l*. The plans have been prepared by Mr. Cecil Hardisty, architect, of Manchester.

SUNDAY-SCHOOLS, PAIGNTON.

The Sunday-schools at Paignton in connexion with St. Andrew's Church have been enlarged, to the designs of Messrs. E. Appleton & Son. The accommodation contained in the completed block comprises a large hall, with platform and open-barrelled ceiling, 56 ft. by 28 ft. Communicating with this hall are two classrooms, and connected by a short corridor is the girls' room and a kitchen and storerooms. Externally the walls are of local red sandstone, with snail-creep facings and ashlar-quoined buttresses. The dressings are of Bath stone, and the roofs are covered with Somersetshire tiles.

COUNCIL SCHOOL, WARWICK BRIDGE, CUMBERLAND.

The Cumberland County Council have opened a new school at Warwick Bridge. The new school and the adjoining schoolmaster's house have been built of red stone from the Cumwhinton quarries, and has accommodation for 153 children. The total cost of the school has been 2,060*l*., and of the house 680*l*. Mr. J. Forster, Clerk of Works to the County Education Committee, was the architect, and Mr. J. Heward, Brampton, the sole contractor, the sub-contractors being as follows:—Joiners, Messrs. T. & J. Nixon, Carlisle; plumbers, Messrs. Graham & Crawford, Carlisle; plasterers, Messrs. R. M. Ormerod & Son, Carlisle; slater, Mr. Hewetson, Carlisle; painters, Messrs. Atkinson & Elliott, Brampton; heating apparatus, Mr. John Corbett, Carlisle.

ASYLUM FOR THE BLIND, SOUTHMEAD, BRISTOL.

A new asylum for the blind is being erected at Henleaze-lane, Southmead, in place of the old headquarters situated at the top of Park-street, which have been sold. A sum of between 25,000*l*. to 30,000*l*. will be required to complete the scheme in addition to what will be realised by the sale of the old premises. Mr. Edward Gabriel, architect, was entrusted with the drawing up of the plans. The buildings are erected by Mr. R. Wilkins & Son.

FREEMASONS' HALL, WEST BRIDGFORD, NOTTINGHAM.

A Freemasons' hall is to be built on a site in the Loughborough-road, West Bridgford. The plans have been prepared by Mr. Lambert, and the accommodation will include a hall capable of seating 250 people.

COTTAGE HOSPITAL, TORRINGTON.

A cottage hospital has been erected at Torrington, at a cost of about 1,300*l*. The building, designed by Mr. W. C. Medland, of Torrington, is of Marland brick and local stone, and comprises matron's apartments, operating-room, surgery, consulting-room, and men's and women's wards, each accommodating four beds.

LONDON BUILDINGS.

A skating-rink is to be erected in Uxbridge-road, W., from the plans of Mr. G. F. Ward, Birmingham. Mr. Edwin Evans, Lavender-hill, Battersea, S.W., is to lay out the site of the Old Hendon House and demense, and to erect thereon modern houses.

VILLAGE INSTITUTE, SLEIGHTS, NEAR WHITBY.

Institute premises have been opened in this village. The building consists of a large hall, with a platform, ante-room, and a kitchen below. It is built of blue bank stone, and has a red tiled roof. As the result of a competition, the drawings of Mr. E. H. Smales, A.R.I.B.A., were accepted, and Messrs. Wilkinson & Sons, Sleights, were the builders.

HIPPODROME, BISHOP AUCKLAND.

A hippodrome is being erected at Bishop Auckland. The new building, which is to be of brick, with stone dressings, is to cost over 10,000*l*., and to have seating accommodation for 1,800 persons. Messrs. J. J. Taylor & Minor are the architects, and Messrs. Nicholds & Reynolds the contractors.

TRADE NEWS.

The extensions to the East Ham Isolation Hospital are being warmed and ventilated by means of Shorland's double-fronted patent Manchester stoves, with descending smoke flues and special inlet ventilators, the same being supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Sanitary and Engineering News.

PROPOSED MUNICIPAL IMPROVEMENTS, DUBLIN.

The Dublin Corporation propose to carry out several large and important works, and an inquiry was held a short time ago by Mr. P. C. Cowan, Chief Engineering Inspector of the Local Government Board, into their proposals. The Corporation asked for sanction of the following loans:—100,705*l*. for extending the electric lighting mains and plant; 100,000*l*. for completing the main drainage; 17,400*l* for erecting working-class lodging-houses at Inchicore; 10,632*l*., completion of refuse destructor; 10,000*l*., advances under the Small Dwellings Act; 10,000*l*., carrying out street improvement works; 1,320*l*., lighting Drumcondra and the North Circular road by electricity; 1,006*l*., private improvement expenses; 2,365*l*., carrying out street improvement works at the Ranch, Drumcondra. In the course of the inquiry, which extended over several days, evidence was given by the City Architect, Mr. C. McCarthy, and the City Engineer, Mr. Spencer Harty.

NEWPORT BRIDGE (MON).

A joint report has been submitted to the Newport Town Council by Mr. E. Cruttwell, C.E., and the Borough Engineer relative to Newport Bridge on the question whether the structure could be rendered safe for some years to come at a reasonable cost, or whether it was essential in the interests of public safety to reconstruct the bridge. The engineers suggest two alternative schemes for rendering the bridge sound. The first involves the underpinning the three eastern piers, and would cost 54,950*l*., but with possible further expenditure on underpinning western pier and eastern abutment the amount would be brought up to 82,450*l*. The second scheme provides for protecting piers with pilings and rubble stone, to cost 13,550*l*., but with possible further expenditure on underpinning eastern abutment, this sum would be increased to 25,550*l*. The engineers express the view that the right policy would be to face the larger outlay required for an entirely new bridge, as suggested in previous reports.

BIRMINGHAM ELECTRIC SUPPLY.

Mr. H. R. Hooper, an Inspector of the Local Government Board, held an inquiry a short time ago at the Council House, into an application made by the Birmingham City Council to the Local Government Board for sanction to borrow 149,350*l*. for purposes of the electric supply undertaking, 16,600*l*. for works of paving, and 2,200*l*. for works of sewerage. It was explained with regard to the first loan that 100,000*l*. of that amount was required for an extension of the underground mains, 15,000*l*. was needed for high-tension switch gear, 2,000*l*. was required to supply transformers to consumers' premises in cases where consumers desired low-tension current in districts where there were only at present high-tension mains available, and the balance of the loan was wanted for the installation of new plant at Dale-end and Summer-lane stations. The loan of 16,600*l*. for works of paving, it was stated, was necessary in order that the policy of the Council to extend annually the paving of the streets in suitable places might be continued.

EXMOUTH WATER SCHEME.

A report on the Dotton water undertaking has been submitted by Messrs. Hill & Sons, engineers, to the Exmouth Council. In the course of their report they mention that the Dotton boring reached a depth of 338 ft., the last 34 ft. of which was in the pebble beds. During the offcial test water was pumped at the rate of 40,000 gallons per hour. The final cost of the boring was 1,605*l*. 13s. 8d. It was now possible to estimate the cost of the entire works much more closely than when the Parliamentary estimate was prepared last year. The estimate then amounted to 43,000*l*. The well and adits, however, provided for in that estimate would not be required, and if the piping and tunnel between Squabmoor and Quentance were also not required at once, the expenditure on the works would be 18,628*l*. To this must be added the engineering, legal, and other costs.

NEW BRIDGE, WHITBY.

The iron and stone bridge spanning the River Esk in this town, and connecting the east and west sides, has given place to a more modern and larger structure. The contractors are Messrs. Heenan & Froude, Ltd., Manchester, and the engineer Mr. Moncreiff, Newcastle. The contract price of 13,065*l*. 5s. 8d. has been exceeded owing to greater depth of foundations than was estimated. The new bridge is worked by electric power, enabling it to be swung open in a very few seconds. It is a double swing bridge, on two stone piers, one of which is founded on a caisson sunk 39 ft., and the other on a series of greenheart piles driven 50 ft. into the bed of the river. The space between the centres of the piers is 100 ft. The roadway is 14 ft. wide, and the two footpaths are each 4 ft. 6 in. in width, this being also the height of the iron lattice parapet. It is paved with wood blocks laid on a solid bed of concrete, the approaches being also paved in a similar manner.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Mr. E. Douglas Hoyland, architect and surveyor, has removed from No. 2, Walbrook, to No. 10, John-street, Adelphi, London, W.C.

THE GERMAN CEMENT TRADE.

The annual report of the British Consul at Berlin, which has recently been issued, says the more extensive use of ferro-concrete is opening new fields for cement, though Berlin builders are rather sceptical as to its advantages for buildings above ground. So far only a small number of Berlin architects have decided to adopt it to any great extent, in spite of the fact that in other parts of Germany the roofs, beams, and trusses of large buildings are constructed with that material. It is believed that the use of ferro-concrete, by prolonging the time necessary for building, must increase expenditure on interest. As a matter of fact, ferro-concrete was largely used in the construction of the great warehouse on the Teltow Canal. In the construction of walls, pillars, etc., for bridges and underground structures this material has met with favour in Berlin, and some of the Berlin suburbs have placed considerable orders for concrete drain pipes, some of which are to receive an acid-resisting coating. Referring to the cement trade in general the Consul writes that in consequence of the depression in private building activity the consumption of cement diminished during the year. While in 1907 about 2,500,000 tons were used for Berlin buildings, over 500,000 tons less were required in 1908, a reduction due partly to the raising of prices by the syndicate, though outsiders continued to offer their products at cheap rates in Berlin; as, however, this competition only became acute in the second half of 1908, when the depression was still increasing in intensity, no perceptible effect was produced on the consumption. In view of the prevailing slackness, and in order to create a demand, the syndicate reduced the prices for 1909 to the level of 1907, a measure dictated partly by necessity, and partly with the object of counteracting the underselling tactics of outsiders, and particularly those of the new works in Upper Silesia, which are attempting to gain a firm footing in Berlin by means of considerable reductions in price. As was to be expected from the favourable position of agriculture, building operations in the rural districts were livelier than in the cities, but it is very doubtful whether rural consumption was able to compensate for urban deficiencies. The activity displayed in the erection of public works, especially the continuation of canal construction, operated in some degree to increase the demand for cement.

COLORADO MARBLE.

In an official report it is stated that the development of the very large beds of marble on Yule Creek, in Gunnison County, State of Colorado, has progressed steadily, and, although it is an infant industry, yet the company working this marble deposit has a payroll of 6,000*l*. per month, owns and operates twelve miles of steam railroad and three miles of electric trams, and has installed a power plant with which to facilitate the working. The value of the marble is rapidly being

Digitized by Google

recognised, and the demand for it is becoming larger month by month. It is susceptible of taking a very fine polish, and is being used largely for the interior of banks and large office buildings. In Gunnison County, too, there have recently been developed large deposits of high-grade roofing slate and grindstone material, whilst in Routt County, near Steamboat Springs, there was discovered last year a valuable deposit of onyx.

TARRANT CRAWFORD PARISH CHURCH.

It is proposed to effect a restoration of the parish church of St. Mary, Tarrant Crawford, near Blandford, which has fallen into an untoward condition. The project embraces the erection of a memorial to Richard Poore, in turn Bishop of Chichester, Salisbury, and Durham, a native of the village, who rebuilt near the church and refounded the early XIIIth century Abbey of Cistercian nuns, dedicated to the Virgin and All Saints, the revenues of which, at the Dissolution, were calculated at 239*l.* 11s. 10d. Bishop Poore and Joan, daughter of King John and first wife of Alexander II. of Scotland, were buried in the church.

PROPERTY SALES.

In the recent sale of Lord De la Warr's property in Whitefriars was included one lot of freehold ground rents of 728*l.*, with reversion in fifty-one and a half years, secured upon the Salisbury Hotel, which realised 20,000*l.* The hotel was built as the Agricultural and Farmers' Club Hotel, on the south side of Salisbury-square, in 1863, by Messrs. Trollope after designs by the late John Giles. The sale, consisting of similar holdings in Dorset-buildings and Dorset and Whitefriars streets, with freeholds in Whitefriars-street and Primrose-hill, yielded a total of 56,500*l.*——The estate of Kintail, extending over 26,000 acres of deer forest near Loch Duich and Glenshiel, in south Ross-shire, is placed in the market by Sir Victor Mackenzie, of Glenmuick.——Highcroft, Bexhill-on-Sea, built a few years ago, after plans and designs by Mr. T. B. Wall, F.R.I.B.A.——Holcombe, near Chatham, with 40 acres of park and woodland; the house was built for the owner in 1887 from the designs and plans of Mr. John Belcher, R.A.——No. 1, Hamilton-place, Piccadilly, one of a block of three houses, of which, upon the recent renewal of the Crown leases, it was stipulated that a new Portland stone front should be put to each house; Messrs. Romaine-Walker & Besant carried out the work, advancing the building line 6 in., adding the porch, and altering the main staircase, whilst retaining the character of the old work. No. 1 was the home of Lord Chancellor Eldon. Hamilton-place was laid out on land leased to Colonel James Hamilton, Ranger of Hyde Park, who died, 1673, in fight with the Dutch.

OPEN SPACES.

The National Trust make an appeal for donations towards a sum of 1,100*l.* to enable them to purchase a central portion of the northern side of the Cheddar Cliffs gorge in proximity to the place where a vast landslip occurred three years ago. The disaster was attributed to blasting and quarrying operations in that side of the Pass. The purchase would be subject to the terms of a lease, which expires in 1912; but if made the heart of the gorge will be preserved and further disfigurement arrested.——Lord Manvers has presented a park for the use of the miners and villagers of New Adwick and Roman Terrace, in the district of Swinton, W.R. Yorkshire, the ground being let at a nominal rent to the Manvers Main Colliery Company, who are large employers of labour in the locality.——With the concurrence of Mr. W. Willett, the owner, the Metropolitan Public Gardens Association are enabled to open Clifford's Inn garden to the public during the current summer.——The Middlesex County Council have resolved to contribute one-fourth of the purchase moneys, 7,500*l.*, for the acquisition by the Friern Barnet District Council of the Friary, Friern Barnet, as an open space of nearly 23 acres in extent.——The Birmingham and District Housing Reform and Open Spaces Association have secured an area of 250 acres at Castle Bromwich for a play and recreation ground.

VIENNA'S NEW MUSEUM.

The resolution passed by the Municipal Council on July 3, 1900, is about to be carried into effect, and the building of the Emperor Franz-Josef Municipal Museum put in hand. The necessary funds have already been provided for in the Budgets of 1910, 1911, up to the amount of 1·75 million kronen. The museum will be built on a site in the Karls-Platz, which has been reserved a long time for this purpose, and is the property of the Municipality. Herr Otto Wagner is entrusted with the work, which will be carried out from plans of the third scheme he has submitted. In this last design the main entrance of the museum is not on the long façade of the building facing the square, as proposed in all the other plans, but is changed to the Lasten-street façade. Above the main entrance a small superstructure will indicate the position of the administrative offices, which are grouped behind the main entrance. The second essential alteration consists in abandoning the scheme of continuing Brucker-street through the museum buildings. Thus the dignified effect of the Karlskirche will be assured. The height of the cornice of the church has been accurately measured, and will regulate that of the proposed new building. The plan of the museum was also altered; it is now extremely simple. Corridors run the entire length of the building, so that any rooms may be closed without interrupting the free circulation of visitors. Herr Wagner's original idea of a masonry structure has had to be modified in order not to prejudice the effect of the Karlskirche, which is only faced with cement. According to Herr Wagner's latest plans, the Karls-Platz appears to be completely closed in by the museum buildings, and with its area, 105,000 sq. metres, will be, after the Place de la Concorde, the largest square in the world. Herr Wagner will at first submit a model of his latest design, and then the building of the museum will be at once started. The work should be completed in two and a half years.

UPKEEP OF ROADS IN ITALY.

The Italian Touring Club has recently brought out a publication, which is a comparative study of the systems employed in various parts of Italy for the upkeep of roads. The book treats at length of the development, classification, and legislation relating to roads, and of the systems applied to the maintenance of provincial, national, and urban roads. It concludes with pointing out the necessity of reforming legislation dealing with public works in the sense of providing for the ordinary repair of roads, a lamentable omission in the existing laws. The nation has, indeed, made considerable pecuniary sacrifices in order to facilitate communication throughout the kingdom, and provided roads of sound material where none existed. Much remains to be done, however, in order to bring Italy's road system up to the level of that of other progressive nations, while far more care should be bestowed on the maintenance of existing highways in order that they may meet the exigencies of traffic. Italy has spent nearly 3,000 millions of lire on ordinary lines of communication, but some idea of what remains to be done can be formed by considering those roads which, after their construction have become, through landslips or neglect, so impracticable that traffic on them has been suspended. This state of things arises from the irrational system of upkeep obtaining everywhere, which contents itself with occasionally laying down metalling, and leaving this to be rolled in by vehicular traffic. Forty-three million lire are annually spent on the maintenance of 138,000 kms. of carriage roads; the sum in itself is respectable, but the results are unsatisfactory owing to the fact that the administration applies antiquated and empirical methods and systems, which have been condemned by modern experts.

DWELLINGS FOR WORKING MEN, VIENNA.

The Committee of the Emperor Francis Joseph Jubilee Fund for dwellings for the working classes has decided to build a second memorial dwelling for men, this time in Hernals, near Vienna, on the Rowton House system. The architects, Messrs. Ramsauer & Richter, have already prepared the plans, which are based on the experiences derived from the erection of the first block of buildings in Vienna, and on ideas acquired during a tour of inspection in Berlin, Essen, London, and Paris. The site measures about 4,000 sq. metres. The building will provide 813 ordinary cubicles and seventy-eight better-class ones, disposed in forty-five groups on three floors. The ground floor will contain the day-rooms, dining-rooms, kitchens, reading, smoking, writing rooms, and medical department, waiting-rooms, caretaker's dwelling, canteen, etc. In the basement are wardrobes for the lodgers' clothes, boxrooms, bathrooms, boot-rooms, heating furnace, and disinfecting apparatus. Besides the main entrance there are four exits, two of which open on a thoroughfare. This block, when completed, will contain the most up-to-date technical and hygienic contrivances, and will be the biggest thing of its kind on the Continent.

EXTENSION OF VIENNA.

About fifteen years ago, Vienna annexed as municipal property all the surrounding neighbourhood. The scheme for connecting the Danube and the Oder by canal has suggested the further extension of the capital, which has now absorbed a series of suburban parishes, with a population of 60,000 souls. The Municipality of Vienna feared that after the completion of the canal, which will join the river near the town, these parishes might come to an understanding with speculators or manufacturers. What use the city intends making of this new ground, part of which consists of vast rural districts, is not yet known. One suggestion is to turn it into a belt of forest and fields, which would secure a reserve of fresh air for the city, with parks, promenades, and lawns for games, sport, and recreation. Others suggest that in consideration of the value this ground will acquire, new quarters should be built containing a good class of dwellings.

REBUILDING THE ALT-OTTAKRINGER CHURCH, VIENNA.

The foundation-stone of the new church has recently been laid. The original idea has been abandoned of adding to the transepts of the old church, prolonging its nave, and raising its tower. Instead of adding to the old building, a new one will replace it. During building operations, however, divine service will continue uninterrupted. Hence the work will have to be carried out in two detachments. During the first period the transepts and presbytery will be erected at the rear of the church, and when these are ready the existing building will be demolished and the new one completed. This will seat 2,500 persons.

THE SANITARY INSPECTORS' EXAMINATION BOARD.

An examination for certificates of qualification for appointment of sanitary inspector or inspector of nuisances under sect. 108 (*d*) of the Public Health (London) Act, 1891, will be held in London on Tuesday, January 18, 1910, and the four following days. In the event of a sufficient number of candidates making application, at least a month previously, examinations may also be held at the following centres:—Birmingham, in June, 1910; Bristol and Cardiff, as arranged in 1910; Liverpool, in April, 1910. The conditions upon which candidates are admitted to the examination, and all necessary particulars, will be forwarded on application to the Hon. Secretary, the Sanitary Inspectors' Examination Board, 1, Adelaide-buildings, London Bridge, London, E.C.

NATIONAL ASSOCIATION OF MASTER HOUSE PAINTERS AND DECORATORS OF ENGLAND AND WALES, INCORPORATED.

In connexion with the sixteenth annual convention of the National Association of Master House Painters and Decorators of England and Wales, to be held at Sheffield next month, Sir William Richmond has consented to deliver an address on the 14th prox. to the members and friends, on the subject of "House Decoration for the Masses."

NATIONAL INSTITUTION OF APPRENTICESHIP.

The Lord Mayor invites subscriptions in aid of the work of the Institution in apprenticing boys and girls to skilled labour. The number of applicants for premiums amounts to more than sixty per week, and over 600 apprentices have been indentured in trade handicrafts. An annual sum of 13,000*l.* is required for the payment of premiums. Lord Avebury is treasurer of the Institution.

"A PRACTICAL TOWN."

Mr. Lyttelton, K.C., M.P., President of the Hampstead Garden Suburb Trust, took the chair, on the 4th inst., at the local institute on the occasion of the delivery by Councillor Nettlefold, of Birmingham, of a lecture on the subject of "A Practical Town," suitable for a commercial centre, comprising public buildings for administrative, religious, recreative, educational, and other purposes. Assuming the Housing and Town Planning Bill to have become an Act of Parliament, Mr. Nettlefold suggested that in planning a town administration should come first. The principal buildings for this purpose should be in the centre of the town, as they are of civic life, and should be business-like as well as dignified, depending for their impressiveness on beauty of line rather than on excessive ornament. It was most important also that there should be plenty of free space round this centre. Other public buildings, religious, recreative, educational, etc., should also be placed on main thoroughfares with open spaces around them. The next concern should be the individual employment of the citizens. Factories and warehouses should be at the rear of the town, and properly served by railways and canals. In connexion with the enjoyment of the citizens home and its surroundings, by placing business buildings on wide main arteries radiating from the centre in the way suggested, there would be provided cases where dwelling-houses could be put. In these districts the actual roadways should be narrow,

MISCELLANEOUS—*Continued on page 197.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments, —.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50*l.* 25, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

Contracts.

BUILDING.

AUGUST 16. — **Halifax.**—WEAVING SHED.—Mason's, joiner's, slater's, plumber's, iron and steel, and shafting works required in the erection of a weaving shed about 72 yds. by 24 yds. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. W. G. Gray & Son, architects, 26, George-street, Halifax.

AUGUST 16. — **Mullion.** — HOTEL.—For erecting Polurrian Hotel, Mullion. Plans, etc., may be seen by appointment at Colroger, Mullion. Mr. Arthur Gilbert, architect, Treval, Torpoint.

AUGUST 17.—**Bray.**—LIBRARY.—The U.D.C. of Bray (Public Library Committee) invite tenders for the erection of a Public Library at junction of Florence-road and Eglinton-road, Bray, in accordance with plans, etc., prepared by Mr. J. Charles Wilmot, C.E., 3, Lower Merrion-street, Dublin, which may be inspected at the Town Hall. Intending contractors will be required to deposit the sum of 2*l.* 2s. with Mr. P. MacDonnell, Clerk, Town Hall, Bray, for form of tender and copy of bill of quantities, prepared by Messrs. D. W. Morris & Co., 68, Harcourt-street, Dublin.

AUGUST 17.—**Middlesbrough.**—ADDITIONS, ETC., TO COTTAGE HOME BLOCKS.—Additions and alterations to cottage home blocks, Middlesbrough Workhouse. Names to Messrs. R. Lofthouse & Sons, architects, 129, Albert-road, Middlesbrough.

AUGUST 17.—**New Tredegar.**—HALL.—Erection of a Parish Hall at New Tredegar for the Vicar and Churchwardens. Plans, etc., can be seen, and full particulars obtained, at the office of Mr. Geo. Ketsholé, M.S.A., architect and surveyor, Station-road, Bargoed.

AUGUST 17. — **Shalford.**—REPAIRS, ETC.—Shalford P.C. invite tenders for carrying out some small repairs and painting work to the buildings and gateways in the Cemetery at Shalford. A specification of the work can be seen on application to Mr. Edward L. Lunn, Architect and Surveyor, 36, High-street, Guildford.

AUGUST 17. — **Whitehaven.**—LAUNDRY.—Erection of steam laundry on the Low-road, Whitehaven, for the Whitehaven Steam Laundry Company, Ltd. Plans, etc., may be seen at the offices of Messrs. J. S. Moffat & Bentley, architects, 53, Church-street, Whitehaven.

AUGUST 18.—**Fareham.**—HOUSE.—Tenders are invited for the erection of a house at Fareham. Plans can be seen, and quantities obtained from Messrs. Hall, Pain, & Goldsmith, 48, West-street, Fareham.

AUGUST 18.—**Kinsale.**—COTTAGES.—Kinsale R.D.C. invite tenders for building 118 cottages in accordance with the plan, etc., to be seen at the Council Office. Conditions of contract, etc., can be had on application from Mr. John Murphy, Clerk of Council, Council Office, Kinsale Workhouse.

AUGUST 18.—**Porth.**—ALTERATIONS TO PREMISES.—The Committee of the Cymmer Working Men's Club, Porth, invite tenders for alterations and additions to their premises in High-street, Cymmer, Porth. Plans, etc., to be seen on the premises, and bills of quantities and form of tender to be obtained from the architect on payment of 1*l.* 1s.

AUGUST 19.—**Banff.**—SCHOOL.—The School Board of the Burgh of Banff invite tenders for the mason, carpenter, plumber, slater, plaster, painter, and iron works of proposed new higher grade school, Banff. The plans, etc., may be seen with, and schedules of quantities obtained on application to, Mr. Arthur Clyne, F.R.I.B.A., architect, 123½, Union-street, Aberdeen, or Mr. John A. Badenoch, Clerk to the Board, School Board Office, Banff.

AUGUST 19. — **Cadoxton-Barry.**—ALTERATIONS.—Certain alterations to the Church Hall, Cadoxton-Barry, for the Rev. T. S. Longdon, Rector, and Committee. Plans can be seen, and quantities obtained, at offices of Mr. G. E. Halliday, F.R.I.B.A., 19, Castle-street, Cardiff.

AUGUST 19. — **Mitchelstown.** — COTTAGES. — Mitchelstown No. 1 D.C. invite tenders for the erection of labourers' cottages, in accordance with the specification of the Council's Engineer, Mr. Francis E. Draper, A.M.Inst.C.E.I., M.R.San.I., Mitchelstown. Forms of tender, together with lists of the cottages to be erected, to be had on application. Plans and specifications to be had on payment of 5s. Mr. T. A. O'Brien, Clerk of Council.

AUGUST 19.—**Rawmarsh.**—CONVERTING.—Conversion of premises into two dwellings, situate in Stocks-lane, Rawmarsh, for the Congregational Trustees. Plans, etc., may be inspected, and further particulars obtained, by applying at the office of Mr. J. Platts, architect, High-street, Rotherham.

AUGUST 20.—**Crigglestone.**—SCHOOL ADDITIONS.—The West Riding Education Committee invite whole or separate tenders for additions (builder, joiner, slater, plasterer, plumber, painter) at Provided School. Plans may be seen, and specifications obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 20. — **Dalvey Estate.**—FARM ADDITIONS, ETC.—Tenders are invited for the mason, carpenter, plumber, and iron works of additions and alterations at Grange-green Farm Steading. Plans, etc., may be seen with Mr. P. Fulton, architect, Forres.

AUGUST 20.—**Ebbw Vale.**—HOUSES.—Erection of sixty houses, more or less, for the Trustees of the Willow Town Building Club, Ebbw Vale. Plans, etc., may be seen with Mr. T. G. Jones, 21, Eureka-place, Ebbw Vale, or Mr. T. E. Rogers, architect, Brynfryd-terrace, Waunllwyd, Mon.

AUGUST 20. — **Garforth.**—SCHOOL ADDITIONS.—The West Riding Education Committee invite whole or separate tenders for the following work:—Garforth Provided School: Additions, etc. (builder, joiner, slater, plasterer, plumber, painter). Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 20.—**Ingatestone.**—COTTAGES.—The R.D.C. of Chelmsford invite tenders for the erection of two cottages at Ingatestone. Plans may be seen, and other particulars obtained, on application to the Surveyor, Mr. James Dewhirst, Bank-chambers, New-street, Chelmsford.

AUGUST 20.—**Luddenden.**—CHANCEL.—Excavators', masons' and bricklayers', carpenters' and joiners', plumbers' and glaziers', slaters', and concretors' work required in the proposed extension to chancel at St. Mary's Church, Luddenden. Plans may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh, F.S.I., and Graham Nicholas, F.R.I.B.A., architects and surveyors, Museum-chambers, Halifax.

AUGUST 20. — **Luddenden.** — WAREHOUSE, ETC.—Pulling down and rebuilding of warehouse and machine rooms at Dean Mills, Luddenden. Plans may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh, F.S.I., & Graham Nicholas, F.R.I.B.A., architects and surveyors, Museum-chambers, Halifax.

AUGUST 20. — **Porth.**—ENLARGEMENT OF CHURCH.—Enlargement of St. Paul's Church, Porth, for the Vicar and Churchwardens. Plans, etc., can be seen, and bills of quantities obtained, at offices of Mr. G. E. Halliday, F.R.I.B.A., Diocesan Surveyor, 19, Castle-street, Cardiff.

AUGUST 20.—**Wales.**—SCHOOL WORKS.—The West Riding Education Committee invite whole or separate tenders for the following works:—Wales new Infants' School (builder, joiner, slater, plasterer, plumber, painter). Plans may be seen, and specifications, etc. obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 21.—**Bandon.**—COTTAGES.—Bandon R.D.C. invite tenders for building 112 labourers' cottages, together with the fencing of 1 acre plots thereto. Plans, etc., can be obtained from the Clerk to the D.C. on payment of 5s.

AUGUST 21.—**Chopwell.**—SHOPS.—Sole tenders are invited for the erection and completion of six shops, etc., at Chopwell for Mr. M. F. Rupp. Plans, etc., may be seen at office of Mr. D. M. Spence, architect and surveyor, Shotley Bridge.

AUGUST 21. — **Goodwick.** — CHURCH.—Building a church at Goodwick, S.O., Pembrokeshire, for the Rev. E. Lincoln Lewis. The plans, etc., can be seen at office of Mr. E. M. Bruce Vaughan, F.R.I.B.A., architect, Cardiff, and at the Vicarage, Goodwick. Bills of quantities can be obtained on application to the architect on receipt of 2*l.* 2s.

AUGUST 21.—**Milton.**—HOUSE, ETC.—Cambridgeshire C.C. Small Holdings Committee invite tenders for the erection of a house and buildings at Milton. Plans etc., may be seen, and forms of tender may be obtained, at office of Mr. H. H. Dunn, County Architect, Central-chambers, Cambridge.

AUGUST 21. — **Pontywaun.**—SCHOOL EXTENSION.—Monmouthshire Education Committee invite tenders for extensions and alterations to the Pontywaun County Secondary School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. R. L. Roberts, architect, Abercarn, on payment of a deposit of 2*l.* 2s.

AUGUST 21. — **Rawdon.** — SCHOOL WORKS.—West Riding C.C. (Education Department) invite tenders for whole of works or separate trades—mason, joiner, slater, plumber, plasterer, painter, and heating engineer—for alterations and additions, Little Moor Provided School, Rawdon. Specifications may be obtained on application to Mr. Edward H. Steel, W.R. Education Office, Shipley.

AUGUST 23.—**Blundeston.**—CHAPEL.—Erection of a Wesleyan Chapel, Blundeston, near Lowestoft, in accordance with the plans, etc., prepared by Mr. R. Scott Cockrill, A.R.I.B.A., architect, Crossley House, London-road, Lowestoft.

AUGUST 23. — **Ebbw Vale.**—STABLE, ETC.—Ebbw Vale U.D.C. invite tenders for the erection of a stable and cart-shed at Beaufort and a bandstand at Ebbw Vale. Plans, etc., may be seen, and form of tender obtained, at the office of Mr. T. J. Thomas, the Town Engineer and Surveyor. A deposit of 10s., which must be made by postal order, will be required from each person for each copy of form of tender obtained.

AUGUST 25. — **Edenderry.** — BANK.—Rebuilding branch bank and residence at Edenderry for the Hibernian Bank, Ltd. Bills of quantities may be obtained from Mr. William Butler, surveyor, 58, Mountjoy-square, Dublin, on deposit of 2*l.* 2s. Plans may be seen at the Bank, Edenderry, or at the office of Mr. Edward J. Toye, architect, Northern Gate, Londonderry.

* AUGUST 27. — **Aylesbury.** — STABLES, STORES, SHEDS, ETC.—The Aylesbury U.D.C. invite tenders for new stables, stores, sheds, etc., off Cambridge-street. See advertisement in this issue for further particulars.

* AUGUST 27.—**Keighley.**—ENLARGEMENT OF POST-OFFICE.—The Commissioners of H.M. Works, etc., invite tenders for enlargement of Head Post-office at Keighley. See advertisement in this issue for further particulars.

AUGUST 28. — **Sutton.** — HOUSES.—Two detached houses in Sutton. Plans, etc., may be seen at the offices of the architects, Messrs. Belfrage & Saville, 27, Chancery-lane, W.C.

AUGUST 30. — **Belfast.** — MANSE.—Erection of a manse at Alliance-avenue, Oldpark, in connexion with the Oldpark Presbyterian Church. Plans, etc., may be seen at office of Messrs. Young & Mackenzie, Scottish Provident-buildings, Belfast.

AUGUST 30.—**Bradford.**—BATHS.—The Corporation invite tenders for all trades required in the forming of new bathroom, dressing-room, and douche baths at the Bowling Back-lane School. Drawings, etc., may be seen, and specification, etc., obtained, on application to the City Architect, Whitaker-buildings, Brewery-street, Bradford.

AUGUST 30.—**Newport, Isle of Wight.**—FOUNDATIONS.—The Corporation invite tenders for the construction of foundations for the new suction gas engine to be supplied to the Waterworks, Carisbrooke, I.W. Plans, etc., may be seen, and forms of tender obtained, at office of Mr. T. Ross Pratt, Town Clerk, 19, Quay-street, Newport, I.W.

AUGUST 30. — **Pencelli, Treorky, Rhondda Valley.**—HOUSES, ETC.—Erection of forty-five houses and formation of road, surface-water drains etc., at Chepstow-road, Pencelli, Treorky, Rhondda Valley, for the Pencelli Building Club. Plans, etc., may be obtained at office of Mr. W. D. Morgan, M.S.A., architect, 194, Ystrad-road, Pentre.

AUGUST 31. — **Dublin.**—REFUSE DESTRUCTOR.—The Cleansing Committee of the Corporation of Dublin invite tenders for the erection of an additional refuse destructor at their Depôt, Stanley-street, Dublin. Specification, etc., may be obtained at office of Mr. Fred. J. Allan, Secretary, Cleansing Committee, 3, Cork-hill, Dublin, on payment of 1*l.* 1s.

AUGUST 31.—**Skelton, etc.**—SCHOOL WORKS.—North Riding of Yorkshire C.C. Education Committee invite full tenders for certain alterations and improvements proposed to be effected at each of the following schools:—(1) Skelton, Stanghow-lane School; (2) Stainton Council School; (3) Guisborough Northgate School. Plans, etc., for the work as follows:—(1) Stanghow-lane School—on application to Mr. J. H. Fletcher, School Caretaker, 68, High-street, Skelton-in-Cleveland; (2) Stainton Council School—Mr. J. Jackson, School Correspondent, Stainton, Thornaby-on-Tees; (3) Guisborough Northgate School—Mr. J. Grant, School Master, Guisborough Northgate School.

Digitized by Google

SEPTEMBER 1.—**Dublin.**—ALTERATIONS TO MILITARY SCHOOL.—Tenders for additions and alterations at the Royal Hibernian Military School, Dublin. The plans, etc., can be seen at office of Mr. H. Williams, Secretary, Office of Public Works, Dublin. Forms of tender and bills of quantities will be supplied on deposit of 1*l*.

* SEPTEMBER 8. — **Hadleigh.**—SCHOOL.—The Essex Education Committee (Rochford Hundred District Committee) invite tenders for new school at Hadleigh, near Southend-on-Sea. See advertisement in this issue for further particulars.

SEPTEMBER 11.—**Picklenash, Newent.**—HANDICRAFT, ETC., ROOM.—Gloucestershire Education Committee invite tenders for the erection of a handicraft and cookery room at Picklenash Council School, Newent. Particulars of the work may be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester, upon depositing the sum of 2*l*. 2*s*.

NO DATE.—**Buttershaw.**—RESIDENCE.—Erection of residence, Buttershaw. Plans and quantities on applying at office of Mr. Thos. L. Dixon (late Messrs. Brayshaw & Dixon), architect, surveyor, etc., Bowling Old-lane, Bradford, and Halifax-road, Buttershaw.

NO DATE.—**Colchester.**—RESIDENCE.—Erection of a residence on the Lexden Park Estate, Colchester. Plans, etc., may be seen at office of Mr. J. W. Start, F.S.I., architect and chartered surveyor, Colchester. Quantities may be obtained on receipt of 2*l*. 2*s*.

NO DATE.—**Llanfairfechan.**—CHAPEL, ETC.—Erection of a new chapel and schoolrooms at Llanfairfechan for Horeb M.C. Names to Mr. Ll. Samuel, Winllan, Llanfairfechan.

NO DATE.—**Swinton.**—WESLEYAN CHURCH.—New Wesleyan Church at Swinton, near Rotherham. Quantities can be obtained from the architect, Mr. A. E. Lambert, 22, Park-row, Nottingham, and plans can be seen at the Wesleyan Sunday Schools.

ENGINEERING, IRON, AND STEEL.

AUGUST 16.—**Manchester.**—HEATING APPARATUS.—Manchester Education Committee invite tenders for providing and fixing a low-pressure heating apparatus at the Abbott-street Municipal School, Rochdale-road, Manchester. Plans may be seen, and a copy of bills of quantities, etc., obtained, at the Education Offices, Deansgate, Manchester, on a deposit of 1*l*. 1*s*.

AUGUST 19. — **Drogheda.**—HEATING APPARATUS.—The Board of Guardians invite tenders for supplying and fixing up of heating apparatus, drying horses, etc., in Workhouse laundry, and new steam vertical high-pressure boiler in kitchen, in accordance with plan, etc., prepared by Mr. Louis Turley, C.E., the Guardians' Architect, and which may be seen at the Clerk's Office.

AUGUST 19. — **Pembroke.**—PUMP, ETC.—Pembroke U.D.C., Co. Dublin, invite tenders for the supply of a petrol motor fire pump and accessories. Form of tender, etc., can be obtained from Mr. J. C. Manly, Clerk to the Council, Town Hall, Ballsbridge, Pembroke, Co. Dublin.

AUGUST 20.—**Salford.**—COOKING APPARATUS.—Fitting up and equipment of the kitchen at the Union Infirmary, Hope, Pendleton. Plans, etc., may be obtained from Mr. H. Lord, F.R.I.B.A., 42, Deansgate, Manchester, on a deposit of 1*l*. 1*s*.

AUGUST 26. — **Wandsworth.**—HEATING.—Wandsworth Guardians invite tenders for extension of heating apparatus at the hall at Tooting Home, Church-lane, Tooting. The specification and form of tender may be obtained at office of Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, S.W.

AUGUST 28.—**North Walsham.**—ENGINE.—Tenders are invited for the supplying, delivering, and fixing, ready for work at the North Walsham Waterworks Station, of a 16-h.p. oil engine. Mr. J. S. Empson, Clerk to the U.D.C., North Walsham.

AUGUST 30. — **Uxbridge.** — PLANT. — Uxbridge U.D.C. invite tenders for the overhauling and putting into proper repair of the duplicate pumping plant at their Waterworks, Waterloo-road, Uxbridge. Mr. W. T. Harvey, Clerk to the Council, Council Offices, 126, High-street, Uxbridge.

AUGUST 31.—**Dublin.**—REFUSE DESTRUCTOR.—The Cleansing Committee of the Corporation of Dublin invite tenders for the erection of an additional refuse destructor at their Depôt, Stanley-street, Dublin. Specification, etc., may be obtained at office of Mr. Fred. J. Allan, Secretary, Cleansing Committee, 3, Cork-hill, Dublin, on payment of 1*l*. 1*s*.

AUGUST 31.—**East Preston.**—BOILERS.—The Guardians invite tenders for the removal of one vertical steam boiler and for the supply and erection of one new vertical multitubular boiler, together with all necessary builder's work, at the Workhouse, East Preston, Sussex (near Angmering Station, L.B. & S.C.R.). A copy of the specification, etc., may be had from Mr. Arthur Shelley, Clerk to the Guardians, Littlehampton, on payment of a fee of 2*l*. 2*s*.

SEPTEMBER 4.—**Edinburgh.**—ELECTRIC LIGHTING.—The Lord Provost, Magistrates, and Council of the City of Edinburgh invite tenders for the electric lighting installation at the new slaughterhouses, Gorgie. The specification, etc., can be obtained at the Engineer's Office, Dewar-place, Edinburgh, on payment of a deposit of 1*l*. 1*s*.

SEPTEMBER 6.—**Cork.**—BRIDGE.—Cork City Railways Directors invite tenders for the construction of a road bridge with approaches, over the Cork and Bandon Railway at Cork. Plans for the masonry work, etc., and specifications may be seen, and forms of tender, etc., obtained, at the office of the G.W.R. Goods Agent at 98, Patrick-street, Cork, whilst the drawings for the ironwork may be seen at the office of the New Works Engineer at Paddington Station, London.

SEPTEMBER 7. — **Cork.**—GRAB HOPPER DREDGER.—The Cork Harbour Commissioners invite tenders for one 400-ton steam hopper dredger fitted with two cranes and grabs. Copies of specification can be obtained from Mr. James Price, M.Inst.C.E., Cork Harbour Commissioners' Offices, Custom House-street, Cork.

SEPTEMBER 13.—**Croydon.**—BOILER.—The Guardians of the Poor of the Croydon Union invite tenders for the supply and erection of one Cornish boiler at the Croydon Union Infirmary, Mayday-road, Thornton Heath, Surrey; also the existing boiler to be removed. Copies of specification with forms of tender may be obtained on application to Mr. J. F. L. Crosland, Vulcan Boiler and General Insurance Company, Ltd., 67, King-street, Manchester.

MISCELLANEOUS.

AUGUST 14.—**Horsham.**—STEAM ROLLER.—Horsham R.D.C. invite tenders for hire of steam roller, with scarifier. Further particulars and forms of tender may be obtained of Mr. Wm. Dengate, Surveyor, 58, Park-street, Horsham.

AUGUST 16.—**Westhampnett.**—STEAM ROLLING.—The R.D.C. invite tenders for about 400 days' steam rolling. The form of contract, etc., may be seen, and further particulars obtained, at the office of the Council.

AUGUST 19.—**Aston-with-Aughton: Swallownest new Provided School.**—FURNITURE.—West Riding C.C. invite tenders for furniture required for the school. Full particulars may be obtained from the Education Department (Elementary Branch), County Hall, Wakefield.

AUGUST 25.—**Romney Marsh.**—STEAM ROLLING.—Romney Marsh R.D.C. invite tenders per working hour per roller for the hire of two 10-ton steam rollers. Mr. William B. Smith, District Surveyor, New Romney.

AUGUST 28.—**Southowram.**—CARTING, ETC.—Southowram U.D.C. invite tenders for the carting of dross and granite. Mr. J. Edgar Oates, Surveyor, Council Offices, Southowram.

AUGUST 28. — **Southowram.**—SCAVENGING.—Southowram U.D.C. invite tenders for emptying the closets and ashpits. Further particulars may be obtained from Mr. James Edgar Oates, Surveyor, Council Offices, Southowram.

AUGUST 28. — **Southowram.** — TEAM LABOUR. — Southowram U.D.C. invite tenders for the general team labour of the District for the ensuing twelve months. Mr. J. Edgar Oates, Surveyor, Council Offices, Southowram.

AUGUST 31. — **Oldham.**—TIMBER.—Oldham Education Committee invite tenders for the supply of timber for the several manual instruction centres. Forms of tender may be obtained of Mr. J. Rennie, Secretary for Education, Education Offices.

PAINTING, etc.

AUGUST 16. — **Huddersfield.** — PAINTING, ETC., AT CROSLAND MOOR WORKHOUSE.—Tenders are invited for the painting, colouring, etc., required at the Crosland Moor Workhouse. Specifications may be obtained at office of Mr. E. A. Rigby, Clerk to the Guardians, Union Offices, Ramsden-street, Huddersfield.

AUGUST 17. — **Belfast.**—PAINTING.—The Board of Guardians invite proposals for painting and carrying out repairs at Glengall-street Dispensary Station in accordance with specification, which can be seen at office of Mr. Joseph W. Robb, Clerk of the Union, Clerk's Office, Union Workhouse.

AUGUST 19. — **Speen.**—PAINTING.—The Committee of the Speen Parish-room invite tenders for the painting of the outside of their premises. Mr. A. F. Marsham, Malta Cottage, Speen, Newbury.

AUGUST 19. — **West Derby.** — PAINTING. — The Guardians invite tenders for painting, etc., of gasholders. Specifications may be seen upon application to the Workhouse Master.

AUGUST 23.—**Preston.**—PAINTING.—Tenders are invited for paints and labour of painting a division of County Asylum, Whittingham, Preston. Specifications, etc., may be had on application to Mr. Thos. Dilworth, Clerk and Steward.

AUGUST 24. — **Heath Charnock.** — PAINTING.—Chorley Joint Hospital Board invite tenders for painting, etc., required at the Isolation Hospital, Heath Charnock. Mr. B. Stanton, Clerk, 14, High-street, Chorley.

ROADS, SANITARY, AND WATER WORKS.

AUGUST 14-SEPTEMBER 2. — **Penshaw.** — STREET WORKS, ETC.—Houghton-le-Spring R.D.C. invite tenders for the construction of ordinary and tar macadam streets at Old Penshaw. Names and addresses not later than the 14th inst. to Mr. D. Balfour, M.Inst.C.E., 3, St. Nicholas-buildings, Newcastle-on-Tyne, the engineer for the work, accompanied by a cheque for 5*l*.

AUGUST 16.—**Honley.**—WIDENING.—Honley U.D.C. invite tenders for the masons and whitesmith's work required to be done in widening Southgate, Honley. Plans may be seen, and bills of quantities obtained, on application to Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

AUGUST 18. — **Epsom.**—DRAINAGE.—Epsom U.D.C. invite tenders for the taking up and relaying of the drainage system at Nos. 2, 4, 6, 8, 10, 12, 14, and 16, East-street. Drawings, etc., may be inspected at office of Mr. E. G. Wilson, Clerk to the Council, Church-street, Epsom, and bills of quantities and form of tender will be supplied on application.

AUGUST 19.—**Oldham.**—SEWERING, ETC.—The Surveyors Committee invite tenders for sewering and completing of streets. Plans, etc., can be seen, and quantities and forms of tender obtained, at the office of the Borough Surveyor, Town Hall, Oldham.

AUGUST 20.—**Centry.**—WATER MAINS.—Laying of water mains and other works in connexion with the water supply of Centry, near Kingsbridge, for Mr. E. W. Adams. Bills of quantities can be obtained, and plans seen, at office of Mr. R. Hansford Worth, M.Inst.C.E., 42, George-street, Plymouth.

AUGUST 20.—**Paythorne.**—ASPHALTING.—The West Riding Education Committee invite whole or separate tenders for asphalting, Paythorne Provided School. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l*. must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

AUGUST 21.—**Sparkhill.**—PAVING, ETC.—Worcestershire C.C. (Highways and Bridges Department) invite tenders for providing and laying about 500 super. yds. of wood-block paving, on the Stratford-road, at Sparkhill, near Birmingham. Copies of the specification, etc., may be obtained of Mr. J. H. Garrett, County Road Surveyor, Shire Hall, Worcester.

AUGUST 22. — **Margam.** — SEWAGE WORKS.—The U.D.C. of Margam invite tenders for proposed sewage disposal works at Oakwood. Plans, etc., may be seen, and form of tender obtained, by appointment with the Surveyor to the Council, Mr. John Cox, Port Talbot, on payment of a deposit of 1*l*. 1*s*.

AUGUST 23.—**Batley.**—ROAD WORKS.—The T.C. invite tenders for the levelling, paving, channelling, and completing of streets. Plans, etc., may be seen on application to the Borough Engineer and Surveyor, Mr. Oscar J. Kirby, whose offices are at the Town Hall, Batley.

AUGUST 24. — **Dolwyddelen.** — WATERWORKS.—Geirionydd R.D.C. invite tenders for the construction of an extension of waterworks (about 5,000 yds. consisting of 3-in. C.I.M.) for the supply of the Village of Dolwyddelen, and for constructing an embankment and incidental works at Yr Hesgiwyn Dolwyddelen. Plans and sections, together with a copy of the specification, may be seen at the Union Offices, Llanrwst.

AUGUST 26.—**Southgate.**—PRIVATE STREET IMPROVEMENTS.—The U.D.C. of Southgate invite tenders for the making-up of private streets. Plans may be seen on application to the Council's Surveyor, Mr. C. G. Lawson, C.E., from whom copies of the specification, etc., may be obtained, on depositing 2*l*. in cash.

AUGUST 30.—**Ross.**—SEWERS.—The Ross U.D.C. invite tenders for the construction of about 460 yds. of 9-in., 15-in., 18-in., and 21-in. pipe sewers, with No. 14 manholes. Plans, etc., may be seen at the Council Offices, Albion-chambers, Ross.

AUGUST 30.—**Wrexham.**—SEWERS.—For 415 yds. of sewers, etc., for the T.C. Plans etc., may be seen, and bill of quantities, etc., obtained, on application to Mr. John England, C.E., Borough Engineer, Willow-road.

AUGUST 31.—**Aldershot.**—MAKING-UP.—Making-up Holly-road. Plan, etc., may be seen, and full particulars be obtained, on application at the office of Mr. F. C. Uren, A.M.Inst.C.E., the Surveyor to the Council.

AUGUST 31. — **Chislehurst.** — SEWER WORKS.—Chislehurst U.D.C. invite tenders for the laying of a sewer in Perry-street, Chislehurst. Forms of tender, with a copy of the specification attached, can be obtained on application being made to Mr. W. J. Winter, the Council's Surveyor, of Hampden House, Station-road, Sidcup, on payment of the sum of 1*l*.

SEPTEMBER 1.—**Leigh-on-Sea.**—SEWERAGE WORKS.—The U.D.C. of Leigh-on-Sea invite tenders for the construction of 220 lin. yds. of 24-in. diameter storm-water sewer and works connected therewith. Plans, etc., may be seen, and a copy of the quantities, etc., obtained, on application to Mr. John William Liversedge, A.M.Inst.C.E., Engineer and Surveyor to the Council, on payment of a fee of 10*s*. 6*d*.

SEPTEMBER 2.—**Northallerton.**—SEWAGE DISPOSAL.—The U.D.C. of Northallerton invite tenders for about 2,500 yds. of 15-in. stoneware pipe outfall sewer and effluent drain, together with the construction of liquefying and storm-water tanks, bacteria beds, engine-house, pump well, etc. Drawings, etc., may be seen, and bills of quantities obtained, at the offices of the engineers, Messrs. Willcox & Raikes, 63 Temple-row, Birmingham, up to August 18, and at the Council's Office, Northallerton, from August 19 to September 2, on payment of a deposit of 5*l*. 5*s*.

SEPTEMBER 2. — **Portland.**—DRAINAGE, ETC.—Portland U.D.C. invite tenders for the laying of an 18-in. stoneware pipe storm overflow from High-street, Fortuneswell; the construction of an ejector chamber at Castletown; the erection of an air compressing station in the Gasworks yard; the laying of a 2-in. iron compressed air main; and the installation of duplicate ejectors and air compressors. Plans may be seen, and copies of the specification, etc., obtained, at the office of Mr. R. Stevenson Henshaw, Engineer and Surveyor, Council Offices, New-road, Portland, on payment of a deposit of 2*l*. 2*s*.

SEPTEMBER 3.—**Burntisland.**—CULLALOE RESERVOIR.—The T.C. of Burntisland invite tenders for deepening part of the north shore of the South Bay of the above reservoir. Schedules of measurement will be obtained from Mr. J. A. Waddell, Burgh Surveyor, Burntisland, on payment of a deposit of 1*l*. Plan of the work will be seen on application to the Superintendent at the Reservoir, two miles from Aberdour Station.

SEPTEMBER 7.—**Leith.**—STREET WORKS.—The Provost, Magistrates, and Councillors invite tenders for the following works, viz.:—(1) Laying about 2,900 super. yds. of 4-in. granite or whinstone cubes at Dalmeny-street, Sloan-street, and James Place-lane; (2) laying about 2,150 super. yds. of cement concrete carriageway in Craighall-terrace, Claremont-gardens, and Seafield-street; (3) laying about 900 super. yds. of cement concrete pavement in Craighall terrace, Seafield-street, James Place-lane, Sloan-street, and Dalmeny-street. Plans, etc., may be seen, and information obtained, at the Burgh Surveyor's Office, Charlotte-street, Leith.

STONES, MATERIAL, AND STORES.

AUGUST 16.—**Portsmouth.**—MATERIALS.—The Corporation invite tenders for supplies. The specification, etc., may be obtained at the Town Clerk's Office, Town Hall.

AUGUST 17. — **Edmonton.** — KERB AND SETTS.—Edmonton U.D.C. invite tenders for the supply and delivery at Lower Edmonton Station on the Great Eastern Railway of about 1,000 ft. of 12-in. by 8-in. granite kerb, about 1,000 ft. of 12-in. by 6-in. granite kerb for channels, and about 50 tons, or more or less, of granite setts. Forms of tender, etc., may be had on application to Mr. G. Eedes Eachus, Engineer to the Council.

AUGUST 17.—**London.**—MATERIALS, ETC.—Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of stores, viz.:—(1) Bolts, nuts, and rivets; (2) spring and ferrule steel; (3) wood screws, pins, etc.; (4) steel material; (5) girder bridges. Forms, etc., can be obtained at offices of Mr. C. Crommelin, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 1*l*. 1*s*. each, which will not be returned.

AUGUST 19. — **West Ham.** — SUPPLIES. — The

Digitized by Google

Guardians invite tenders for the supply of articles to their Workhouse and Infirmary. Form may be obtained on application, or will be forwarded on receipt of a stamped addressed brief-sized envelope.

AUGUST 26.—**Grays Thurrock.**—MACADAM.—The Grays Thurrock U.D.C. invite tenders for the supply and delivery to the Town Wharf, Grays, of 500 tons of 1½-in. granite or basalt macadam, and 100 tons of ½-in. chippings of the same material. Form to be obtained, with specification, from the Council's Surveyor, at his office, High-street, Grays.

AUGUST 26. — **Woking.** — ROAD MATERIAL. — The U.D.C. of Woking invite tenders for the supply of about 2,000 tons of granite. Forms of tender may be obtained from Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

AUGUST 27. — **Bradford.** — LIME.—The Gas Committee of the Bradford Corporation invite tenders for the supply of 300 tons of best hand-picked lime, free from stone, and testing 96 o/o CaO, delivered at Frizinghall Siding, M.R.

AUGUST 31.—**Wakefield.**—WHINSTONE AND GRANITE SETTS.—Wakefield and District Light Railway Company invite tenders for the supply of 1,000 tons of 6-in. by 3-in. first quality dressed non-slippery granite setts; 350 tons best quality dressed 5-in. by 3-in. whinstone or hard granite setts.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*IRONMGRS.' AND BLDRS.' MERCHANT'S STCK., CAMBERWELL, S.E.—On the Premises	J. T. Skelding & Holland	Aug. 18
*PAPERHANGINGS (ENGLISH), CAMBERWELL, S.E.—On the Premises	J. T. Skelding & Holland	do.
*BLDR. AND CONTRACTOR'S PLT. AND MACHINERY, BELVEDERE-RD.—On the Premises	Fuller, Horsey, Sons, & Cassell	Sept. 14

MISCELLANEOUS—*Continued from page 194.*

with tree-planted grass margins and pleasant footpaths on either side. In England our main arteries were far too narrow, and the roadways of side streets were far too wide. Open spaces, playgrounds, and allotments were a great deal better on back land than when located on valuable frontage, which might be, from every point of view, more profitably used for houses. As regards the means of communication between the constituent parts of the town, at present this matter was not thought of seriously until a town had grown up. Many millions of the ratepayers' money had been spent in this country for pulling down buildings that never should have been put up. Mr. Lyttelton having expressed general agreement with the views advanced by the lecturer, and pointed to the great improvement which was to be seen in the houses now erected in small towns and villages as the result of the good example set in garden cities and suburbs, remarked that the principle of Mr. Burns's Housing and Town Planning Bill had the hearty support of both great political parties, though naturally in connexion with such a novel subject there were considerable differences of detail. In the course of the discussion of the Bill in Committee Mr. Burns and town planners generally had learned the lesson that it is not necessary to have roads 40 ft. or 50 ft. wide running in every direction, and that it is a distinct advantage, both as regards cost and comfort and quietude, to have the roads other than the main roads narrower. At the present time there were not a great many experts in the art of planning towns and garden cities, and he hoped that another lesson which Mr. Burns would be taught in a friendly way was that it was not desirable to rush this question too rapidly, and that as the Local Government Board, excellent as it was in many ways, certainly was not experienced or skilled in the laying out of towns, there should be a special branch of the Department established for the purpose of dealing with this subject. Nothing could be more deplorable or more calculated to bring about disaster than that this great idea should be tossed about the country and dealt with by incompetent people who, having acquired land compulsorily without possessing the requisite knowledge how best to deal with it, might impose on the community at great cost and inconvenience some hideous schemes when far more satisfactory results could have been achieved by private enterprise.

ST. PAUL'S BRIDGE.

The President of the Royal Institute of British Architects has written to the Corporation placing the services of that body at their disposal in matters connected with a proposed new bridge over the Thames and the variation in the gradients of Southwark Bridge, and inviting the Corporation to receive a deputation from the Royal Institute on the subject after the vacation.

FRENCH PAVING STONE IN GREAT BRITAIN.

The British Consul at Cherbourg writes that the stone exported from Cherbourg is almost exclusively used for road-making purposes. This trade has shown a slight falling off during the past few years. It had been suggested that this was attributable to German stone exported from the Rhine district taking the place of French material in the United Kingdom. The Consul found, however, upon inquiry, that at the present time practically all foreign stone is being shipped to the United Kingdom in smaller quantities than heretofore. British quarries have been particularly active during the last few years, and the preference for materials quarried in the home country is without doubt the reason for this. Cherbourg quartzite is still extensively used, and is in high esteem in France. It is extremely hard and durable, and appears to give an excellent road, and its bright and cleanly appearance is sure, the Consul believes, to maintain for it popularity in the United Kingdom.

THE JAPAN-BRITISH EXHIBITION.

Under the auspices of the Imperial Government of Japan and with the approval of the British Government, arrangements have been completed for a Japan-British Exhibition to be held next year at the White City, Shepherd's Bush. The Hon. President and President of the Exhibition, H.R.H. Prince Arthur of Connaught and His Grace the Duke of Norfolk, respectively, invite support for the Exhibition. They refer to the value of the traditional art of Japan and the influence it has exercised on the fine and industrial arts of the world, and they and the Committee appeal to possessors of the treasures of British art to make a revelation of those works, many of which are but little known to the general public. It is hoped that the manufacturers and producers of this country, as well as those of the rest of the British Empire, will rise to the occasion by displaying the best of their respective productions in arts and industries.

Patents.

APPLICATIONS PUBLISHED.*

14,819 of 1908.—George French: Chimney cowls, ventilator outlets, and the like.

14,836 of 1908.—The Van Kannel Revolving Door Company, Ltd.: Revolving doors and the like.

14,968 of 1908.—The Van Kennel Revolving Door Company, Ltd.: Revolving doors and the like.

16,163 of 1908.—Robert Carl Fritz: Hood or top for chimneys and ventilating shafts.

18,878 of 1908.—Mano Halasz: Sliding sash windows.

19,775 of 1908.—Alfred Ernest Hall: Blow lamps.

20,868 of 1908.—John Henry Prelle: Method of and means for erecting light division walls, partitions, floorings, or the like.

22,181 of 1908.—Robert Morris Hague: Wall-holding brackets applicable to rainwater pipes.

2,697 of 1909.—Henry James Mills and Henry Coomes: Joint pipes to closet-pans and the like.

2,355 of 1909.—James Edward Scott: Building iron, steel, or composite ships, or other structures.

8,584 of 1909.—Alfred Le Grand: Apparatus for driving fence posts, piles, and the like.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 23.—By WILLIAM & WALTER JAMES (at Llandovery).

Llandovery, Carmarthen.—Outlying portions of the Pantglas Estate, 2,086 acres, f. (in lots)	£35,557

July 27.—By BARBER & SON (at Shrewsbury).

Walcot, Salop.—Walcot-gr. and Elmsdene Farms, 130 acres, f.	4,530

By RENDELL & SAWDYE (at Ashburton).

Widecombe-in-the-Moor, Devon.—Scobitor Farm, 51 a. 3 r. 21 p., f.	2,135

By W. & B. HOBBS (at Ashford).

Mersham, Kent.—Stone Green Farm, 201 a. 0 r. 39 p., f.	3,750
Wood Field, 11 a. 1 r. 37 p., f.	165
Sellindge, Kent.—Barn Field, 18 a. 2 r. 2 p., f.	290

By J. HANNAFORD & SON (at Chulmleigh).

Chulmleigh, Devon.—East Molland, West Molland, and Benley Farms, 247 acres, f.	3,034
Pasture land, 17 a. 2 r. 23 p., f.	1,060
Meshaw, Devon.—Meshaw Barton Farm, 130 acres, f.	1,969
Gidley Arms Inn and farm, 139 acres, f.	1,462
Arable and pasture land, 117 acres, f.	2,105

By H. J. CHEFFINS (at Saffron Walden).

Hempstead, Essex.—Blagdens Farm, 111 a. 3 r. 28 p., f.	£1,730
Moss's Farm, 22 a. 1 r. 9 p., f.	410
Nine cottages, f.	340

By EDWIN L. GARDENER (at Canterbury).

Thanington, Kent.—Hop, arable, and allotment land, 130 a. 2 r. 28 p., f.	5,630
Chartham, Kent.—Arable land, 2 a. 3 r. 34 p., f.	152
West Howfield Farm, 56 a. 0 r. 5 p., f.	1,150

By CRIDDLE & SMITH (at Helston).

St. Anthony-in-Meneage, Cornwall.—Impropriated tithe rentcharge 209*l.* 4s. 9d.	2,724
St. Martin-in-Meneage, Cornwall.—Tretharrup and Trelaminney Farms, 162 a. 2 r. 19 p., f.	3,750
St. Keverne, Cornwall—Traboe Farm, 130 a. 2 r. 13 p., f.	2,700
Polpidnick Farm, 48 a. 1 r. 16 p., lifehold	875
Three cottages and 2 r. 8 p., lifehold	110
Three houses, carpenters' shop, and 3 r. 38 p., lifehold	190

July 28.—By BALLS & BALLS (at Braintree).

Shalford, Essex.—Littles Farm, 135 a. 3 r. 7 p., f.	2,400

July 30.—By H. W. & C. SPELMAN (at Norwich).

Norwich.—133 and 135, Unthank-rd., f.	440
35 and 37, Newmarket-rd., f.	580
41, St. Augustine's-st., f.	640
24 to 32 (even), Exeter-st., f.	630
24 to 38 (even), Barn-st., u.t. 45 yrs., g.r. 12*l.*	610

By WHITTON & LAING (at Exeter).

Holcombe Burnell, Devon.—Kingsford Farm, 135 a. 1 r. 9 p., f.	1,070

August 4.—By WALLER & KING (on premises).

Locks Heath, Hants.—Battlefield House and 9 a. 1 r. 6 p., f.	2,000

By JAMES ELEY (at Boston).

Freiston, Lincs.—Arable land, 6 a. 3 r. 5 p., f.	550

By A. E. WILBY & SON (at Shepley).

Fulstone, Yorks.—Fulstone Hall Farm, 32 a. 1 r. 36 p., c.	1,100
Copyhold farm, 11 acres	525
Thurstonland, Yorks.—Upperfold Farm, 26 a. 3 r. 20 p., f.	640
Farm, three cottages, house, and shop, 24 a. 1 r. 10 p., f.	1,070

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Best Stocks	1	6	6	per 1000 alongside, in river	
Picked Stocks for Facings	2	10	0	"	delivered
Flettons	1	4	6	"	at railway depôt.
Best Fareham Red	3	12	0	"	" "
Best Red Pressed Ruabon Facing	5	0	0	"	" "
Best Blue Pressed Staffordshire	3	15	0	"	" "
Do. Bullnose	4	0	0	"	" "
Best Stourbridge Fire Bricks	3	14	0	"	" "
GLAZED BRICKS.					
Best White and Ivory Glazed Stretchers	10	7	6	"	" "
Headers	9	17	6	"	" "
Quoins, Bullnose, and Flats	13	17	6	"	" "
Double Stretchers	15	17	6	"	" "
Double Headers	12	17	6	"	" "
One Side and two Ends	16	17	6	"	" "
Two Sides and one End	17	17	6	"	" "
Splays and Squints	15	7	6	"	" "
Best Dipped Salt Glazed Stretchers	10	7	6	"	" "

Digitized by Google

BRICKS, &c. (*continued*).

GLAZED BRICKS (*continued*)—

	£ s. d.	
Headers	9 17 6	per 1000, deld. at rly. dep't.
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto. ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "

HARD YORK—

Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000, at rly. depôt.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13 10 0	15 0 0
Deals: best 3 by 9	13 0 0	14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards—1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft 4 10 0	5 0 0
Seconds	4 0 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 10 0	3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	4 15 0

JOINERS' WOOD.	At per standard. £ s. d.	£ s. d.
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	25 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Do. 3 in. by 9 in.	12 10 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg—First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 0 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
Battens	10 0 0	11 0 0
Pitch-pine: deals	18 0 0	21 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	0 3 9
Small " "	0 2 6	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	0 0 9½
¾ in. do. do	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0
Teak per load	17 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0

Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. " "	0 14 0	0 18 0
¾ in. by 7 in. white " "	0 10 0	0 11 6
1 in. by 7 in. " "	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in

JOISTS, GIRDERS, &c.

	In London, £ s. d.	or delivered Railway Vans, per ton. £ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	7 10 0
Compound Girders, ordinary sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	10 0 0
Flitch Plates	9 0 0	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	8 10 0

METALS.

IRON—	Per ton, in London. £ s. d.	£ s. d.
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	—
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
" " Galvanised	17 0 0	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0	—
" " 24 g.	10 15 0	—
" " 26 g.	12 5 0	—
Sheet Iron, Galvanised, flat, ordinary quality—Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	—
" " 26 g.	16 10 0	—

METALS (*continued*).

IRON (*continued*)—	Per ton, in London. £ s. d.	£ s. d.
Sheet Iron, Galvanised, flat, best quality—Ordinary sizes to 20 g.	18 0 0	—
" " 22 g. and 24 g.	18 10 0	—
" " 26 g.	20 0 0	—
Galvanised Corrugated Sheets—Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	—
" " 22 g. and 24 g.	14 15 0	—
" " 26 g.	16 5 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	—
" " " 26 g.	15 0 0	—
Cut Nails, 3 in. to 6 in. (Under 3 in., usual trade extras.)	10 10 0	11 0 0

LEAD, &c.	Per ton, in London. £ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 0 0	—
Pipe in coils	16 10 0	—
Soil pipe	18 10 0	—
Compo pipe	19 10 0	—
ZINC—Sheet—Vielle Montagne	26 10 0	—
Silesian	26 5 0	—
COPPER—Strong sheet per lb.	0 1 0	—
Thin "	0 1 1	—
Copper nails "	0 0 10	—
Copper wire "	0 0 10	—
BRASS—Strong Sheet "	0 0 11	—
Thin "	0 1 0	—
TIN—English Ingots "	0 1 5	—
SOLDER—Plumbers' "	0 0 7	—
Tinmen's "	0 0 9½	—
Blowpipe "	0 1 0	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4¾d. " "
" fourths	4½d. " "
Flute Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
¼ "	2¾d. " "
½ "	2¾d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.	£ s. d.	
Raw Linseed Oil in pipes	per gallon	0 2 2
" " " in barrels	"	0 2 3
" " " in drums	"	0 2 6
Boiled " " in barrels	"	0 2 6
" " " in drums	"	0 2 9
Turpentine in barrels	"	0 2 11
" in drums	"	0 3 1
Genuine Ground English White Lead	per ton	20 10 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ABER BARGOED (Mon.).—For rebuilding of Coedybrain Farmhouse. Mr. H. Caldwell, C.E., Blackwood, Mon.:—

Williams & Sons	£729 0	Vodden & Lee	£514
Davies & Williams	590 10		

ANDOVER.—For kerbing and paving works. Mr. R. Walter Knapp, Borough Surveyor, Town Hall, Andover:—

Annett & Son	£136 18 9	J. Douglas, Southampton*	£109 9 6
Beale & Sons	129 3 0		
Grounds & Newton	120 0 0		

ANSTON.—For sewerage and sewage disposal works for Kiveton Park Rural District Council. Messrs. Berrington, Son, & Watney, engineers, Bank-buildings, Lichfield-street, Wolverhampton, and at Westminster:—M. A. Boswell, School-street, Wolverhampton £3,381 12 11

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3472. AUGUST 21, 1909.

Contents.

	PAGE
London's Electric Light Standards	201
Land Taxation	204
Notes	205
The Architectural Association: Fortieth Annual Excursion	206
The Old Leathersellers' Company's Hall	208
Elementary School Planning	209
Notes from France	214
Fifty Years Ago	214
Illustrations:—	
Burslem Municipal Buildings	214
Sketches with the Architectural Association Excursion	214
The Order of the Mausoleum at Halicarnassus	214
St. John's Hospital, Heytesbury	215
Books Received	215
Rust and Defective Welds in Iron and Steel	215
The London Master Builders' Association	217
Banking Premises, Parkstone, Dorset	217
National Housing Reform Council	218
The Institution of Municipal Engineers	219
Competition News	219
Correspondence:—	
London County Council General Powers Bill	220
Slating	220
London and District Borough Councils	220
Projected New Buildings in the Provinces	220
Obituary	221
General Building News	221
Stained Glass and Decoration	222
Appointment	222
Sanitary and Engineering News	222
Miscellaneous	222
Patents	223
Some Recent Sales	223
List of Competitions, Contracts, etc., Open	224
Prices Current	226
Tenders	227

SUPPLEMENT:—

Reviews of Books.

H. I. Triggs's "Town Planning: Past, Present, and Possible"; J. J. Stevenson's "A Restoration of the Mausoleum at Halicarnassus"; C. J. Holmes's "Notes on the Science of Picture-Making"; J. A. Ward's "Fresco Painting, its Art and Technique."

Magazines and Reviews.

Illustrations.

Selected Design for Proposed Municipal Buildings, Burslem. Messrs. Russell & Cooper, Architects.

Sketches with the Architectural Association Excursion. By Mr. W. Curtis Green.

The Order of the Mausoleum, Halicarnassus.

Illustrations in Text.

	PAGE
London's Electric Light Standards:—	
Fig. 6	201
Figs. 1 to 5	202
Figs. 7 to 11	202
Figs. 12 to 18	203
Gablet from Orchard House, Broadway	208
The Old Leathersellers' Hall, next the Church of St. Helen's, City	208
Elementary School Planning:—	
New Council Schools, Biddulph, Staffs	209
Derbyshire Elementary Schools	210
Derbyshire Infants' School	211
Elementary School, Letchworth	211
Undercliffe School, Bradford: New Infants' Department	212
Open-air School at Thackley	213
Asblin's-place, Drury-lane: A London Dairy, 1859	214
St. John's Hospital, Heytesbury, Wilts	215
Rust and Defective Welds in Iron and Steel:—	
Figs. 1 to 3	216
Fig. 4	217
Banking Premises, Parkstone, Dorset. Mr. G. A. Bligh Liversay, F.R.I.B.A., Architect:—	
Ground Floor Plan	217
View	218

London's Electric Light Standards.

A Study of Incongruities.

SOME time back the Postmaster-General made a speech to a society composed of post-office employees who practise art in their leisure hours. He is reported to have said that he contemplated offering them a prize for the best design for an artistic telegraph post. If this is to encourage imitators of that preposterous product of modern days, the engineering ornamentalist draughtsman, we cry out for mercy and plead that the telegraph poles be left in the charm of their candid nakedness. And, if prizes were of any use towards inoculating the brain of the engineering ornamentalist with a few of the simple rational principles which differentiate between beauty and ugliness in *anything*, there would be a more helpful field for the offer in the problem of our street standards for electric light.

They are very much in want of a lift up out of the hands of the engineering ornamentalist, but when we say this we have also to acknowledge a law in psychology which is noticed by all students of modern art history, namely, that every newly invented contrivance, as it comes into evidence in our daily surroundings, has apparently to pass through a preliminary evolutionary tentative period of shapings, more or less raw and vulgar, till, from the flounderings of many minds, there emerge types which gradually satisfy, little by little, our sense of fitness, and finally—very little by little—take on terms of beauty.

The electric standards of great London are still very much in the painful evolutionary condition we have referred to; so much so that we are left to wonder how it is that, among the conglomerate authorities of London, there apparently exists so little æsthetic culture as to remain contented with the existing designs.

The examples we publish are not from back streets or inferior neighbourhoods, but from our foremost West-end thoroughfares—the focus centre of great London. Fig. 1 is the sketch of the electric object which dots the whole length of Oxford-street. A series of Fig. 2 gives the finishing touch to the length of North Regent-street. After crossing Oxford-street, Regent-street South takes up the artistic unities by Fig. 3, which is the thing supplied all the way to Piccadilly-circus, and across into Waterloo-place even unto dignified Pall-mall, along whose classic vista a row of the same incongruous pattern is imposed. In the Haymarket and Northumberland-road and Charing Cross-road and Strand are Fig. 4 for the centre-way standards, and Fig. 5 for those to the side pavements.

Along Fleet-street there is a recently installed new device. The narrowness of the way rendering standards impracticable, there have been substituted brackets attached to the houses. The pattern of these two rows of vernacular ironmongery is Fig. 6, and, in order that the standard to the centre shelter kerb be in harmony with these brackets on each side, Fig. 7 has been thoughtfully devised.

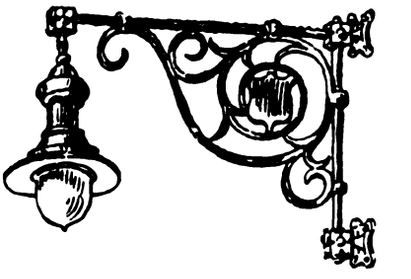


Fig. 6.

The fine opportunity for making these brackets individually agree with the features of each house against which they are fixed, has been availed of in one instance—but one only. This admirable exception has been made by Messrs. Hoare, the bankers. Against their severely classic and dignified old-time elevation they have put a well-wrought bracket of rich but appropriate design.

Opposite the Brompton Oratory, at the beginning of the splendid vista with it and the new great front of the Victoria and Albert Museum and the Natural History Museum, we sketched Fig. 8. After that there came to our mind the Buckingham Palace-road. We recalled that this street, in its transition from a shabby old conglomeration into modernity, has had several strokes of luck in favour of true art; among them a good Gothic church, and Stevenson's admirable row of small private mansions, and—to crown all—the whole boundary wall to an immense railway station, treated in a monumental way without a single poster sheet smeared on it—truly a gigantic and unique triumph of the æsthetic instinct over commercialism and money profit. We wondered if this

Digitized by Google

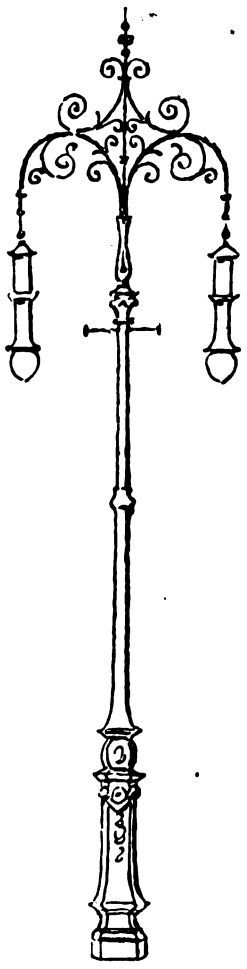


Fig. 1.

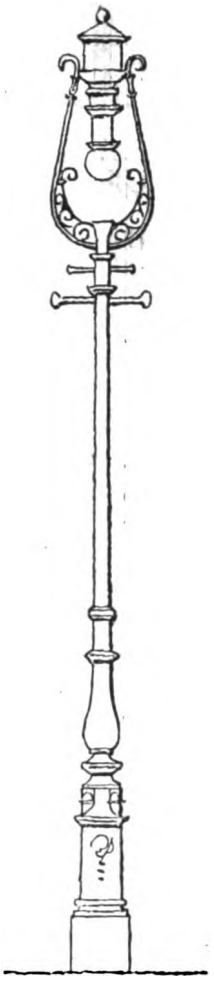


Fig. 2.

Fig. 3.

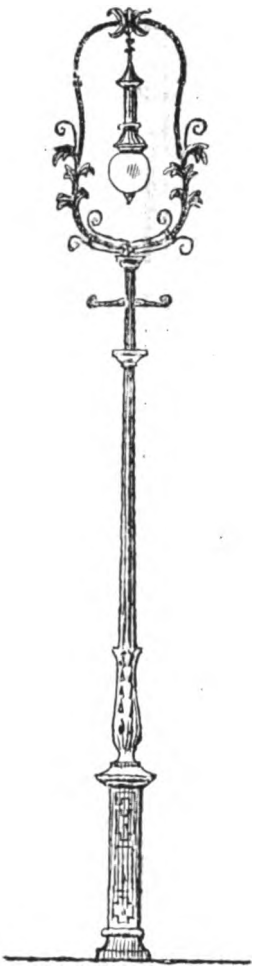


Fig. 4.

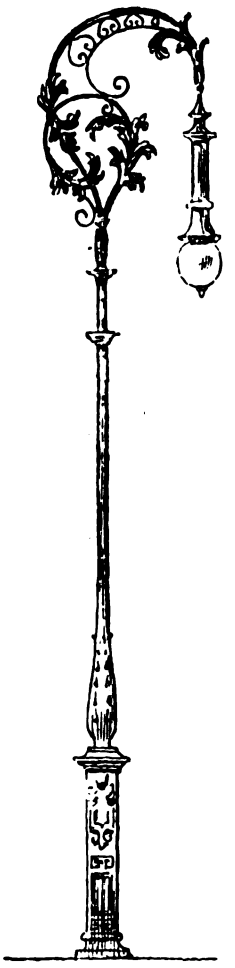


Fig. 5.

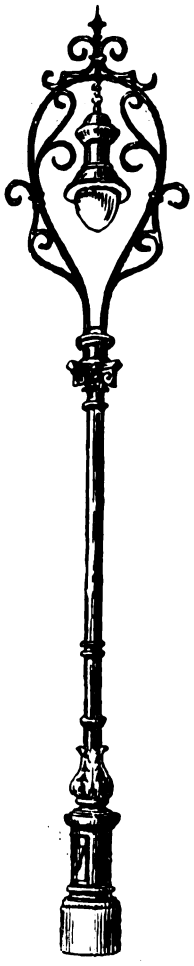


Fig. 7.

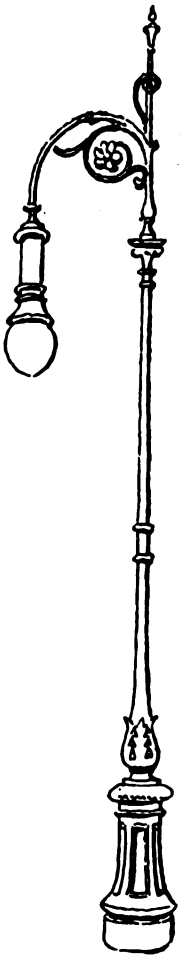


Fig. 8.

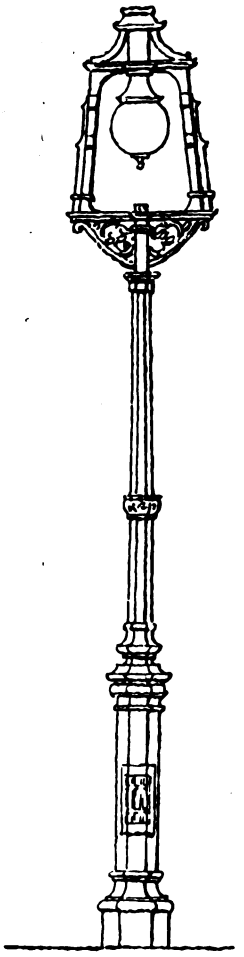


Fig. 9.

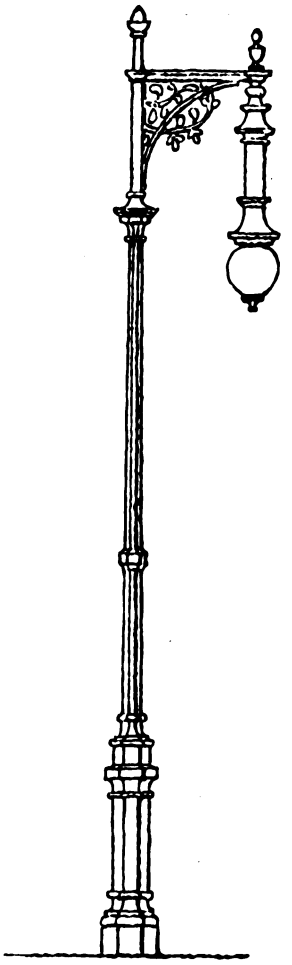


Fig. 10.

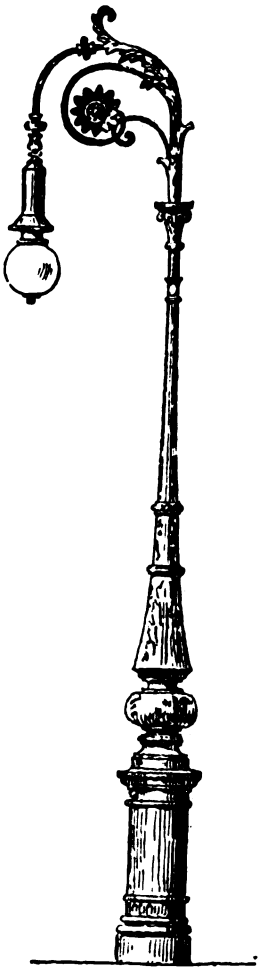


Fig. 11.

Digitized by Google

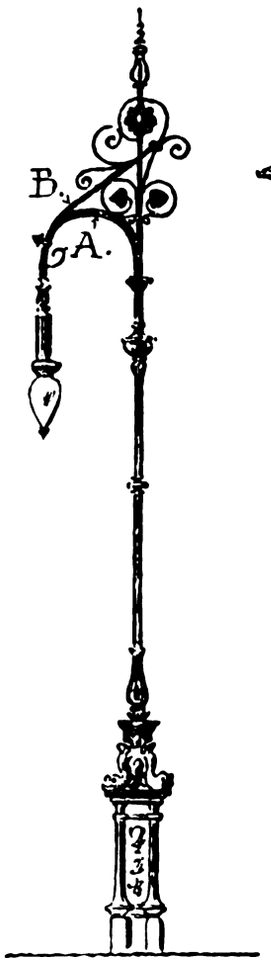


Fig. 12.

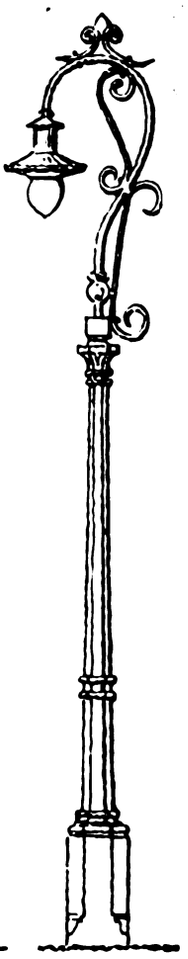


Fig. 13.

favoured road had also met any special luck with its electric standards.

On our way there, while passing Eaton-square, we found our official engineer had supplied to the whole length of that classic perspective Fig. 9; something, we suppose, which is intended by way of a contrast to the aristocratic square and its admirable Greek church; a set of props in the style of the Mid-Victorian-Methodist-Chapel-Gothic. Or is it Egyptian? On reaching Buckingham Palace-road we found Fig. 10 and felt disheartened.

We went along the Buckingham Palace-road to Buckingham Palace itself, and entered the gates to Sir Aston Webb's fine architectural setting to the great monument of Queen Victoria. We were curious to see how the electric light problem was treated at this supreme spot. We found Fig. 11; a regiment of them dotted over the place and annoyingly coming into each fresh *coup d'œil* of Sir Aston's work as we walked about. They are also continued the whole length of the great processional avenue to Charing Cross. They all of them look incongruously unassimilated to their surroundings, but we understand that these are eventually to be removed. They are not, of course, by Sir Aston Webb.

Fig. 12 sketches the type of electric light standard along the Thames-embankment. The details, particularly of the lower parts, are evidently done by an able modeller; they are in a mannerism which has got to be called "*l'art nouveau*," and our catholicity does not make us object to them on that score at all. It is not possible to show these good details in a small sketch and taken from a point of sight beyond a short length, but the good members among the details emphasise the incongruities of the others. There has been lacking, at the outset, that very little amount of constructional architectural quality which would have given a homogeneous design. How can any amount of nicety of ornamental detail tackle such phenomena as A and B, in which the eye looks at an extra thick bent pipe capable of supporting the weight of scores of

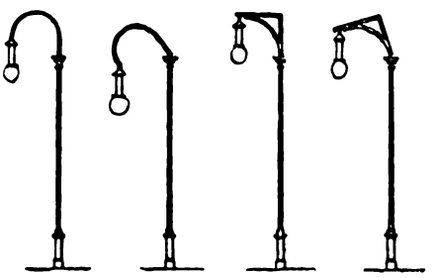


Fig. 14.

lamps, but about whose quality of conesive metal fibre the designer was so nervously doubtful that, to save a possible subsequent catastrophe, he tied it up, with a tensile rod, to the main post? How was it possible to amalgamate with "ornament" two such glaring, silly constructive lines as A and B?

We conclude our sketches of contemporary London electric light standards

Fig. 15.

Fig. 16.

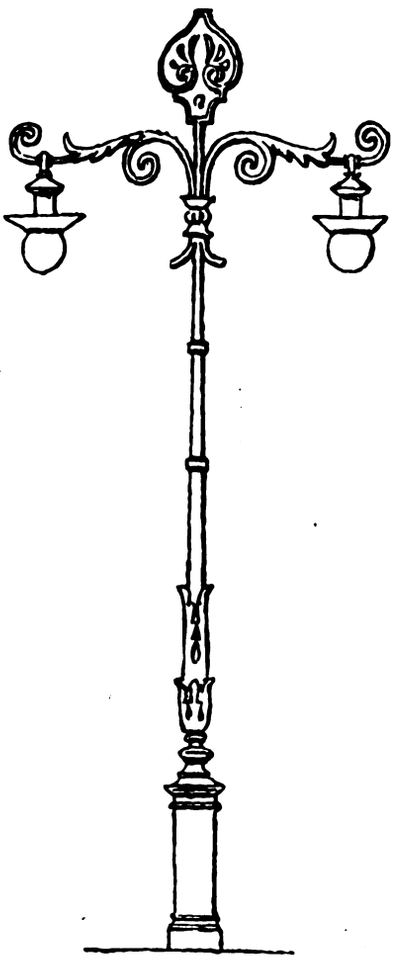


Fig. 17.

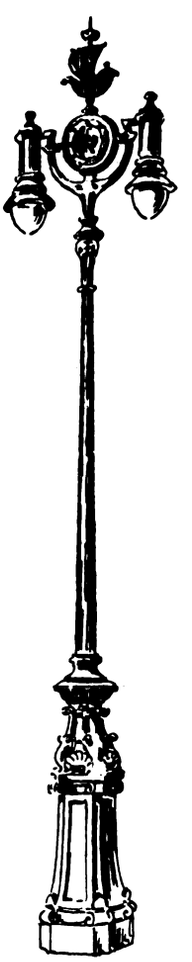


Fig. 18.

Digitized by Google

by a *chef d'œuvre*, Fig. 13, near Mr. Mountford's admirable Town Hall at Battersea. Can it be conceived that, after these many years of art schools in every parish, a draughtsman could have been found who could perpetrate such an object as Fig. 13? The phenomenon is a mystery.

Along what direction of endeavour are happier results more likely to fructify in our electric light standards?

One main point which seems to us open to protest is an entirely objectionable feature which we notice is embodied more or less in all the examples of existing electric light standards we have sketched. This feature is, we think, in essence radically wrong and is to blame more than anything else for the poor result obtained. It is the idea of beginning with an assumed architectural regular column having a sham capital at top (Fig. 14) on which is stuck a bent reed or a bracket, both objects having no integrity with the staff below to which they owe their maintenance in position. The feeling conveyed is that the affair is going to snap off at the capital.

An architectural column with its capital (as distinguished from a reed bent at top, or a straight staff *against* which may legitimately be put a bracket, and in both cases continued down into the ground for fixity) is a conception which tells of a very different purpose. A column and its capital is for supporting a perpendicular weight received from above; the capital with its abacus emphasising, by its spread surface, the place where that vertical pressure is received. Above it the idea is not admissible of cockling a stick, bent or otherwise, subjected to horizontal thrusts in various directions. Abolish the capital, and the bent reed becomes a rational idea, and so does the bracket when there is the suggestion of a rigid staff passing up above the bracket and against which it is legitimately fixed. Furthermore, capitals are not rings or straps round a staff or stem; these are legitimate and permissible.

Another point we note has reference to the actual electric light apparatus, as distinguished from the support from which it is suspended. The former consists of a glass globe, containing the light, above which is the mechanism, covered by a metal jacket and hood exposed to view and having, in its shape, no accord with the rest of the conception. The result is that the apparatus aggressively asserts its existence in glaring discord to the standard and its decorative scheme. Might not the covering be shaped with more sympathy without injury to practical considerations? Such as something suggestive of a flower bud? This idea lends itself also to the introduction of a boldly emphasised reflector of the upper rays. There is no reason for spending the light upwards. In a small way this has been recognised in some instances such as Fig. 6, in Fleet-street, and, in a bolder way, the idea is suggested by a standard (Fig. 15) in Hyde Park, near the Marble Arch, which is terminated by a dominating canopy. There is no reflector in this case, but only a black void upwards under the canopy, but the conception favours the idea. This standard appears of foreign origin. It is worth studying, showing in several respects a type in a right direction. Our sketch is partly from memory.

Whilst considering the subject our thoughts went dreaming of old signposts and, in imagination, translating them into electric light standards untrammelled by self-consciousness, and in the spirit in which we fancied they would have done it in the old days. Many old village signposts came to our mind, and among them the well-known one to the Duke's Head Inn at Leatherhead. Fig. 16 is the Duke's Head sign, with practically little more change than the substitution of the electric lamp for the signboard and an iron post for a wood one.

In the matter of twin lamps for road centres, such as those in Oxford-street (Fig. 1), we sketch a suggestion (Fig. 17) as a variation on the bracket principle which might mature to something on right lines.

Fig. 18 is a rough sketch of the new standards around the podium of the Queen Victoria Memorial. The treatment of the head of these is in a true spirit of constructional design.

LAND TAXATION.

THE proposals of the Government as expressed in the Finance Bill alter so much from day to day that it is difficult to follow them. The important modification that the costs of valuing the land shall be borne by the tax-payers collectively and not be placed upon owners individually has to some extent met some of the objections urged against the Bill, but has by no means rendered the Bill unobjectionable. The owner of land will not have to furnish a valuation of his land obtained at an expense wholly disproportionate to the tax he is called upon to pay, but it must be remembered that if he takes no steps he will have to accept the Government valuers' valuation, a valuation which it appears is to be made by officials working at high pressure and at a low scale of remuneration for the character of the work involved.

The objections to this form of taxation are only to a small extent diminished, since it is apparent that the wealthy land-owner can avail himself of the provisions of the Bill to rectify the Government valuers' valuation—he will object to the valution, give notice of reference, and finally appeal to the courts, and on a large estate it may well pay him to do so—but this will not be the case with small properties or with the builder with small capital, all of which is engaged in his business or in the land he is holding to develop, and the small land-owners will perforce have to accept the "happy dispatch" provided for them at the Government's expense. The expenses of the valuation will so diminish any revenue that can be derived from these new taxes, at any rate for the first few years, and so long as the taxes are kept within the limits at present proposed that on the principle *de minimis non curat lex*, it would appear that for revenue purposes they might well be dispensed with. No one can have read the debates on the undeveloped land tax without perceiving the disquietude evinced on both sides of the House as to the effect it may have not only upon building development, but also on Town Planning and open spaces. The building trade, which depends upon an altering supply and demand and is very sensitive to all kinds of considerations affecting the market in varying localities, will be seriously encumbered with this class of legislation. Take the latest concession of the Chancellor of the Exchequer in connexion with building estates in process of development, which only exempts estates where it can be shown that at least 100*l.* per acre has been expended in developing the land within the last ten years with the further limitation that the expenditure must be confined to roads, including paving, kerbing, metalling, and other works in connexion with roads or sewers. If the building trade has been depressed during the past ten years under more or less normal conditions, is it likely to be revived when such clauses as the above come into operation and when nearly every operation is subject to the provisions of a complicated, if not incomprehensible, Act of Parliament?

Some incentive should surely be offered to those developing building estates to preserve open spaces, and thus to improve the conditions of life in newly developed areas, yet we find such spaces as Berkeley-square subjected to taxation unless, according to Mr. Haldane, the public are admitted indiscriminately, or, according to the Attorney-General, they come within a new amendment leaving it for the Commissioners to be satisfied "that the land is being kept free of buildings in pursuance of any definite scheme . . . for the development of the area of which the land forms part and that it is reasonably necessary in the interests of the public or in view of the character of the surroundings or neighbourhood that the land should be so free from buildings." Why should a person developing a building estate and leaving open spaces at a loss to himself have to obtain the approval of the Commissioners? Rather than embark on such an inquiry he will add to his profit and save himself from taxation by building over all the land.

At the time we are writing, the latest concession of the Government is to exempt gardens of less than 5 acres from undeveloped land tax. We welcome this concession, as we have always urged that large gardens should be encouraged as contributing to health in suburban areas, but as each concession diminishes the importance of the tax for revenue purposes, is it too much to expect that the undeveloped land tax should be abandoned altogether as hindering development and imposing burdens on a depressed industry in relation to transactions at their most risky and speculative stage?

MORAVIAN CHURCH, KINGSTON, JAMAICA.—Messrs. W. D. Church & Son, of London, have been appointed architects for the new Moravian church to be erected in Kingston, Jamaica; the old building was destroyed by the earthquake on January 14, 1907, and 10,000*l.* is now being raised to replace it.

Digitized by Google

NOTES.

Blackfriars Bridge.

WITHIN the next three or four weeks a welcome addition will be made to the cross-river communications between the City and Southwark, by the completion of the Blackfriars Bridge widening and the connexion of the northern and southern tramway lines of the County Council. The inconvenient and obstructive tram terminus in the middle of Blackfriars-road will become a thing of the past, and daily passengers to and from the City will no longer have to consider the relative demerits of a dusty or muddy walk, or a tedious ride in one of the omnibuses. In addition to the remodelled roadway, 73 ft. wide, the new footwalks will each have the width of 16 ft., thus providing ample space for pedestrian traffic. The present year will probably witness also the completion of the subways beneath the dangerous crossing at the north end of the bridge—a place which will be still more fraught with peril after the new tramlines come into operation. As the pavement of the subways will be not more than 10 ft. below street level, there is reason for anticipating the general use of the new communications on the part of the public—to whom personal safety is apparently too dearly bought if its attainment involves descending and ascending more than a very limited number of steps.

Abandonment of the Proposed Building Code, New York.

ARCHITECTS and structural engineers in New York have reason for congratulating themselves on having escaped the disabilities foreshadowed by the new building code, which was vetoed by the Mayor a few days ago. Other people besides those practising in New York may justly feel relieved at the abandonment of the regulations, because for some years past the building codes of New York City have been taken as models by various communities, and to bring the matter home to British interests we may point out that if the new law had been passed it would in all probability have influenced the clauses of future building regulations drawn up by municipal authorities in this country, and notably by the London County Council under the powers about to be conferred by Parliament for the amendment of the London Building Acts. In commenting upon the veto of the recently-defunct ordinance, the *Engineering News* makes a suggestion very much to the same effect as one we put forward a week or two ago in connexion with the formulation of rules for reinforced concrete construction. Our contemporary says that the task of discriminating between good and bad requirements must be placed in more capable hands than those of aldermen, and urges that the American Society of Civil Engineers and the American Institute of Architects should insist upon their right to take a share in the formulation of the new building code which is still required for New York. Our own architectural and engineering institutions would thoroughly deserve the gratitude of their constituents and the public generally if they would bring strong pressure to bear upon the County Council with the object of securing due consideration to their views in respect of new building regulations for London.

London Water Supplies.

THE annual report of the Metropolitan Water Board states that the average daily supply during 1908-9 was 224,200,000 gallons, of which 57·27 per cent. came from the Thames. The daily average quantity gauged at Teddington for the same year was 983,700,000 gallons. Thus, in round figures, the open mouth of London was proved capable of drinking a quantity of water equal to nearly one-fourth of the volume actually passing over the weir at Teddington, although the proportion of natural flow abstracted by the Water Board and other authorities was only 12·04 per cent. The total number of services in Water London at the end of the financial year showed an increase of 12,390 which, with the increase of 0·39 gallons per head, accounts for the augmented average daily supply of 4·8 million gallons. Although no addition was made during the year to the effective storage reservoir capacity of 8,844,700,000 gallons, it should be noted that reservoirs with the capacity of some 6,000,000 gallons are in course of construction and authorised but not commenced. The report contains references to the research work, to which we have called attention on previous occasions, showing that the storage of raw water is a most valuable safeguard, tending to foster a trustworthy sense of security on the part of the Board and the public alike.

The Newport Dock Disaster.

IN commenting upon the unfortunate collapse at Newport, we suggested in our "Note" of July 10 that the disaster might be attributed to movement of the earth owing to the disturbance of natural conditions insuring equilibrium. From the evidence of Mr. R. C. H. Davison, M.Inst.C.E., consulting engineer to Messrs. Easton Gibb & Son, the contractors for the Newport Dock extension works, it appears that our surmise was substantially correct, that witness stating the conclusion that the collapse was due "to a sudden unforeseen movement of the surrounding earth, and not to pressure." If pressure had been a primary cause then the design of the timbering might reasonably have been regarded as inadequate. We are pleased to find that no such imputation has been brought against the work of the contractors, by whom every precaution seems to have been taken for the protection of their workmen. Mr. Davison and Mr. Easton Gibb agreed in welcoming any future aid that might be forthcoming as the result of Government inquiry with the object of rendering deep-trench work less dangerous. So far almost the only tangible hint for guidance afforded by the coroner's inquest is that more complete and vigilant supervision might perhaps have been exercised by the gangers and that more frequent reports as to conditions and indications thereby revealed would have been helpful to the technical staff of the contractors.

Changes at Whitehall and Old Scotland-yard.

THE manifold alterations in progress on the Crown land involve the demolition of premises in Old, or Great, Scotland-yard; the laying out of a road 40 ft. wide from Whitehall through the yard to Victoria-embankment; the stopping up of an accommodation road in Great Scotland-yard; the erection of a new Central London recruiting depôt in lieu of that at the rear of the National Gallery; and the widening at its western end of Whitehall-place. The premises to be pulled down embrace the detached or island block, and the offices, along the north side, of the Chief Inspector of Reformatories and Industrial Schools. The latter building had been the Palace Court, as transferred thither from Southwark in 1801 and served, until its abolition on December 31, 1849, by judges and officers of the Marshalsea Court of the Queen's House, for actions arising within twelve miles—the City excepted—around Whitehall Palace. That building and the island block in the middle of the yard were taken over for purposes of the Metropolitan Police upon the establishment of the force in 1829; the Police (headquarters) remained there until they removed twenty years ago to New Scotland-yard, Canon-row. Of late years the yard has been entered from Whitehall through the archway at the side of No. 1, Whitehall; J. Chawner rebuilt the archway in 1824, carrying it up another floor—see, in the Crace collection, his coloured drawings of the old and later archways. The archway succeeded the former northernmost gate of the palace precincts. No. 1, Whitehall, which has given way to the new offices for the Woods and Forests, etc., was built by Robert Adam in 1771, and was a characteristic example of his style carried out in brickwork. There is a view of the elevation in the "Crowle" Pennant, British Museum; the plate, by R. Blyth, is lettered: "Elevation of a house at Whitehall restored as a board-room for the Paymaster-General," etc. Above the attic (fourth) story was a trophy of arms, with the lion and unicorn as supporters.

Fairseat House, Highgate Hill.

THE House of Lords Committee have found as proved the preamble of the London County Council's Tramways and Improvements Bill, but decided that for carrying the Highgate tramway over the site of Fairseat House no more of the property should be included within the deviation limits than is necessary for the road widening. The extent of the contemplated encroachment will thus be minimised. Fairseat House was the residence of the late Sir Sydney H. Waterlow, Bart., who twenty years ago presented to the Council on behalf of the public the grounds, extending over 29 acres, of his Fairseat estate, together with Lauderdale House, on the southern slopes of Highgate-hill, as a place of resort and recreation—since known as Waterlow Park. He further gave a sum of 6,000*l.* towards the subsequent acquisition of Fairseat House, at that time leased to a tenant, with its 3 acres of lawns and gardens. Lauderdale House, the home of John, Duke of Lauderdale, and, it is said, of

Digitized by Google

Nell Gwynne, was restored, under the directions of the late Mr. Blashill, by the Council; to it appertained a fine old kitchen garden flanked by a massive buttressed wall of red brick, moss-grown and over-capped with ivy.

A New Architectural School.

THE Birmingham Municipal School of Art will open on September 13 the first session of their new Day School of Architecture. The school course will be spread over four or five years. The intention is that the first two years should be spent at day classes, taking the place of the first two years of articled pupilage. The latter two or three years will be spent at evening classes, and will run concurrently with articled pupilage. The fees will be very moderate, and the school should do much to maintain the standard of architecture in the Midlands. Third and fourth year students will have the opportunity of using the laboratory equipment of Birmingham University for their scientific studies, such as testing the strength of materials, etc. Several prominent architects in the Midlands have promised to forego the whole or portion of the fee ordinarily received by them in the case of pupils who shall have attended the school. We wish the venture every success; certainly the facilities for learning the practice of architecture have never been as great as at the present day. We can only hope that the number of first-class men thus produced will find sufficient scope for their abilities.

THE ARCHITECTURAL ASSOCIATION:

FORTIETH ANNUAL EXCURSION.*

CHELTENHAM AND NEIGHBOURHOOD.

Third Day—Wednesday.

THE whole of this day was devoted to Gloucester. Meeting at the cathedral at eleven o'clock, the party was received by Mr. F. W. Waller, under whose able guidance the building was inspected. It has already been better described than can be done here; reference should be made either to Mr. Waller's book or to the excellent cheap handbook by Mr. Massé, in Bell's Cathedral Series, in which many of his interesting diagrams are reproduced. The condition of the central tower, however, has lately been causing anxiety, and precautionary measures are now being taken, in the course of which numerous interesting facts have come to light. These were most lucidly explained by Mr. Waller, with the help of a fine series of accurate ½-in. scale plans through the various stages and other diagrams which he has prepared, and they may be set on record here. The dead weight of the tower has been calculated at 4,700 tons. This is carried by the four piers of the crossing—parts of the original Norman church—which are loaded to the very daring extent of 12 to 13 tons per foot super., or about double what would be considered allowable in modern practice. The lower stages of the tower are of substantial construction; they set in about 9 in. inside the base which carries them. Probably with the idea of reducing weight the topmost stage is of startlingly slender substance—in the panels only 8 in. and 9 in. thick, while the skeleton corner pinnacles are supported at their inner corners only by light squinch arches thrown across the angles of the tower at the level of the roof. These pinnacles weigh 25 tons each! The wind pressures have been calculated as follows: 30-mile gale, 7½ tons on any one side, or if diagonally, 12 tons on two inclined faces; 60-mile gale 36 tons and 45 tons respectively.

A recent addition to the cathedral which excited great admiration was the beautiful series of windows by Mr. Christopher Whall in the north and south walls of the Lady Chapel, and a window by the same artist at the east end of the Chapter House. Mr. Whall's windows are translucent; they have no affectations of archaism in the figure drawing, which is nevertheless restrained and decorative; their colour is sparkling, and the beautiful opalescent character of the white glass used, in combination with their other qualities, renders them extremely satisfying.

Many members elected to return to the cathedral during the afternoon, after lunching at the New Inn, the XVth century building built by John Twynning for the accommodation of the large number of pilgrims visiting the shrine of Edward II. Others, however, accepted the alternative invitation of Mr. Waller, and were conducted by his assistant, Mr. Trew, on a tour of inspection of the numerous old buildings in the city. Several fine Georgian houses were among these; the house known as Forester's Hall, and one situated in Westgate-street, standing back from the general frontage line, with ramped wing walls and piers with urns effectively treated, received the most attention. There are also numerous examples about the city of fine gate piers and urns. The five old churches of Gloucester were on this occasion neglected by the party, save that the virility of design of St. Michael's tower at the corner of Eastgate-street and Southgate-street caused an involuntary halt in passing to admire the daring unconventionality of the XVth century builders who could produce such a design. Its solidity of effect is in most striking contrast to the cathedral tower.

The heat experienced during the first two days of the excursion on this day reached its climax, and seriously militated against the quantity of work produced.

Fourth Day—Thursday.

The programme for this day was one of the best, and included some interesting modern work. Starting from Cheltenham about ten o'clock for Bourton-on-the-Water, brakes conveyed the party thence to Upper Slaughter, where the splendid Manor House, lately used as a farmhouse, but now in course of repair for the occupation of Mr. Brassey, was inspected. A vote of members would probably decide on this as the most delightful of all the fine old houses visited during the excursion. The entrance front—a charming natural composition of four gables, the one above the projecting porch less than the remaining three—faces west to a walled entrance court, and the L-shaped house stands on land sloping rather sharply to the north-east, the arm of the L running east and forming an extended south front with three equal gables. The texture of the walling in very thin rubble courses with raked joints, a soft cool grey in colour, harmonises finely with the quoins and window dressings in worked stone (apparently Guiting), presenting a glowing patch of warm yellow-brown here and there. The simple and restrained Elizabethan vernacular style (so different from the swaggering pretensiousness of the fashionable work of the period) is a delight to look upon, and there is that obvious rightness about the detail, whether in chimneystacks, parapets, finials, or mullions, which can only result from constant familiarity with the use of good materials and natural methods. It is perhaps worthy of note that the parapets in these gables are only just sufficiently high to allow the copings to cover the stone slating behind—gable copings in modern work are generally perched altogether too high, producing a lean appearance.

The porch front—an essay in the "fashionable" manner—is either a slightly later addition or the imported work of a more self-conscious designer; probably the latter. In it "the Orders" make their appearance. One feature of recent insertion has a very damaging effect upon the house. Originally the water from the roofs was carried off by plain stone projecting gargoyles or rain-water shoots. These still exist, but have been pierced and connected to square cast-iron rain-water pipes of huge and ungainly dimensions. Painted "light stone colour," they are much in evidence.

Very little time was available for a visit to the church, standing in a churchyard sloping steeply to the north. It is, however, rather an interesting structure with a transitional Norman nave of three bays and western tower space. The arcade is of chamfered pointed arches supported on shallow square caps of great spread, and the chancel and tower arches (also pointed) have chevron and other Norman enrichments, but appear open to suspicion. The church was restored in 1877. There is a wide north aisle with a modern mortuary chapel at the east end.

An interesting stone bell-cot surmounts the east gable of the nave. The tower is square and low in proportion, with battlements and slender corner pinnacles. Its upper stages are of later date than the nave. In the churchyard is an old stone font dismounted from its pedestal.

Adjoining the churchyard on the south-east is a charming group of cottages altered by Mr. Lutyens and shown in Mr. Curtis Green's drawing.

Leaving Upper Slaughter with reluctance, a drive of about two miles brought the excursionists to Nether Swell Manor, a large modern house by Mr. E. Guy Dawber, who kindly attended and presented the members to Mr. Scott, the owner. After an inspection of the house, originally built in 1905 and recently largely extended, the party were most hospitably entertained to lunch by Mr. Scott, who was afterwards thanked by the President in felicitous terms for permitting the invasion. Drawings of the original house and the recent additions have been exhibited in the Royal Academy, and in our issue for May 15 last an illustration of the building was given.

The garden court facing the entrance and the terraces (with fine urns from Versailles), overlooking a fine expanse of country to the west, are delightful features, and Mr. Dawber's use of local material is very successful. The walling stone is quarried on the estate, and set with raked joints and dressings of Farmington stone—a material with excellent weathering properties. The roofs and some of the gable walls are covered with stone slates from Eyford, near by. All the casements and glazing are executed by Mr. John Pye, of Moreton-in-the-Marsh. The recent alterations have been most cleverly contrived, and have resulted in some picturesque effects, legitimate only when naturally achieved by such necessities.

Chastleton House, the next place to be visited, was reached after a drive of about 7 miles, mostly through shady lanes which presented a welcome relief from the heat of the cloudless sky.

The party were received in the hall by the owner, Miss Whitmore Jones, and were afterwards kindly conducted through the house by Mr. Whitmore Jones, her nephew. Chastleton was built in 1603 by Walter Jones, and is in quite a different category from Upper Slaughter, Charlton Abbots, or any other of the manor houses visited during the excursion. Its difference lies in the fact that it is devised upon a formal rather than a natural plan. This is illustrated in Mr. Gotch's "Early Renaissance Architecture," and is in the form of a square with a small internal courtyard—practically the counterpart of the modern lighting area. The south or entrance front has two projections symmetrically arranged on either side of the axial line of approach. One forms the porch and is entered at the left of the central steps; the other serves as the bay on the hall dais,

* Continued from last week.

Digitized by Google

which is intact—though, in fact, it is a bay only in name, since it contains no side windows. On the east and west fronts are centrally-projecting towers containing staircases, and on the north front a central bay. Each front is, therefore, a symmetrical composition in the main, though a fine chimney-stack well grouped with one of the gables of the west front introduces a spice of irregularity there. The most striking characteristic of the house is its lofty proportion, accentuated by the staircase towers and narrow projections

The various rooms are full of interesting detail, and contain much fine furniture and tapestry. The hall screen is an excellent example of Jacobean work, and the room entered from behind it has Georgian panelling. At the opposite end is the little parlour, with some good Jacobean panelling painted white. The Great Parlour, at the north-east corner, has a modern ceiling, which tripped several members who attempted to fix a date. The house is rich in plasterwork—ceilings and friezes—and has numerous examples of fine chimneypieces in stone and wood, bearing the arms of various neighbouring families, and suggesting the probability that it was customary for the owner's friends each to present him with one such. That in a room on the first floor with the Fethplace arms and splendid mantling is perhaps the best; this room also has a pendant ceiling. The Great Chamber has a chimneypiece with the arms of Walter Jones and Eleanor Pope, and a splendid ceiling with sinuously curving flat moulded ribs forming the pattern, and interstices filled with sprays of the most slender and delicate modelled foliage. In a bedroom adjoining is a recently-discovered fireplace of simpler character, and next to that one with the arms of Sheldon, of Weston. The long gallery runs from end to end of the north front, and has a fine segmental modelled ceiling, considerably restored, and some good oak panelling on one side. Terminating each of the towers is a copper vane in the form of a flag with lion rampant (the arms of Jones) in pierced work. From the summit of the east tower a fine view of the lovely formal garden below is obtainable, and several members seized the opportunity to sketch from this point. The roofs have been renewed with Westmorland slating. Before leaving for the return journey *viâ* Moreton-in-the-Marsh members were kindly entertained to tea by Miss Whitmore Jones.

Fifth Day—Friday.

Another very attractive programme had been arranged for the last full day of the excursion. Proceeding by train to Winchcombe Station, a drive thence of about 3 miles brought the party first to Postlip Manor House. This was rebuilt by Giles Broadway, whose initials, with those of his wife Agnes, appear above the fine stone chimneypiece in the drawing-room on the first floor. The dining-room chimneypiece bears the date 1614, which is presumably that of the present building. By the kindness of the owner, Mr. Stewart-Forster, members were allowed free access to all parts of the house, and the majority quickly settled down to sketch, the favourite view point being one commanding the east side of the house, with its rows of small dormers and the tiny Norman chapel on the higher ground behind. Others sought the rising ground, from whence a most picturesque jumble of roofs, gables, and chimneys was presented to view. The main or south front of the house has a succession of steep-pitched gables, rather lacking in relief. Internally is a delightful fountain court. The production of water-colours, for almost the first time, at once resulted in a gathering of clouds, and the sky became sunless and threatening. Rain, however, held off, and later the sun reappeared.

Leaving Postlip at one o'clock the excursionists drove to Winchcombe for lunch, after which an all too short time remained for the adequate appreciation of the ancient capital of Mercia. The once famous abbey was entirely destroyed after the suppression of the monasteries, but memories of its activities still cling to the place. The George Inn, one of the ancient pilgrims' inns, bears the initials "R. K.," those of Richard Kydermínster, Abbot in the time of Henry VII. Looking up towards the street from the lower end of its ancient galleried yard, it makes a charming picture. In the church vestry also is a door recently brought from a farm once abbey property, with the same Abbot's initials. Other treasures preserved in the vestry and kindly exhibited by the Vicar are a silver-gilt Flemish burette, given in 1737 by Edward Beale, a splendid XVIIIth-century silver flagon given by the Williams of Cornden, and an Elizabethan silver chalice and paten dated 1570. The ancient paper register in tooled leather binding by Johannes Raynes, 1539, also remains. The present church was built in 1490 at the instigation of Abbot William in order that the monks might obtain the exclusive use of their abbey church. Two hundred pounds were contributed by the people, and the remainder of the cost was borne jointly by the Abbey and Ralph Boteler, of Sudeley. Comparisons are suggested with some of the fine churches built contemporaneously in the wool towns of East Anglia, particularly with that at Long Melford, which has some similarity in essentials. Though the Gloucestershire church must undoubtedly suffer in comparison, it is nevertheless full of interest. The aisled nave is of eight bays, with octagonal shafts and coarsely-moulded depressed arches. The two eastern bays form the choir, without structural division, but separated by good screens running across nave and aisles, and retaining their original doors.

East of the choir is a presbytery having on the south side very delicate triple sedilia with intermediate double tiers of canopied niches. Further east are the remains of what was apparently a Lady Chapel, or reliquary, without direct connexion with the church other than a narrow doorway. The pulpit was originally attached to the middle pier on the north side, but is now removed eastward to the screen. During the XVIIIth century a curious arrangement was introduced into the choir, where the altar stood centrally, surrounded on all four sides by rails, and with seats for the communicants on the south, east, and north sides. A similar arrangement existed at Deerhurst, and still exists at Lyddington, in Rutlandshire. At Winchcombe it was destroyed when the church was restored by Wyatt in 1872, when another extraordinary feature—a gallery facing west and filling the space above the choir—was also removed. The church contains some interesting furniture. In the vestry is an Elizabethan altar table; that in the church is of Laudian date, as is also the font, the latter inscribed 1634. There are also an ancient alms-box and a brass pendant candelabrum of XVIIIth-century design. The church, with its fine western tower and copper weathercock, forms a prominent feature in all views of the town: Opposite the churchyard is a good Jacobean house, shown in Mr. Green's drawing.

From Winchcombe to Sudeley is a drive of about a mile. Sudeley Castle is in the main of three dates—the work of Ralph Boteler in the reign of Henry VI., of Sir John Brydges about 1560, and the modern additions of 1840-57. The majority of the work of the former period now appears only as an interesting ruin forming the east and west sides of the south court. The castle was originally built in the reign of Stephen, but practically no traces of the original foundations remain in position, as the work of Ralph Boteler about 1460 constituted an almost entire rebuilding. Sufficient remains of this work to give an excellent idea of its magnificence. On the east side of the south court is the external wall of its great hall, containing a noble bay window and a good fireplace, concerning which speculation as to the disposition of the chimney was rife, since a window occurs immediately above. The hall was, rather unusually, on the first floor, approached by a newel stair, 4 ft. 3 in. wide, in an octagonal turret at the north-east corner. This still remains, together with the north gable wall, containing a fine window with a very flat arch, which gives some idea as to the original form of the ceiling or roof. The hall was about 25 ft. wide, and the width of the court from east to west about 60 ft. The west side is formed by a long range of buildings now serving as stables and the like, and approached by new entrances formed on the outer side. The southern end of this range is stopped by a massive square tower (partially ruined) with an octagonal turret at its north-east corner, and a lofty square one on the north-west. The south side of the court is open. Separating the northern court from that previously described is a low one-story corridor added at the time of the restoration in the last century. The north court is almost entirely the work of Sir John Brydges, and appears to have suffered less than the earlier buildings during the time of Sudeley's abandonment following its ruin in the Cromwellian wars. A window on the west side is dated 1572, but the bulk of the work appears slightly earlier. There is considerable character in the design of the mullioned windows moulded with a sunk chamfer, and in the simple entrance doorways communicating with the various suites of rooms, which are entered only through each other or direct from the courtyard, there being no corridor. The outward aspect of these buildings has been considerably affected by the additions and restorations made by Sir Gilbert Scott and J. D. Wyatt when the property was purchased by the Dent family (its present owners) and by them rescued from its derelict condition. A charming oriel window on the eastern front overlooking the formal garden may well be part of the work executed by Thos. Seymour, to whom Sudeley—long a Royal Manor—was granted by Henry VIII.; it may even be work designed to fit the house for the homecoming of Henry's last Queen—Catherine Parr, who was married to Seymour after her kingly husband's decease, and lies buried in the church hard by. The history of the various owners of Sudeley is not less interesting than that of the building, but for this the late Mrs. Dent's "Annals of Winchcombe and Sudeley" should be sought.

As may well be anticipated, the interior of the castle has suffered more than its fabric from its period of ill-use, and little of the original panelling or plasterwork is now to be seen. In the hands of its present owners however it has become filled with objects of beauty; the paintings and tapestries are exceptionally fine, one piece of early Elizabethan tapestry in particular being certainly among the most lovely things of its kind extant. A stone chimneypiece on the first floor has the motto of Sir Thos. Brydges, "Mainteine le Droit," to which some conjectural restorer has prefixed the word "God."

One of the rooms is fitted with panelling, chimneypiece, and furniture sold from the Petit Trianon at the time of the first Revolution.

Mr. H. Dent Brocklehurst personally conducted the party over the castle, and afterwards entertained them to tea, giving them the run of the place in the kindest manner possible.

The church, which stands a short distance to the east of the castle, is a curious little structure built by Ralph Boteler about 1460, desecrated by the Roundheads, and restored by Sir Gilbert Scott in 1858. It has a chancel and nave of five bays under a single roof, and a north aisle and sacristy. Above the west window a small square tower is corbelled out, producing a rather uncomfortable effect. On the south side of the chancel is a four-light squint window, with its mullions worked on the slant parallel with the direction of the squint. This is now filled with good German glass. Some original Elizabethan glass remains at the east end of the sacristy.

Digitized by Google

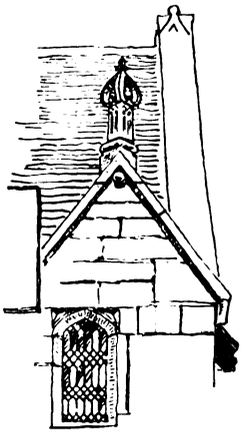
At some little distance to the north-west is a ruined grange or tithe-barn of XVth-century date.

After leaving Sudeley the party drove direct to Winchcombe Station, whence a very slow railway journey brought them again to Cheltenham, where the usual festivities followed dinner on this the last evening spent before parting.

Sixth Day—Saturday.

Saturday morning saw a party rather diminished in numbers. An invitation from Messrs. H. H. Martyn & Co. to inspect their works was accepted by the majority of those remaining, and an interesting morning was so spent. Visiting first the plaster shops, the processes of modelling and casting plaster enrichments were seen, after which in the woodworking shops the preparation of joinery was watched, and several examples of work in a more or less finished condition were admired, including an oak confessional designed by the late Mr. Bentley, and destined for Westminster Cathedral. It was gratifying to find in what high esteem the memory of this architect is held by those who have carried out his designs, several of which were shown to the party as models of all that a carver can desire. Passing through the stonemason's shop and carver's gallery, where much interesting work was in progress, a *tour de force* in the shape of an oak chimney-piece with carving in lime-wood à la Gibbons was examined, after which a visit to the smith's shop completed the round.

In the afternoon the remainder of the members dispersed, with many expressions of regret at the shortness of the week, and of gratitude to the Honorary Secretaries, Messrs. Talbot Brown and Hennings, for their excellent arrangements, which had served to make the excursion so enjoyable to all.

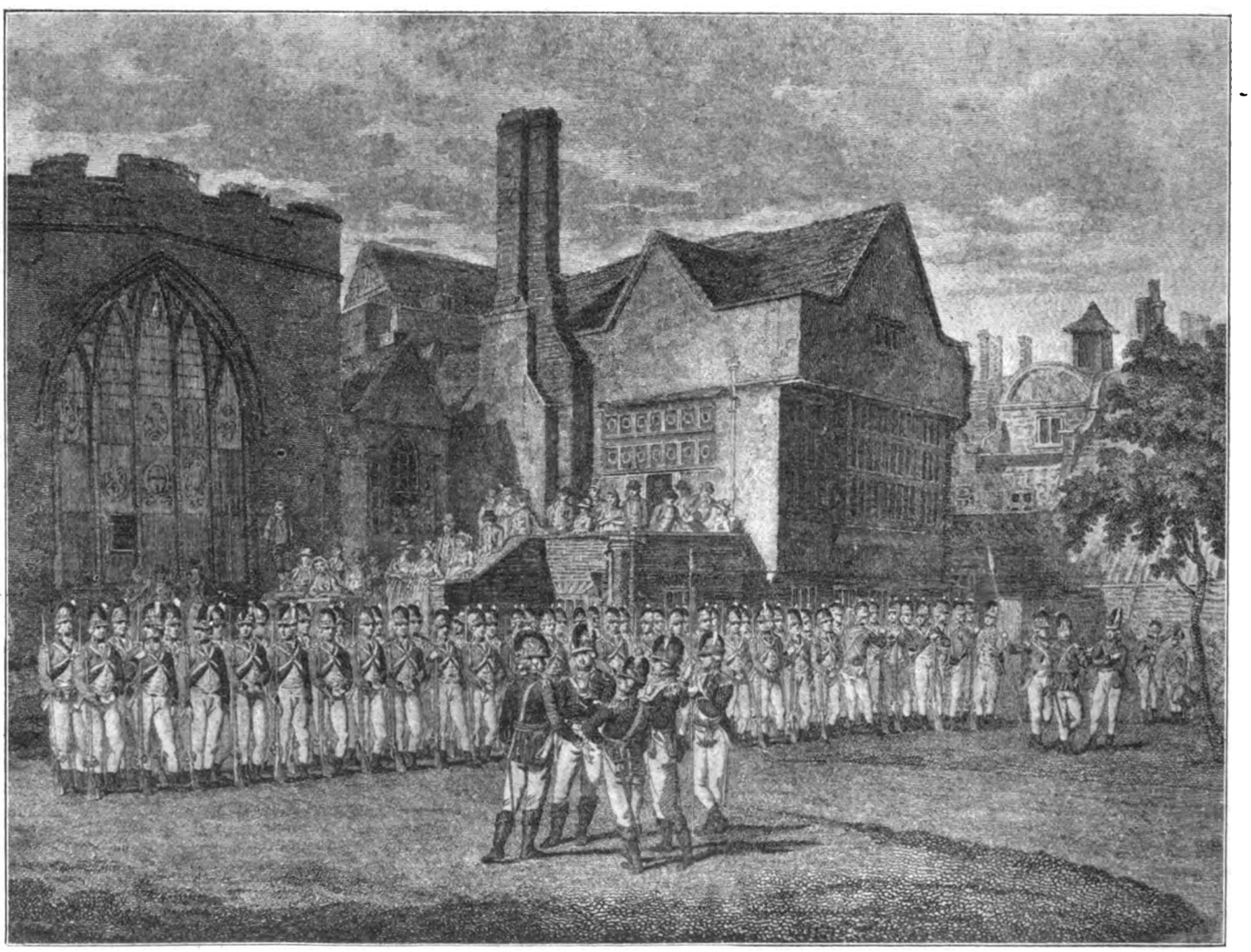


Gablet from Orchard House, Broadway.

This gablet and finial, which occurs on the return of the main gable of Orchard House, formerly Top Farm, Broadway (described in last week's report), is probably the most frequently sketched detail in the village, and has often been made the basis for modern designs. The doorway of this house, also, has been reproduced several times in other cottages near by.

THE OLD LEATHERSELLERS' COMPANY'S HALL.

OUR illustration reproduces a view, from the south-east, of (old) Leathersellers' Hall, with the company of the Cornhill Military Association in the foreground. Grignion engraved the plate for R. Wilkinson in 1799, after a coloured drawing by Dayes, which is preserved in the Guildhall Library. Adjacent to the Hall is seen the east end of the north, or "nuns'," aisle of the ancient parish church of St. Helen's, Bishopsgate, which commemorates Helena, *Piissima, Venerabilis Augusta*, the mother of Constantine the Great. That aisle, 121 ft. by 27 ft., was added to the church in or about 1216, being separated from the nave by a wooden screen fitted into the six bays, of various periods, of the arcade, and removed at the time of the Dissolution. The Company's Hall shown in the drawing was the refectory of the convent or priory which William, Dean of St. Paul's, son of William, the King's goldsmith, rebuilt and refounded out of a small priory which, together with the parish church, had been given (1180) to the capitular body. He dedicated the priory to St. Helena and the Holy Rood for black nuns Benedictine. William de Basynge, Sheriff in 1308, augmented the revenues, which amounted, *teste* Speed, to 376*l.* 6s. per annum. The instrument for dissolving the priory dated on November 25, 30 Henry VIII., has been preserved in the Record Office. The Leathersellers' Company, incorporated *temp.* Richard II., bought the conventual buildings, the nuns' aisle, or choir, excepted, with a bequest to them by John Hasilwood, 1544. They converted the refectory for purposes of their common hall and occupied the buildings until their demolition, begun in 1799, for the laying-out of St. Helen's-place, and the erection, a few years afterwards, of the Company's Hall, since rebuilt. In the north wall of the nuns' aisle are a remaining lancet window, two blocked doorways communicating with the priory, and two groups, at different levels, of hagioscopes, the one having two, the other having six, openings, or squints, converging upon the altar in the nave. The larger set of apertures, known as the "nuns' grating," is, we believe, a very rare example in England



The Old Leathersellers' Hall, next the Church of St. Helen's, City.
(From a print dated 1799.)

Digitized by Google

of the combination of hagioscope with arch-canopy and pierced stone altar or reliquary; there are similar examples in Burgos and St. Patrice at Rouen. Some nuns' seats were removed into the chancel in 1868. The floor of the nuns' aisle, with that of the "void" at its west end, lay more than 4 ft. above that of the nave. When J. L. Pearson, R.A., carried out his extensive restoration of the fabric in 1892-3 he returned the floors to their original level. There are engravings of the crypt beneath the old Hall by J. T. Smith, and by Wise after Capon's drawings, and a detailed plan by Gardner of the priory and church as in 1808, published by Wilkinson, and, by Smith, of the mermaid pump, or conduit, sculptured by Cibber for the Leathersellers' Company.

ELEMENTARY SCHOOL PLANNING.

THE following paper was read by Mr. Reginald G. Kirkby, A.R.I.B.A., F.S.I., City Architect, Bradford, at the recent Health Congress at Leeds.

Elementary School Planning.

"The vitally important question of school planning is passing through a critical stage in its history, and is entering upon a new era. Those who are chiefly responsible for the carrying out of the education of the children feel not only that the methods of modern teaching require remodelling, but that some improvements are necessary in the school buildings themselves.

It is now becoming evident to the minds of educationists that the existing models are far from satisfactory, and that some radical changes will have to be made in the planning of the schools of the future.

This movement is slowly but surely gaining ground, and it lies in the power of the members of this congress, and all who have the children's welfare at heart, to forward it and demand better conditions for the housing of our children during their school life.

Since the Board of Education first made an additional allowance for the building of central halls elementary school planning has more or less followed this type, comprising in the main a central hall with classrooms arranged round two or more sides. This type of plan appeared so fascinating on paper that it captured both architects and committees throughout the country, the result being that at least 90 per cent. of elementary schools erected during the last seven or eight years have been designed on these lines.

It is difficult to understand why for so many years educationists have been content with one stereotyped plan in the central hall type when so much advancement has been made in the administration and curriculum of school life.

The competition system of inviting architects to send in designs for school buildings is to be regarded as greatly responsible for this. Architects have felt that their only chance of success lay in adopting one type of plan; and committees, of course, have been almost compelled to accept this type, as this has been the only one offered to them.

This was borne out in the case of an architect who recently consulted with me in reference to a plan for a school competition. After admitting that there might be a better type than the central hall, he said, "If I make a departure from this type I will have no chance of success." I think this congress will agree that the time has arrived when such a condition of affairs should be altered.

Whilst the planning of modern English architecture has been characterised by great originality and ingenuity, which the exigencies of the site have often called for, and many new and fascinating studies have been presented to us, yet in school planning the same type of building has been copied for both town and country sites, for the hillside and the plain, until to-day the land is covered with hundreds of new buildings all of one kind, possessing little variety or originality.

In no other class of building in England has such a stereotyped plan been so lavishly copied as in school buildings. In Germany no attempt has been made to follow this plan. The buildings there appear to be designed to meet the requirements of the district.

Amongst the claims put forward in favour of this plan have been its economy, its compactness for working, and the easy facilities afforded to head teachers from a central hall to supervise the classrooms surrounding it, whilst the health of the children appears to have been a secondary consideration. A successful head teacher should know whether proper instruction and attention is being given to the scholars without watching each movement of the class teacher from the central hall. His proper place to direct the teaching is in the classroom, and not in the central hall.

One of the chief drawbacks to the central hall type is that it permits the vitiated and used-up air to constantly pass from one classroom to the other for the children to breathe over again. This, no doubt, partly accounts for the lassitude and lack of attention noticeable in children towards the close of the day's instruction, and also for the fact that the work of the primary school is less accurate than it used to be.

From the various tests which have been made in recent years to ascertain the state of the atmosphere in such schools, and from the inquiries and tests I have made in schools in the country, I am of opinion that the central hall plan is not the most suitable from a health point of view, and I think it is fitting that at such a congress as this we should consider the best conditions for housing our children so as to enable them fully to benefit from the instruction given during their working hours, and so fit them for their future work in the great industrial world. The advantages which may have been claimed for existing models are quite outweighed when consideration is given to the question of the children's health and to the unsuitability of the buildings in relation to modern teaching methods and hygienic science. The growing desire for healthier and better adapted schools has led in a few instances to the adoption and development of improved types of buildings, and noticeably so where city and county authorities have had the opportunity of consultation and investigation with their own official architects.

In many quarters there is a growing opinion in favour of a hall other than a central hall, and schools so provided would make way for the further development of physical instruction, which is likely to form a more important part of the curriculum in the near future. Most of the existing central halls, however, would be practically useless to meet such a provision.

Plans of schools recently erected or in progress in Staffordshire and Derbyshire, and at Letchworth and Bradford, are illustrations of these newer types, and may be of interest in the consideration of this question.

Staffordshire Schools.

Amongst the first we might consider are the Staffordshire schools, which have led the way in the matter of reform.

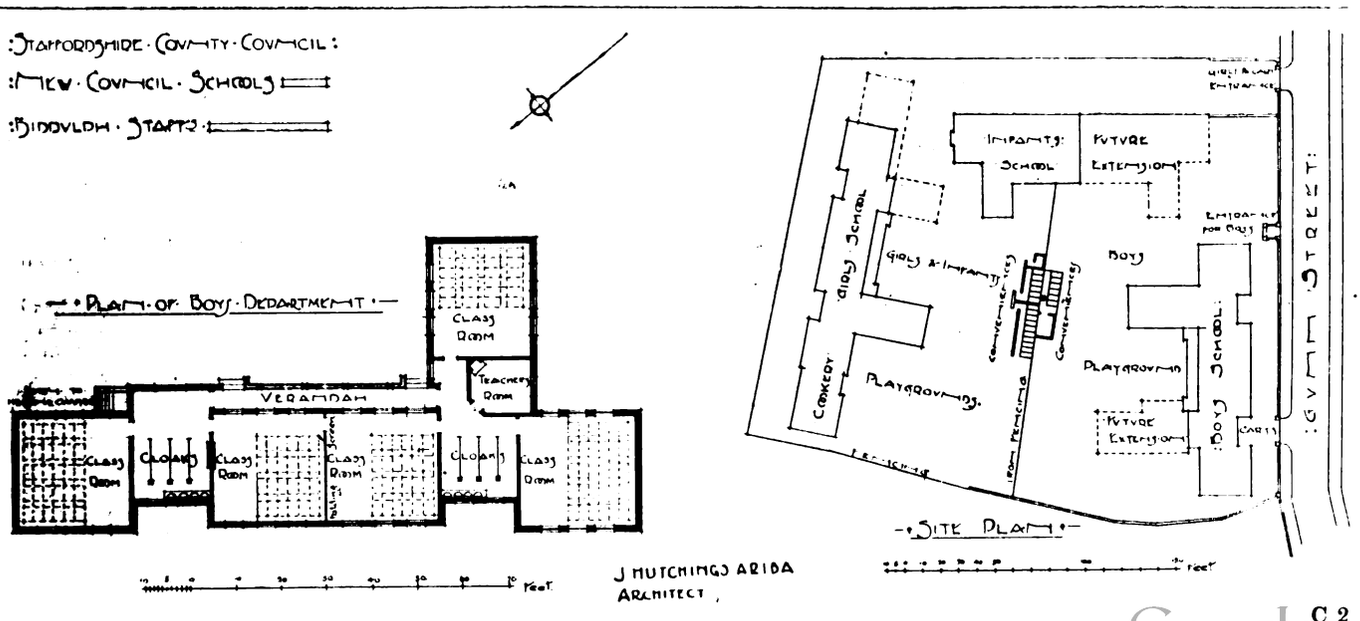
One of the first principles aimed at in these schools has been to gain cross ventilation through each classroom directly into the open air, the classrooms being connected by means of verandahs.

The windows are fitted with hoppers in the lower portion on both sides of the room and pivot-hung openings at the top, so that the rooms can be thoroughly scoured with fresh air as often as desired, and the inflow of fresh air can be regulated to suit the direction of the wind. In this way the air in the classroom can be kept pure.

The classrooms are grouped in twos and threes, with a separate cloakroom so arranged that the children can reach their cloaks and hats before passing on to the verandahs. The usual crush experienced in large cloakrooms is thus avoided. A separate drill and play hall is provided.

Derbyshire Schools.

The next type is a school erected in Derbyshire, and comprises a long marching corridor, with casement doors on either side, opening on to a verandah. The classrooms are arranged in groups at the ends and middle



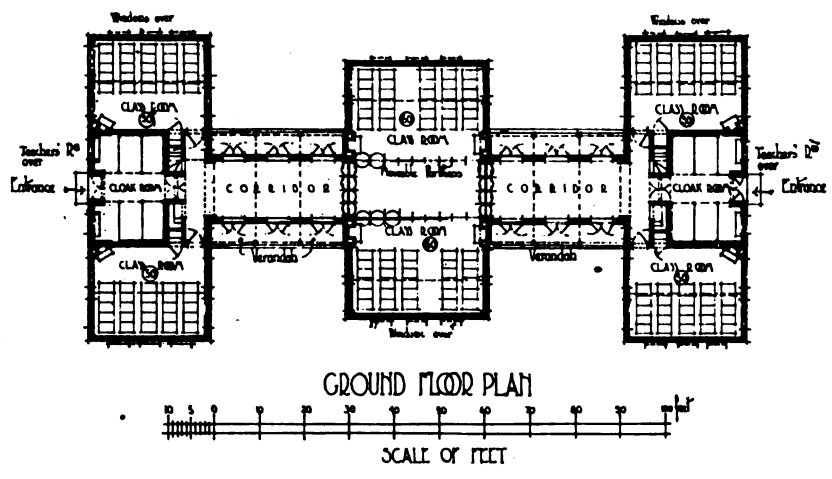
Digitized by Google

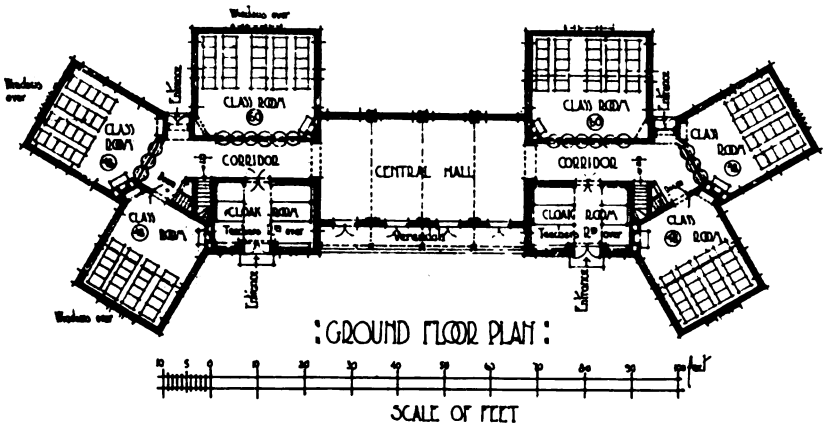
of the marching hall, with cloakrooms adjoining. In these schools the principle of cross ventilation has also been adopted.

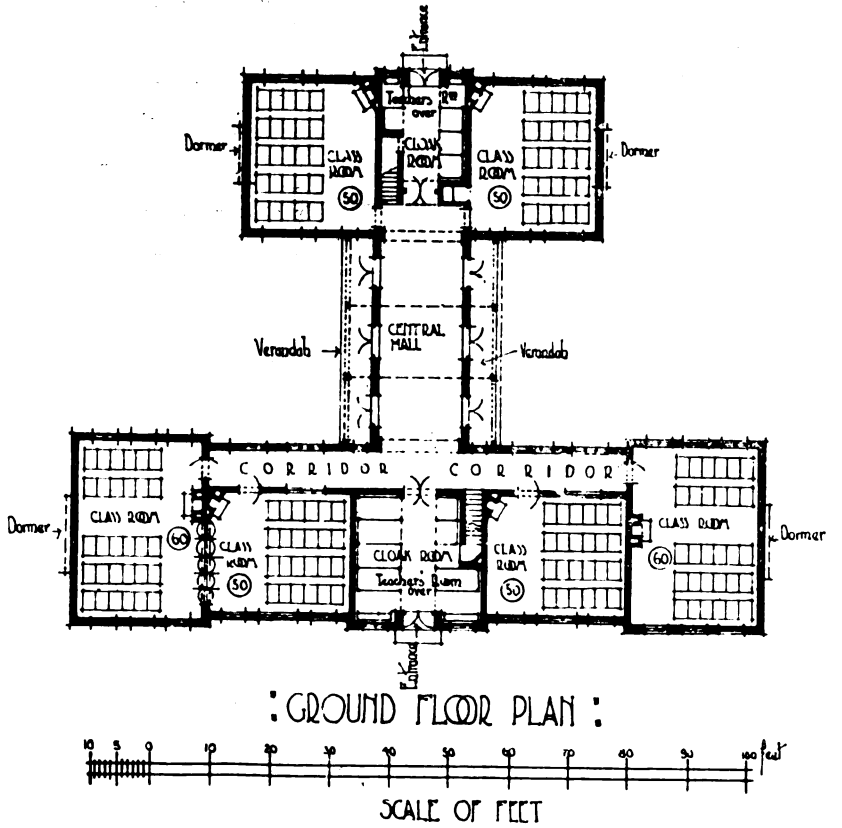
Another plan, of a school recently erected for the Derbyshire Education Committee, is reminiscent of a famous consumptive hospital. The building consists of a central hall without the many drawbacks to the central hall plan, with classrooms arranged in pairs extending from the central hall at the four points of the compass. Like the previous plans, this type provides for through ventilation. Such a school could easily be enlarged for double the accommodation if required by extending the wings, and would also provide for general central assembly in the hall if desired.

Letchworth School.

A school dissimilar from either of the foregoing in general arrangement is one now being erected at Letchworth, and is in the form of a quadrangle, with verandahs on two sides round which are grouped the various classrooms, which only accommodate thirty-two scholars, with a minimum of space of 12½ sq. ft. per scholar. On one side an assembly hall is placed, facing north, with a large south window. This school accommodates 544 children, and forms a simple yet hygienic type of plan, with through ventilation to each classroom.







Derbyshire Elementary Schools. Mr. G. H. Widdows, Architect.

Bradford Schools.

Another of the plans on view is of a school for the Bradford Education Committee. The same general principles laid down in the previous schools have been aimed at.

The verandah in this case has been superseded by a corridor, which is well ventilated. Owing to the exposed position of the school on a hill side, a verandah would have been impracticable. Through ventilation to each classroom is obtained directly into the open air over the corridor.

The infants' conveniences in this school are placed near the main building, and are approached by a covered way. The separate door leading from the babies' room on to the south playground has the advantage of inducing the teacher to take the children out into the open air whenever the weather is favourable. A separate entrance and cloak-room is provided for the babies.

From a consideration of the foregoing plans it will be evident that the principles governing school planning as laid down by the Board of Education have been maintained, and yet an attempt has been made to provide schools more consistent with the modern principles of hygiene, as from exhaustive tests which have been made to ascertain the amount of CO_2 in the atmosphere of classrooms in such buildings as these as compared with central hall schools has shown the former to be infinitely superior to the central hall type, even where mechanical systems are in use. Such schools as these are both hygienically and from an educational point of view better, as the improved physique of the children is such as to enable them to benefit more from the instruction given.

As a further development of these principles, a school might be designed with a large portion of the south side of the classroom made to open by casement doors to the floor level, so that they can be thrown open when the weather is suitable, and the class conducted practically in the open air. The doors might be protected by a projecting hood or low verandah, to keep off the rain.

In such schools children can be taught to love fresh air as nature intended they should, instead of their being compelled to sit in rooms with closed doors and windows, breathing impure air many times fouled.

Bathing in Elementary Schools.

Instruction on bodily cleanliness should be given in elementary schools, and this can best be demonstrated by building spray baths in the schools themselves, and allowing the instruction to form part of the curriculum. Cleanliness is by no means a natural virtue. It has to be taught, and the ideas so learnt at school will go a long way to the making of more healthy men and women.

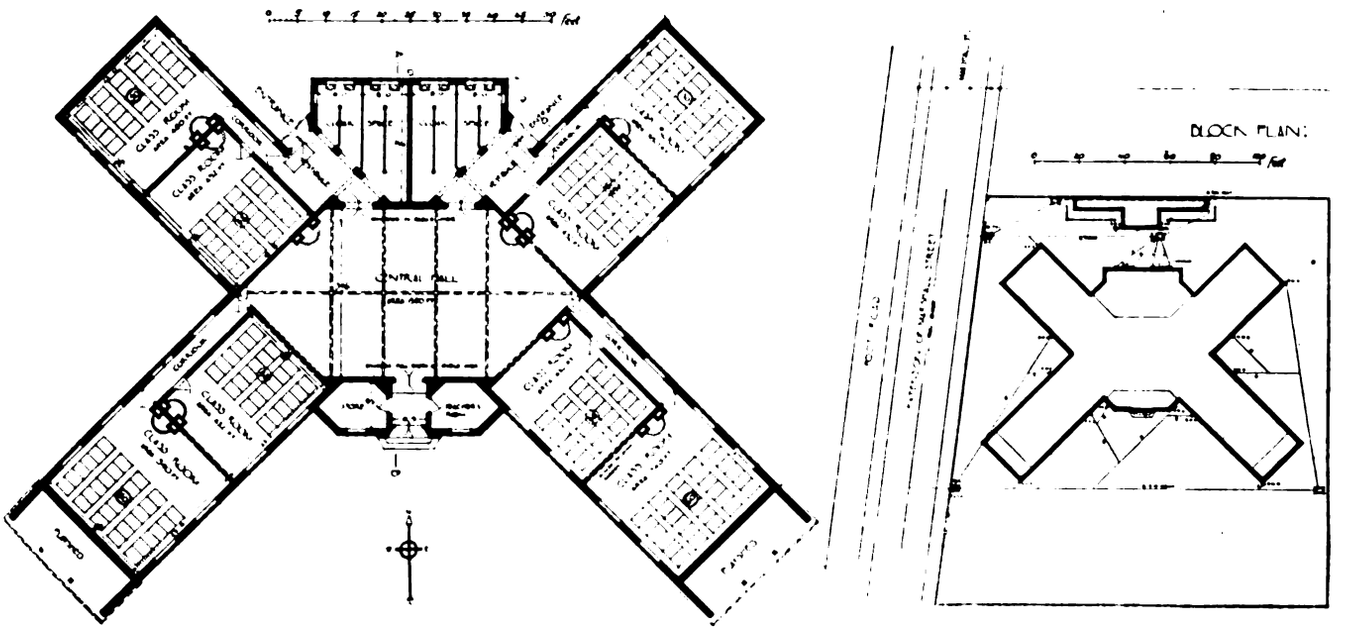
A great deal can be done by providing a dozen spray baths to each school. In Germany I noticed that all the new schools are being fitted with baths, which are proving a great national acquisition, and may partly account for the fact that dirty children are more rarely seen in the streets, in striking contrast to what may be so often observed in our own country.

An excellent work in this respect has been carried on in Bradford for some years past, and great credit is due to the Education and Baths Committees for their progressive work in this respect, as the benefits derived therefrom are incalculable.

Some of the schools are provided with spray baths, and others with swimming baths.

In the districts of the older schools, which were erected before baths were thought of, the Baths Committee are erecting slipper baths, more for the use of the poorer public, but which, however, can also be used for the children from the schools near at hand.

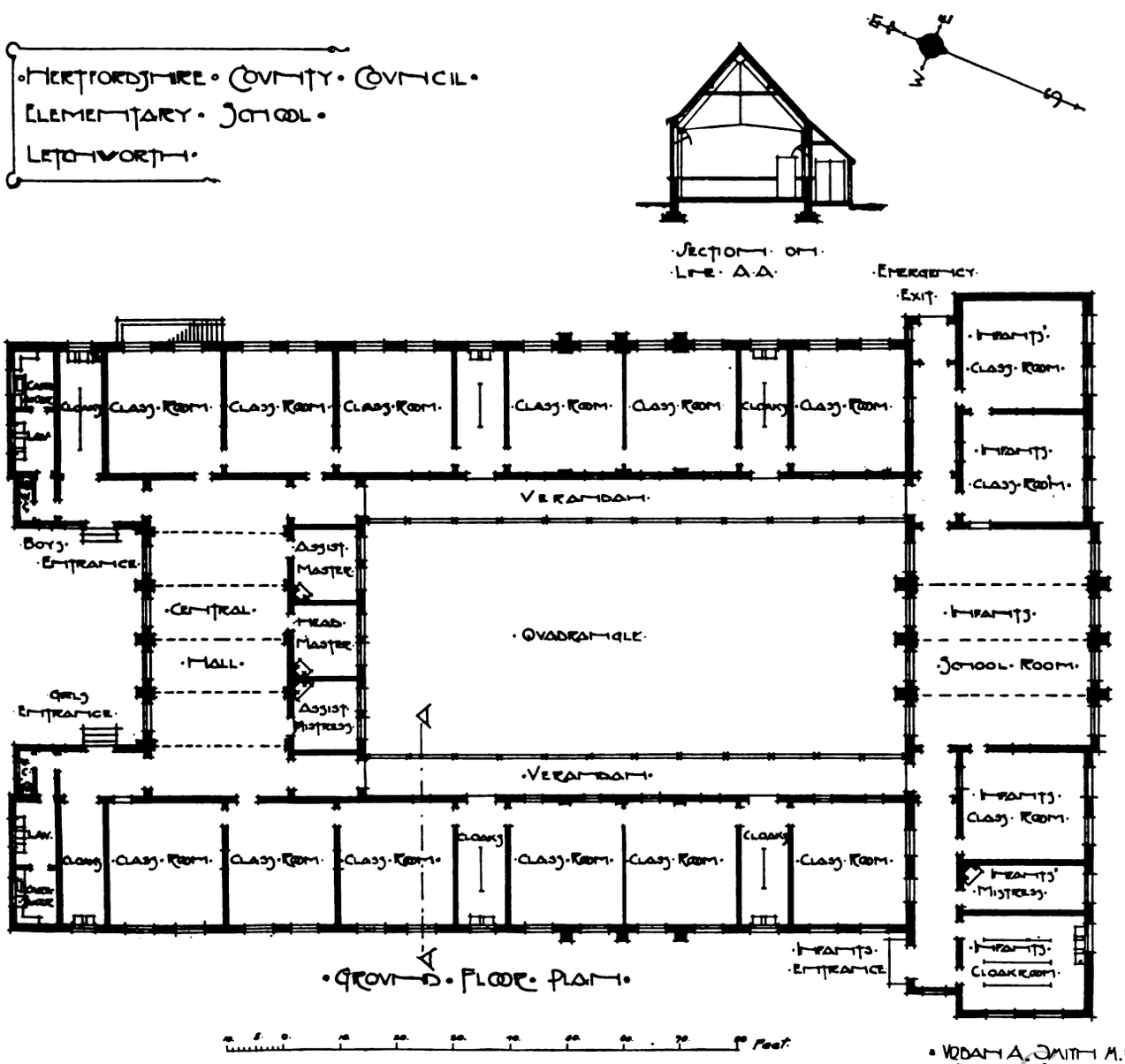
Digitized by Google

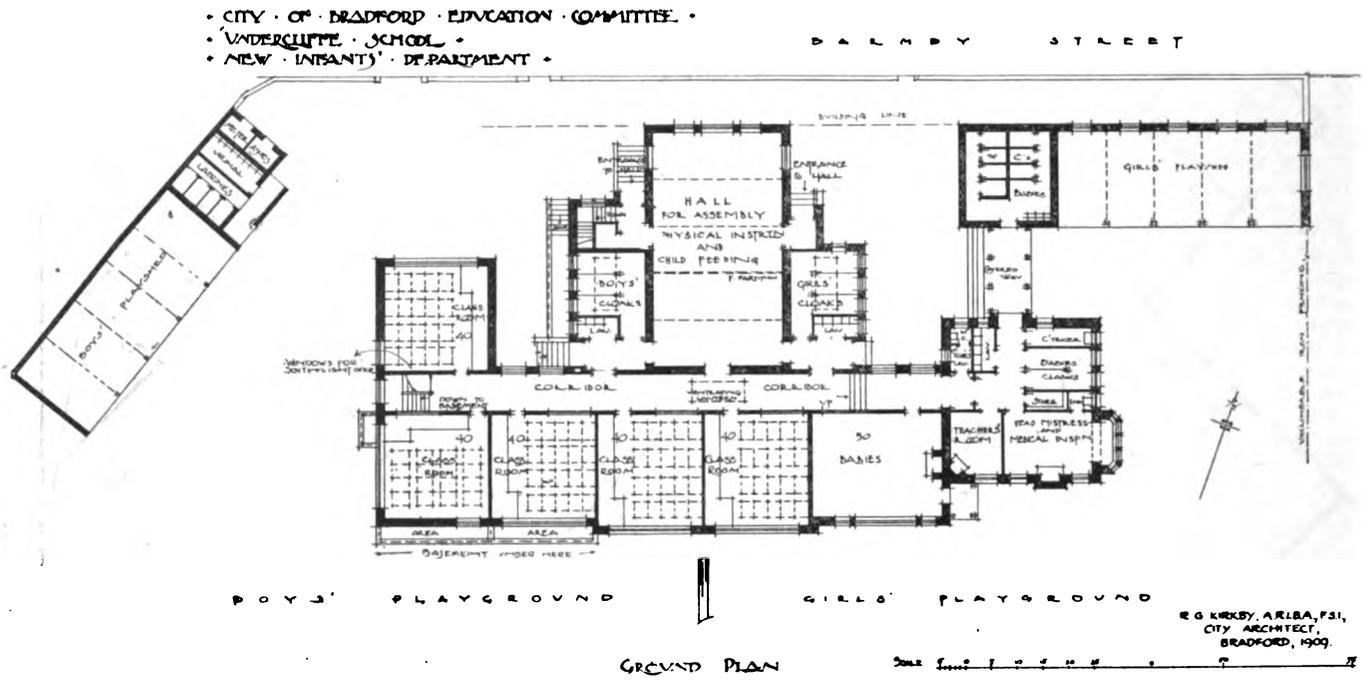


Derbyshire Infants' School. Mr. P. B. Houfton, Architect.

Spray baths appear to be the best, which allow the water to run away without collecting in a trough, so that there is less fear of contagion from any disease. A trough may be useful only in case of infants to allow them to paddle in the water, especially where the shock of the spray may be too great. The bath, however, can be so arranged as to be used as a trough, and yet the water allowed to run away when used by older scholars. The walls should be lined with glazed brick or tiles, and well lighted and ventilated, and everywhere the suggestion of cleanliness should be prevalent. Separate dressing-boxes are desirable for the older scholars.

The sprays should be arranged with a thermometer controlling valve easily





adjustable by the teacher. The children should be bathed at drill, all being made to wash one arm at one time, and again the head, and then the children might be made to scrub the back of those in front of them, and so on, the shower being brought into effect between each soaping drill.

A separate slipper bath may be included to allow of the bathing of the smallest children.

Cleanliness should become a national virtue, and, as previously stated, this can best be inculcated through the medium of school baths. Ideas of cleanliness learnt at school will be carried into the homes, and must have a far-reaching effect upon the rising generation.

Open Air Schools.

The experiments which have been so successfully conducted in Germany and in this country in providing open air schools for backward children and those who are physically debilitated have resulted in many cases in the children being passed back into the ordinary elementary school in a much improved state of health. Great benefit has been derived from the treatment, and many children have been saved from relegation into mentally defective schools through this means. The treatment provides baths, meals, and a few hours' daily instruction in the open air, with long periods of rest, all under medical supervision.

The London County Council opened a similar school during the summer of 1907, and a like experiment was made by the City of Bradford Education Committee last year, the results of which have been so beneficial that a new school of a more permanent character, accommodating 120 scholars, is now in course of construction at Thackley, about two miles from Bradford, and within ten minutes from a tramway stage.

The wood and iron building in which the experiment was conducted is being remodelled to provide a dining-hall and kitchen and offices for the new school buildings which are contained in two blocks to the east and west; the arrangement of placing the buildings against the north boundary wall has been governed by the peculiar conditions of the site.

These buildings comprise six classrooms, providing a floor area of 20 ft. per scholar, with a teaching verandah adjoining each classroom to induce the teacher to give outdoor instruction on all possible occasions.

The classrooms are fitted with opening hoppers and fanlights on both sides. Ample lavatory accommodation contains a separate space for towels and toothbrushes for each child. The douche baths will allow each scholar to have a bath three times a week if necessary. Separate dressing-boxes are provided, also three separate self-contained douches for the larger girls, and one slipper bath for the infants. There are also large resting-sheds to enable the children to lie out at full length before and after meals.

In the warmer weather the teaching is conducted in the adjoining wood. Owing to the exposed position of the site, a connecting verandah is provided, running the full length of the building, and linking up all the buildings, so as to provide a means of communication during wet weather.

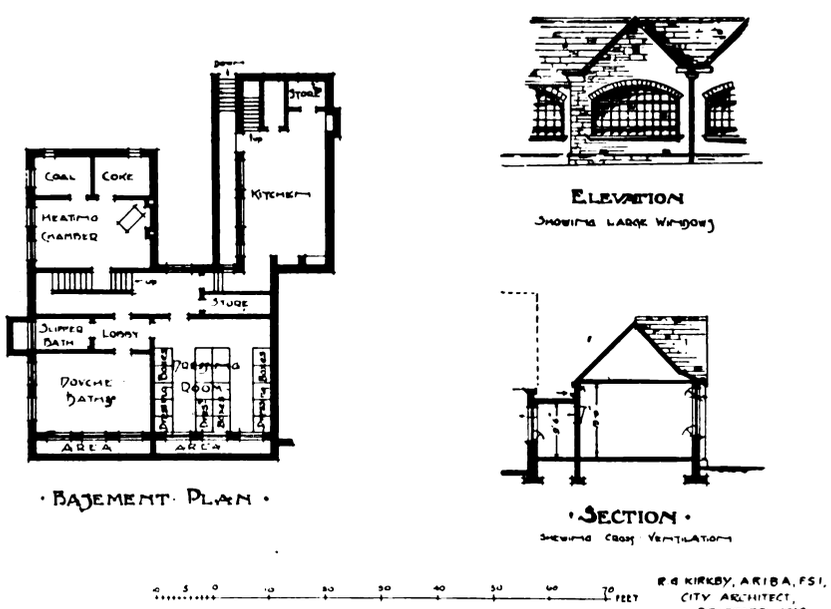
In one of the most successful German schools at Munchen-Gladbach the buildings are isolated, and a separate portion of the grounds is screened off for sun-baths. The school is situated in a pine wood, about an hour from the town, whilst the general arrangements appear to be suitable to the district. I do not think that the disposition of the buildings would, however, be suitable for most English towns.

From the great physical benefits and education results which have accrued from these open-air schools wonders have been worked upon the children in the increase of mental attention and alertness. Many of them have been given a new lease of life. I am convinced that the time is not far distant when there will be many similar buildings erected up and down the land, and not only will their usefulness be confined to such special buildings, but the principles carried out in the schools will in the future revolutionise the planning of elementary schools. In the meantime we should plan and build our schools so as to provide them with plenty of fresh air, and make them as healthy as possible, and to instil into the minds of the children such ideas as will promote the health and strength of the race.

It would be quite impossible to deal with all the details of an elementary school in the space of so short a paper as this, but we may consider a few of the more important points which naturally arise in the discussion of this subject.

Sites.

Committees do not, as a rule, attach sufficient importance to the selection of a site for a new school. Many a good building has been ruined by its site. In this, as in all other details, the best advice is necessary. There are so many questions—such as aspect, surrounding buildings, noisy streets, etc., which affect a site that it is imperative to give this matter every consideration. Because a piece of land can be had for a small sum of money it is not to say that it is cheap



Undercliffe School, Bradford: New Infants' Department.

Classrooms.

Ten square feet of floor area should not be taken as a maximum for elementary schools; 12 ft. will be found to give more efficient results in many instances. The floor area should be graded to suit the different ages of the scholars. It seems absurd that what will suit a child of six years will be equally suitable for a child of twelve.

Classrooms should not accommodate more than forty scholars, preferably less, as this number is the maximum which a teacher should be expected to teach with an expectation of anything like accurate results accruing therefrom.

Heating and Lighting.

The lighting of through ventilated classrooms naturally provides more light than is the case with those lighted only from the left hand.

The shadows usually cast by heavy mullions between the windows can be dispensed with if one large window is adopted. This not only provides additional ventilation, but gives a much more cheerful appearance to the room. By this means a ratio of a third to a quarter of window to floor area can easily be obtained. Such windows, however, need not detract in any way from the design of the building, but can be made a pleasing feature, and give the suggestion of space and freedom, and fully express the purpose for which the building is intended.

The increased amount of window space and openings naturally requires a considerable increase of heating surface, but it is surprising how accustomed the children become to fresh air, and how much less sensitive they are to cold when the air is constantly changed. The low-pressure hot-water system appears to be most suitable. It requires less attention than most other systems. Whilst the increased heating surface naturally increases the cost, yet a considerable saving can be made by the abolition of so-called roof extracting ventilators, which are more often ventilators in name merely and not in reality.

Ventilation.

On this question I have little to add to the remarks I made in the paper which I had the honour of reading last year before the Royal Sanitary Institute.

In schools similar to the ones I have illustrated, one need not trouble about their ventilation. All that is necessary is the requisite intelligence on the part of the teacher to regulate the openings, and the schools will ventilate themselves.

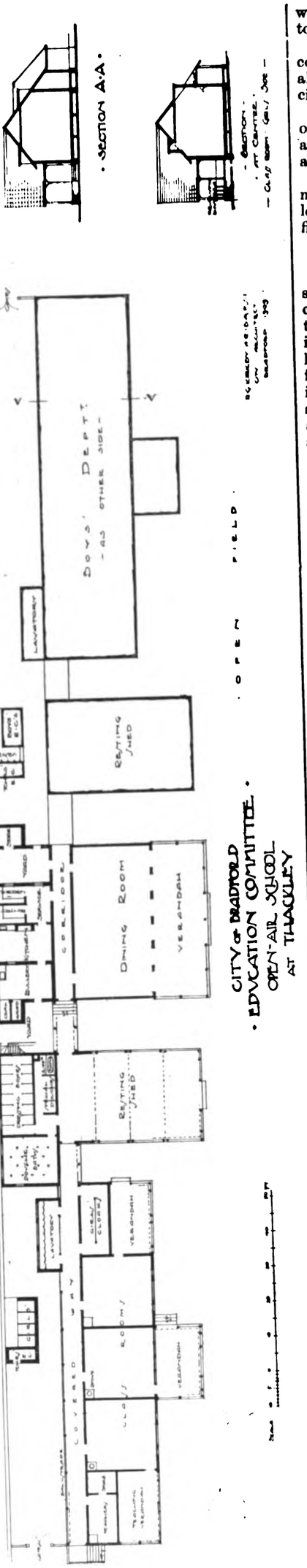
I am of the opinion that central hall schools, as they are now designed, cannot be efficiently ventilated except by mechanical means. In mechanically-ventilated schools the children acquire wrong ideas, which are totally contrary to the teachings of nature, and they are sure to carry them into home life in later years, with undoubted evil results.

To gain anything like a satisfactory system of mechanical ventilation, the cost of the school is increased from 30s. to 2*l.* per scholar. It seems wrong to have to pay so much to teach the children principles which are attended with evil results in after life.

Cloakrooms, etc.

The usual hanging space of 6 in. per scholar for cloakroom accommodation is not sufficient, particularly in the case of girls, whose hats are often 15 in. across the brim. Cloakrooms cannot be too well ventilated and lighted. Top lighting is a decided acquisition. These rooms should be heated to dry the cloaks in wet weather. Lavatories should not be placed in the cloakrooms.

Child feeding appears to have now become a necessity in most of the larger towns. The acute poverty which has followed in the train of recent depressions has driven home the fact that it is waste of time and money to attempt to teach half-fed children. If this is carried out at the schools it necessitates either small cooking centres at each school in the poorer districts or one large centre, with specially constructed delivering-vans to keep the food warm.



A large cooking centre has just been completed at Bradford capable of meeting all the requirements likely to arise in the city under the Child Feeding Act.

A small kitchen may be found useful in outlying districts to keep the food warm, and also to provide a convenience at such times as the hall may be let for social functions.

Every school should possess a room for medical inspection, which should be 20 ft. long in one direction for eye testing, and fitted with a small lavatory.

Decorations.

Next to the hygienic arrangements of a school, its decoration should have some consideration, with a view to developing the artistic sensibilities of the child. Whilst in many schools pictures are provided to hide the bare walls, yet there is scope for the introduction of a little decoration in the form of friezes or panels in some simple form, which would help to create a taste for art whilst the mind is plastic and capable of receiving such impressions.

Elementary schools should, as far as possible, be of single story, and, if necessary, more of them, rather than herding together children in large buildings like so many flocks of sheep.

Whilst emphasising the fact that a new era in school planning has really commenced, it must at the same time be admitted that the forms in which the newer principles are to find ultimate expression are not yet by any means settled. But while these may for some time yet properly form the subject of discussion authorities and architects should not hesitate, as far as is deemed prudent, to translate some of the newer and commendable perceptions of rational planning and construction into the buildings which they are called upon in the near future to erect.

Architects who will, when necessary, recommend authorities to build such newer type schools, and the authorities who will act upon such advice, should do so readily, notwithstanding the fact that in some cases a somewhat larger initial outlay may be involved, because, even where this may be the experience, it will soon be realised that the compensating advantages, not only to teachers and scholars, but also the enhanced educational product, will far outweigh the other and merely temporary considerations.

The quick return in the increased physical and educational attainments of scholars trained in such improved schools will speedily justify the principles which have actuated architects and authorities alike in providing them.

And the justification will not be one redounding upon architects and authorities alone, but will also, I am convinced, meet a wide approval by the nation at large, as the outcome of a rational appreciation of the truest principles and a sane application of such principles to the service of the highest and best needs of the nation and the race. For what can be supremer folly than to neglect our racial units in the earlier stages of their development, only to be burdened with them at a later stage in life as physically stunted and mentally dwarfed inmates of asylum, hospital, or workhouse? . . . Quite apart from the resulting all-round fitness which may tend to an even greater commercial expansion than our country has hitherto achieved, the carrying out of the building reforms indicated, coupled with concurrent improvements in the training, will of a certainty insure in succeeding generations such a great national increment of physical gain, intellectual development, and domestic happiness as will make us in the eyes of the world at large a truly noble race.

I am indebted to the following for the loan of their plans, *i.e.*, Messrs. J. Hutchings, A.R.I.B.A., Geo. H. Widdows, A.R.I.B.A., Urban A. Smith, and Percy Houfton."

Digitized by Google

THE BUILDER

AUGUST 21, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

NOTES FROM FRANCE.

IT is proposed to form, at Paris, a "Musée Lapidaire" to contain whatever old stones are found which have any historic interest. It will be a kind of annexe of the Hôtel Carnavalet, and will be arranged in the old Convent of the Bernardins in Rue de Poissy. To it will be transported all the old stones and bits of carving which now encumber the galleries and the garden of the Hôtel Carnavalet, as well as all vestiges of the past which the Vieux Paris Committee may be able to save from the hands of the workmen engaged in demolitions.

The Municipal Council of Paris have passed a vote for a building intended for various Art exhibitions, to be erected on a site to be chosen by the Council in conjunction with the Government. Some of the members of the Council wish to have the building erected on a site on the old fortifications, between the Porte Maillot and the Porte Dauphine. Another proposal is that, after the removal of the Galerie des Machines, two buildings should be erected at opposite ends of the site, connected by a subterranean gallery, and leaving the façade of the Ecole Militaire to show between them.

M. Rodin has completed the model for the proposed monument to Puvis de Chavannes, to be erected by public subscription. Various sites have been proposed or offered, but it is most probable that the monument will be erected on the Cours la Reine, between the Pont de l'Alma and the Pont des Invalides.

A monument is shortly to be erected in the principal square of Nogent-sur-Seine, to the memory of Paul Dubois, the eminent sculptor. It is the work of M. Alfred Boucher, and consists of a bust of Dubois accompanied by two female figures representing Sculpture and Painting.

M. Paul Gasq has executed the sculptural decoration for a large clock on the front of the new Post-Office building at Dijon. The composition includes a figure of a man, representing Day, and driving a car drawn by two horses. On the left is a figure of a woman, representing Night. Between these two groups is the clock face.

Among the schemes now before the Department of Public Works for the safeguarding of Mont St. Michel, is a proposal for the erection of a bridge, 1,500 mètres in length, for access to the Mount, in place of the dyke, which would be removed and thus permit the sea to encircle it freely, without the check imposed at present by the dyke.

Fifty Years Ago.

FROM THE *Builder* OF AUGUST 20, 1859.

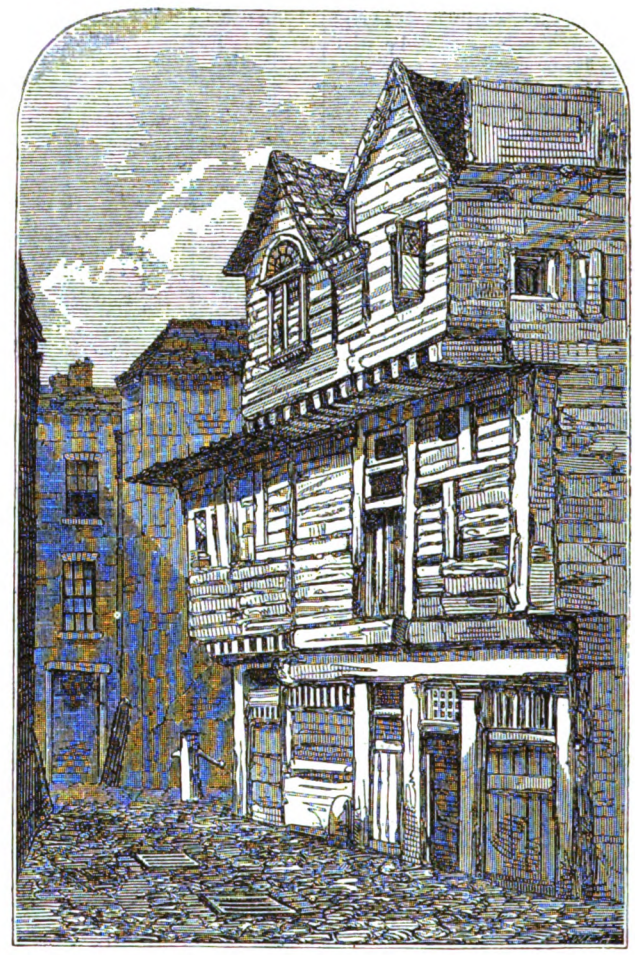
THE upper part of this structure is now ruinous, and it is not long since it was inhabited. All round it the houses are thickly populated, and many in passing will wonder at a place seemingly useless being allowed to remain. A more close inspection will, however, show that, hidden and hoarded up, there are here, in the lower apartments, in darkness visible, from thirty to forty cows, which supply a large number of families with milk. Anything worse than this arrangement cannot be imagined.

An open space divides this part of the building from the post-office adjoining, giving ample room to accommodate the inevitable crowd which congregate at the court entrance, with no obstruction to the public thoroughfare.

S. B. RUSSELL AND T. EDWIN COOPER.

SKETCHES WITH THE ARCHITECTURAL ASSOCIATION EXCURSION.

WE give this week additional sketches made in connexion with the Architectural Association Excursion. The second and concluding portion of our report appears on another page of this issue.



Ashlin's-place, Drury-lane: A London Dairy, 1859.

Illustrations.

BURSLEM MUNICIPAL BUILDINGS.

THE building is planned with its principal façade to Wedgewood-place, and is divided into three main divisions, the large concert-hall being placed in the centre, with the Assembly Hall and the Law Courts on either side.

Owing to the nature of the site the latter are placed at a lower level, immediately opposite the police-station.

THE ORDER OF THE MAUSOLEUM AT HALICARNASSUS.

THIS illustration of the Order of the Mausoleum at Halicarnassus, as now set up in the British Museum, is reproduced from some fine measured drawings to a very large scale, made some time since by students of the Royal College of Art, under Professor Pite's direction.

It is given in this issue partly in reference to the fact that in the "Reviews of Books" Supplement of this week there is a notice of the late J. J. Stevenson's monograph on the restoration of the Mausoleum. The drawing does not, however, bear on any of the disputed and disputable points as to the restoration; of the Order we are at all events certain; what is uncertain is what it stood on and what came above it; and any light which the remains in the British Museum throw upon this question depends on some lesser details—the sizes and proportions of some of the steps found, for instance—which at all events suggest features that never came into the older attempts at restoration previous to Sir Charles Newton's discoveries on the site of the Mausoleum.

Digitized by Google

ST. JOHN'S HOSPITAL, HEYTESBURY.

THE old and once market town of Heytesbury, situated on the borders of Salisbury Plain, four miles from Warminster, possesses in St. John's Hospital a very interesting charity. The original almshouse was founded by Letters Patent 11 Edward IV. (1472), and endowed by Margaret Lady Hungerford and Bottreux, and her son Walter, with lands at Cheverell, Clinton, etc., in the county of Wilts. The original structure remained standing till 1769, when it was burned down in a great fire that consumed practically the whole of the town. The present hospital, quadrangular in plan, is a pure Georgian building throughout, with the exception of the cellars, which are all that remain of the original edifice. It is probably the largest quadrangular almshouse of Georgian date in the country. The building is approached from the road by steps, whence a grass-bordered walk leads to the main entrance. The building, although rather too much covered with foliage to please the architect, is exceedingly picturesque, whether viewed from the road or from the quadrangular court; the unambitious and restful nature of the architecture conveying a subtle air of peace and quietude befitting a harbour of refuge for the aged poor.

The charity provides for twelve poor men and one woman, who dwell together in a kind of collegiate way. At the head of the establishment is a *custos* who must always be in Holy orders, as the founders originally stipulated.

SIDNEY HEATH.

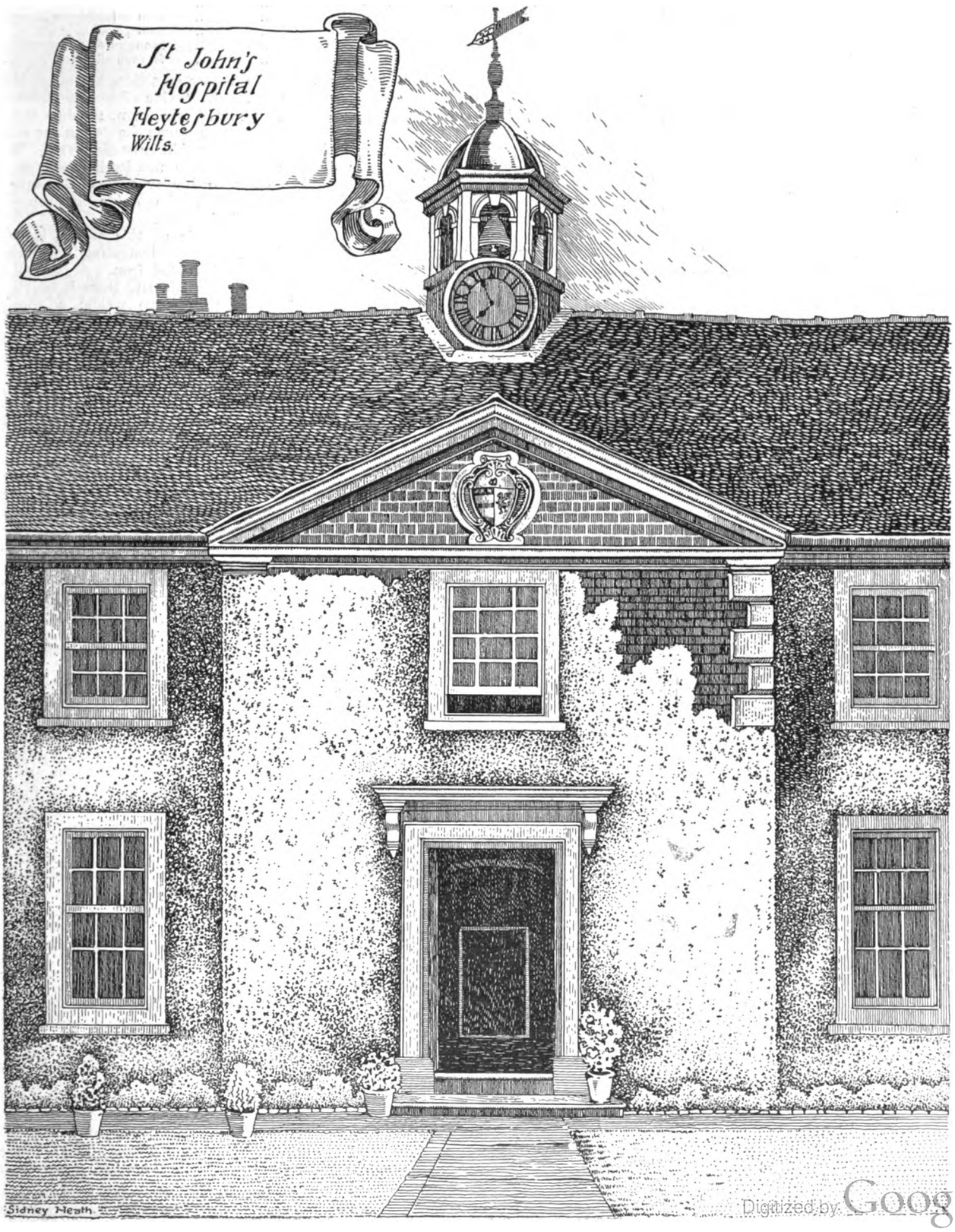
BOOK RECEIVED.

DOMESTIC SANITARY ENGINEERING AND PLUMBING. By F. W. Raynes, R.P. Pp. 474. (London: Longmans, Green, & Co. 1909. 10s. 6d. net. With 277 illustrations.)

RUST AND DEFECTIVE WELDS IN IRON AND STEEL.

IN a paper recently read before the Iron and Steel Institute of Staffordshire, Mr. Thornton Murray, B.Sc., made reference to a number of structures in which the defects of iron and steel had assumed serious importance. In the roof of Charing Cross Railway Station, for instance, many of the members were in 1906 found to be little more than half the thickness that they were when originally erected some forty-five years ago. In the Forth Bridge an inspection has shown that many of the bolts have entirely lost their seating through corrosion. In the steel frame structures of New York periodical minute inspections are made for signs of rust.

After making reference to the many investigations to ascertain the cause of rusting when pure materials are employed (see the *Builder*, July and August, 1908), he



Digitized by Google

says, "besides the electrolytic action set up between clean iron and rust, a very much more serious action is set up when clean iron and black oxide of iron, or "smithy scales," are placed in contact in an electrolyte. In this case the iron serves as the anode or positive pole, while the oxide acts as cathode. Mr. E. F. Law, A.R.S.M., conducted experiments on welded bars, and found that rusting took place much more rapidly at the weld than elsewhere, and this he attributed to the presence of magnetic oxide of iron ("smithy scale") at that point. He considers that this peculiarity was largely the cause of the failure of one of the tie rods of the roof of Charing Cross Station.

The action upon iron and steel of other metals, with respect to corrosion, is yet another proof of the existence of some kind of electrolytic action. Zinc is the only commercial metal (except manganese) which is electropositive to iron, and which, therefore, when dissolved away, will tend to redeposit upon the iron. Of course, cast iron with the skin on is a very much better rust resister than either of the others. If, however, this skin is removed, the material becomes rather less durable than wrought iron or steel. With regard to the effect upon corrosion of the recognised impurities in iron and steel, we may note that sulphur in iron or steel generally tends to promote, and phosphorus to reduce, corrosion. Silicon seems to render wrought iron and steel less liable to corrosion, both by acids and by air and moisture. Added to cast iron, in the foundry, it would probably have a deleterious effect, since the small proportion there added only succeeds in making the iron grey—and grey iron has been generally found to be more easily attacked than the white variety.

The Bower-Barff process forms a film which was brittle, could not be made altogether adhesive (so that the slightest shock was sufficient to "scale" it off), and once broken through was an active agent in promoting the destruction of the metal it had protected. A process which is mainly applied to similar work has lately been patented, and in Mr. Murray's opinion is apparently destined to be very largely used. The iron or steel to be treated is immersed in a hot phosphorised solution, in which are some iron filings. The surface of the iron or steel is transformed into ferrous and ferric phosphate, and presents a pleasing dull black appearance, besides being wonderfully resistant to corrosion. This process is being applied to many light engineering products, gun-barrels and gun-locks, spanners, springs, cycle-tubes, and the like.

Referring to the loss of substance in the case of the Charing Cross roof, stated above, for specific members, by Mr. Murray, it may be useful to mention the estimate of the average loss given by the late Sir Benjamin Baker, viz., 6 per cent. This estimate and mention of the defective weld are to be found on page 37 of the *Builder*, January 13, 1906.

The investigations of Mr. E. F. Law (a Carnegie Research Scholar of the Iron and Steel Institute, and for which report he received their Silver Medal) upon impurities in steel may be summarised as follows:—

Oxide of iron differs in one respect from all the other impurities found in steel, and the results of this difference are of far-reaching importance. The difference referred to is the influence exerted by the impurities on the corrosion of steel. The difference is very noticeable when dealing with the polished specimens for microscopical examination, or even with freshly-filed surfaces.

If these are kept side by side in an ordinary room, it will be seen that the steels containing oxide begin to show signs of rusting long before the others, and in dilute acid solutions they corrode far more readily. The explanation of this behaviour is that all the impurities, with the exception of oxide, are electro-negative as compared with iron, and the result is that a small electro-motive force is set up, which assists the *solution of the impurity*, thus leaving pits in the steel.

Approximately, this electro-motive force is as follows:—

	Volts.
Between iron and basic slag	0·018
" " manganese sulphide ..	0·015
" " iron sulphide	0·015
" " iron phosphide	0·013
" " manganese silicate ..	0·006
" " ferrous silicate	0·006

In the case of oxide, however, the action is reversed. Oxide of iron is electropositive as compared with iron, so that the electromotive force causes the *steel* in the neighbourhood of the oxide to be dissolved. Moreover, as the oxide is not itself dissolved there is nothing to hinder the continuance of the action until the oxide is removed by mechanical means.

An example of this action is shown in Figs. 1, 2 and 3, illustrating the corrosion of a piece of welded iron. A perfect weld is seldom met with, and there is nearly always (especially in large welds) a considerable amount of oxide which is never squeezed out from between the two surfaces, but remains in the form of small globules, as shown in Fig. 1. Fig 2 is the same, after etching lightly with dilute sulphuric acid, and the difference in the extent of the corrosion can be seen by the rather ill-defined line surrounding the steel containing the oxide. Fig. 3 is the same sample more deeply etched, and under a lower magnification, showing a distinct groove cut by the acid along the line of the weld. (Figs. 1, 2, and 3.)

To prove that this action takes place on a large scale a number of welded bars were obtained of various sizes up to 2¼ in. in diameter. Some of these were subjected to corrosion as they were, and others were sawn in half from end to end and then corroded. The exaggerated corrosion at the weld was well marked, more especially in the larger bars.

A very serious example of this corrosion occurred in the collapse of the Charing Cross Station roof, due to the breaking of a tie-rod. The fracture, Fig. 4, showed an imperfect weld, which had, nevertheless, been strong enough to withstand the stress of storm and weather for over forty years, until the slow corrosion of the gases from burning coal finally brought it down.

*In this Fig. 4 the light portions are, of course, the sound, whilst the dark portions are the imperfectly welded area in the cross section of the tie-bar.

These are cases in which the oxide may be said to be introduced artificially, but the results are equally serious when the oxide is introduced in the process of manufacture. A constantly occurring example of this is to be found in the pitting of boiler plates and tubes. Mr. Law is of the opinion that the impurities in steel should not be regarded with indifference, and that silicates, and particularly oxides, deserve special attention. Chemical analysis reveals nothing as to the presence of silicate, and a number of samples whose failure was solely due to the presence of silicate were only detected by a microscopical examination. This latter test showed that it does not occur in isolated

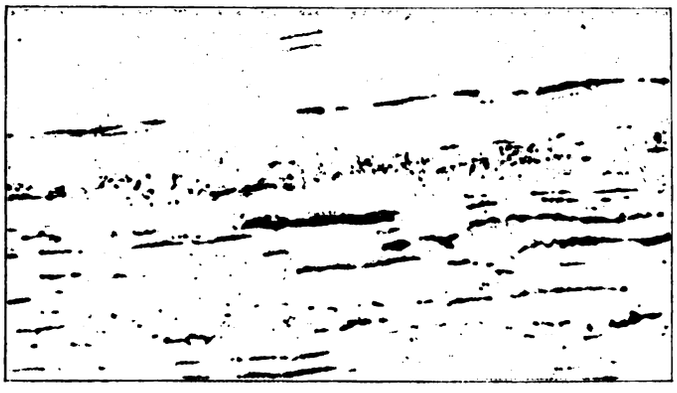


Fig. 1.

Fig. 2.

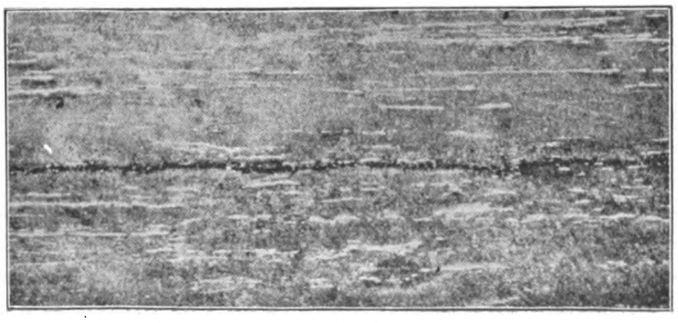


Fig. 3.

* The illustrations are given by the kind permission of the Iron and Steel Institute.

Digitized by Google

patches, but distributed throughout the mass.

The apparent contradiction of these observations respecting the effect of silicates with those of Mr. Murray (*see* ante) respecting the effect of silicon is no doubt due to the fact that the latter refers to metallic silicon

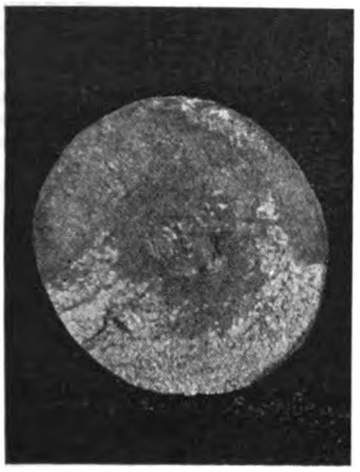


Fig. 4.

or silicide of iron; whilst Mr. Law refers to manganese and ferrous silicates, both of which compounds contain oxygen, making them in some degree analogous to the oxide of iron which he specially characterises as injurious.

The compiler of this note has recently observed marked corrosion in the lattice bars of the Lambeth suspension bridge. This complete severance thereof, just above the level of the roadway, in several instances is evident to any person passing over the bridge, and would appear to be worthy the attention of the controlling authority.

There has been brought to the compiler's notice recently a case where the top flange of the uppermost row of lattice girders of the guide framing of a gasholder situated on the south coast, although carefully painted each year, has become wasted in seven to eight years sufficient to require its renewal. As the gasholder generally has not suffered to any serious extent the difference offers a problem for further inquiry, in the light of the principles that have been set forth in the foregoing and preceding articles.

With reference to the deficiencies of the Bower-Barff process, mentioned above by Mr. Murray, it is worth recording that after a number of years' experience upon a large scale two at least of the London gas companies are continuing to employ that process for their cooking-stoves and gas-fires. The success of the method depends largely upon the perfect cleansing of the iron or steel from all dirt, and especially grease, before admission to the superheated steam-chamber.

THE LONDON MASTER BUILDERS' ASSOCIATION:

VISIT OF BELGIAN BUILDERS.

ARISING out of a visit to Belgium last year of the Sheffield Master Builders' Association, a large party of Belgian builders, representing the Associations of Antwerp, Brussels, and Ghent, have visited this country; and in Sheffield, Liverpool, and London they have been received by representatives of the Associations belonging to the National Federation of Master Builders. The tour was brought to a conclusion on Friday and Saturday last, when visits were made to the buildings, etc., of London. On Thursday, the 12th, the party, including ladies, arrived in London from Sheffield, when the London Master Builders' Association entertained to dinner at St. Ermin's Hotel, Westminster, the representatives of the above-named Belgian Associations, Mr. F. G. Rice, President of the London Master Builders, presiding.

Among those present were:

MM. A. Hesbain, Vice President of Antwerp Association; A. Grangé, Secretary, ditto; F. Van Dyck, 2nd ditto; Van Deuren, President of the Brussels Association; Van Autryve, ditto, Ghent; Van Eckert, Antwerp; Van Bergen, ditto; Merckx-Verellen, President Conciliation Board; Dagry, Brussels; Bermrert; Vermeulen, Antwerp.

There were also present representing the Association:

Messrs. F. G. Rice, D. S. Rice, Arthur Brown, A. G. White, E. J. Brown (President of the National Federation), W. F. Wallis, Fredk. Higgs, G. Bird Godson, James S. Holliday, Leonard Horner, H. W. Horner, Joseph Randall, A. W. Turnbull, H. Knight, C. Wall, J. Chessum, Albert Monk, J. W. Jerram, E. A. Hough, G. H. Parker,

and others. The company numbered over 150, of whom over 100 were Belgian guests.

After dinner the toasts of "The King" and "His Majesty King Leopold" were proposed in French and suitably honoured, the National Anthem and the Belgian National Anthem being sung.

The President then explained that the visitors had first visited Liverpool, had then gone to Sheffield, and were now in London in order to meet their confrères and to see the sights.

He then proposed, in French, the toast of "Our Guests," and said that round the tables were gathered the builders of two different countries, although our lands are separated by the North Sea, yet our wishes and our aspirations are exactly the same. The visit had caused English builders great pleasure, and he hoped it had been the same to the visitors. He hoped to visit Belgium next year for the purpose of seeing the International Exhibition of Brussels, as doubtless many of his countrymen would do, and he felt sure the Exhibition would be a great success. In Belgium there were a great number of buildings which were excellent examples of good design and construction, and which could truly be called works of art, and he hoped that the visit to England had not disappointed them, and that they had thought some of our buildings, both ancient and modern, worthy of remark, for we as Englishmen were justly proud of them. We are all united in the desire of beautifying our different countries with fine buildings, but here in England we had not at present so often the opportunity of doing so as we should wish, as the state of the building trade was very depressed. He hoped it was not the same in Belgium, and that they might always have in their own country plenty of work to occupy their time and abilities.

M. Aimé Hesbain, Vice-President of the National Federation of the Master Builders of Belgium, and President of the Antwerp Association, who spoke in English, thanked the English builders, on behalf of the builders of Antwerp, Brussels, and Ghent, for the kind reception accorded to them. He was glad to know that the President thought of visiting the Exhibition at Brussels, and he hoped many other builders from England would do so. They were, as builders, touched to find the toast of their King honoured, for he was renowned in their country as a patron of all great works, and was called "the King of the Builders." The little Belgian nation had for centuries felt a warm sympathy with the great English nation. Individual and political liberty, and peaceful improvements, according to the progress of science, were characteristics of both nations, and such a meeting as that could not fail to promote the feeling of sympathy between—not only the two nations, but also between the builders of the two nations. Last year, they received in Antwerp and Brussels builders from Sheffield and Yorkshire, and from the first there had been this cordial feeling between them. The Sheffield builders asked them to come to England and they had accepted the kind invitation, and they greatly welcomed the friendship and kindness of their English friends there and in London. As to the Brussels Exhibition, as he had said, he hoped that many English builders would visit it. Brussels was also the cradle of the International Federation of Builders, in which there were now fourteen nations included.

M. J. Van Deuren, Vice-President of the Master Builders' Association at Brussels, whose remarks were interpreted by Mr. A. E. Brown, said he desired to associate himself with the remarks made by M. Hesbain. It was necessary for all contractors of every country to associate together. Twenty-five years of Association in Belgium had proved to Mr. Vandeuren the value of constant meetings for the purpose of discussing matters of interest to the trade; he was especially glad to hear that English builders were likely to visit them next year to see the Brussels Exhibition and the fine buildings and works of art referred to by the President, and he assured them they would receive a hearty welcome. We should adopt the motto, "One for all, and all for one," and agree to go hand in hand together.

M. J. Van Autryve, President of the Ghent Association, also spoke, in Flemish, and M. Hoffman interpreted his remarks. In the name of the Ghent builders M. Van Autryve thanked the London Master Builders' Association for their reception.

The health of the Chairman (Mr. Rice) having been drunk, and the Chairman having briefly replied, Mr. Frederick Higgs proposed the toast of "The Ladies" in eulogistic terms.

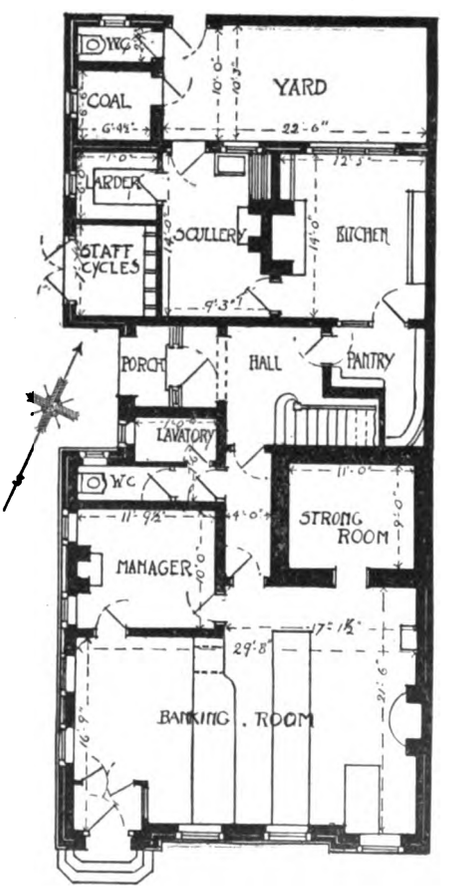
M. Hoffman replied on behalf of the Belgian ladies, and proposed the health of the English ladies.

Mr. Brown, President of the National Federation of Master Builders, suitably responded, and the proceedings terminated.

BANKING PREMISES, PARKSTONE, DORSET.

THIS building consists of offices for Messrs. Lloyds Bank, Ltd., and a house for the manager.

The street front is carried out in Doulting



GROUND FLOOR PLAN

Digitized by Google

stone, Fordingbridge red facings, and Reading rubbed bricks. The entrance lobby, banking hall, manager's room, desks and fittings are finished in unpolished teak, and the floors are of marble and doloment.

Mr. G. A. Bligh Livesay, of Bournemouth, was the architect; Messrs. Collins & Godfrey, of Tewkesbury, the builders.

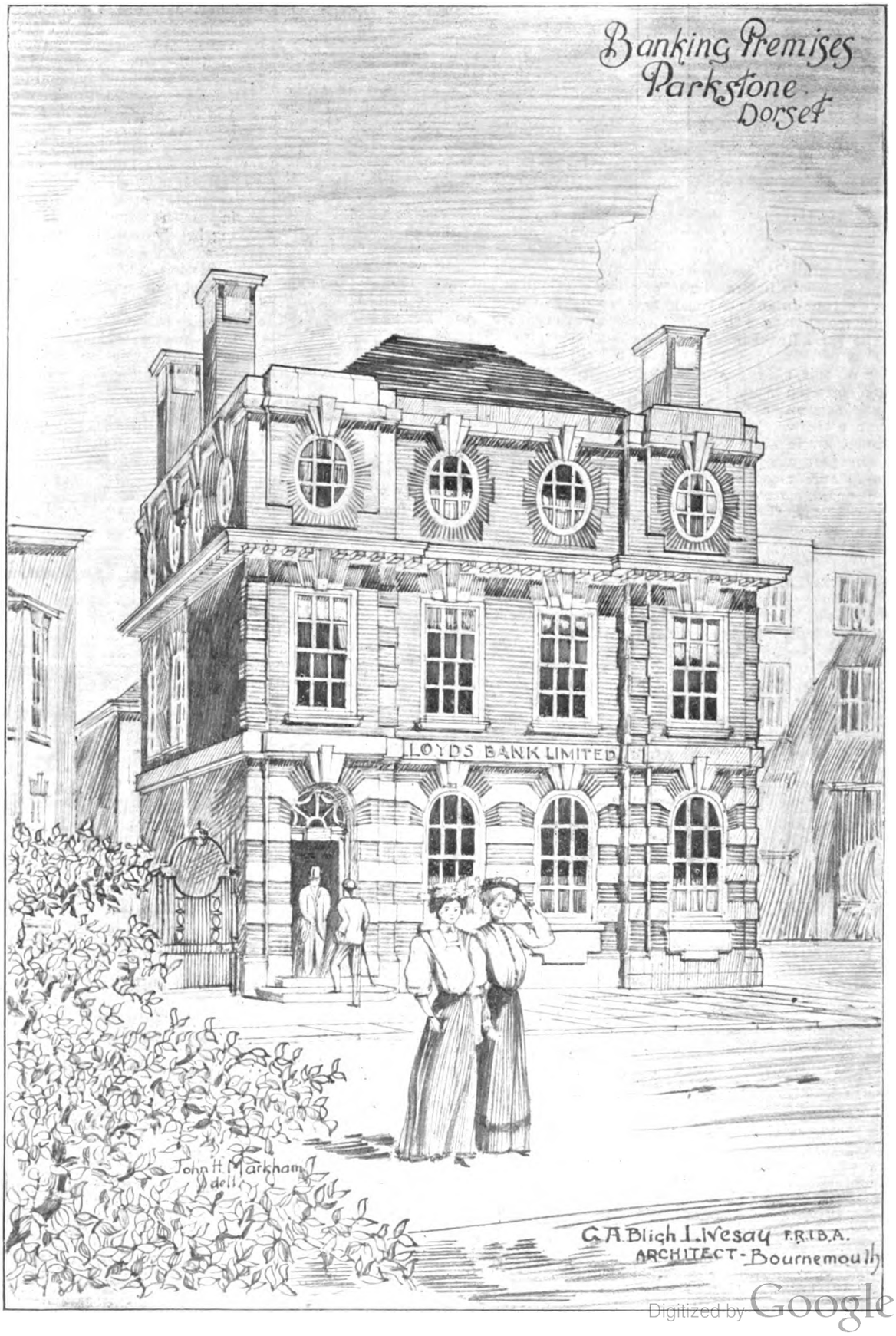
NATIONAL HOUSING REFORM COUNCIL:

NATIONAL TOWN PLANNING CONGRESS.

THE National Housing Reform Council held its annual Congress on August 4, 5, and 6, in the neighbourhood of Liverpool, though the town of Liverpool itself was not specially inspected. Alderman Thompson, Mayor of Richmond, was in the chair. The first day was passed at Port Sunlight, where the Congress was entertained by Mr. W. H. Lever, M.P., and in the evening a reception was held in the University of Liverpool, to which the delegates were invited by the New School of Civic Design. The second day was spent at Southport, where the Congress was entertained by the Town Council, and on the third day the villages of Woodlands and Earswick, in Yorkshire, were visited.

There were about 200 delegates present, including, besides representatives of the principal towns of Great Britain, delegates from France, Germany, Belgium, Holland, and America.

The immediate subject for discussion by the Congress was the Housing and Town Planning Bill at present before Parliament. A series of short but interesting papers were read at different times during the Congress by various delegates. Among the more interesting were those by M. Berlepsch von Valendas (Munich), Mr. Mawson (Windermere), Professor Adshead (Liverpool), Mr. T. C. Horsfall (Manchester), M. Augustin Rey (Paris), Mr. Raymond Unwin (Letchworth), and



Digitized by Google

Professor Eberstadt (Berlin). The last-mentioned paper by the distinguished Professor of Economics at Berlin University was perhaps the most important contribution to the subject which the Congress elicited,

The subject of town planning presents naturally two opposite standpoints from which it may be regarded, the architectural standpoint typified by the "civic centre" so much talked of in America, and the housing standpoint typified by the "backyard." In a congress of this nature, naturally the latter aspect was the one insisted on, but a rather pleasing change was given by Professor Reilly, who read a paper, illustrated by lantern-slides, at the reception held at the University on "Recent Proposals for Civic Art in America." Here economics and sociology were for the moment entirely forgotten, and the Congress were enabled to enjoy an excursion into the domains of pure architecture. To strike a mean between these two extremes, and to reconcile these almost opposed tendencies, seems to us the chief object of the new School of Civic Design founded by Mr. Lever at the University of Liverpool. The reception, which was presided over by the Lord Mayor, himself a member of the staff of the new school, included an address on the proposed work and scope of the school by Professor Adshead, and a description of the landscape gardening section by Mr. Mawson. There was an exhibition of civic and architectural designs by Professor Adshead, and members of the School of Architecture, and a collection of pamphlets and books on town planning brought back by Professor Reilly from America.

The whole Congress was most successfully organised and arranged by Mr. H. R. Aldridge, the Secretary to the Council.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

The Durham Main Sewerage Works.

At the first annual general meeting of this Institution, held at Durham on August 7, Mr. H. W. Taylor, A.M.Inst.C.E., etc., read a paper on "Durham Main Sewerage Works." After some preliminary remarks he said that, generally speaking, the town slopes steeply to the river, which is the natural outlet for the sewage. There are two dams across the river in its course through the city, namely, near Framwellgate Bridge and near Prebends Bridge. These dams impound the water, and consequently sewage matter remains in them for long times at a stretch, the only flushing possible being by means of floods. The fall in the river is not very great, and the difficulty of drainage is thus increased when one bears in mind the very roundabout and tortuous course of the river.

The original scheme adopted by the Council about 1898 was to lay gravitating sewers following the course of the river on both sides to a point opposite Sands House, where the sewage was to be raised by large gas-engines and centrifugal pumps from a pump-well into chemical precipitation tanks. Thence the sewage was to pass through filters and ultimately over about 8 acres of land.

It will be readily seen that with this system the gradients of the sewers were necessarily extremely flat, the flattest one having an inclination of about 1 in 872, while others were of 1 in 670 and 633. This was an important point in the drainage system, as these gradients necessarily were not self-cleansing, and the Council feared deposit taking place in the pipes, which fear the author shared.

The alternative of this was to bring the sewage from the Elvet district by means of a tunnel under Claypath to the Sands. Great difficulties and dangers were prophesied, and it was stated that if an attempt were made to drive this tunnel terribly bad ground would be encountered and the cost would be enormous. The Council, however, acting upon the advice of the Engineer, had a series of boreholes sunk along the line of the intended tunnel, which showed the ground to be very much better than the prophets foretold, with the result that the tunnel was successfully driven without incurring any exceptional trouble or expense. The result of this tunnel is that the gradients of the sewers have been greatly improved, the flattest one being 1 in 300, as compared with 1 in 872, for the circuitous route following the river banks. It is also interesting to note that by this means one river crossing was avoided.

Some of the intercepting sewers had to be constructed upon piles in the river, and this was carried out in the following manner. Rolled steel joists were driven to a solid foundation, the soil was excavated to well below water level, the joist was then encased in a sanitary pipe filled with cement concrete. The result of this is that the work has been very satisfactorily done at a very reasonable cost. Flushing chambers are provided where necessary at the heads of the sewers, and a system of ventilation chiefly by shafts near the houses and ventilating manhole covers in the fields will be shortly installed.

The disposal works finally adopted by the Council are as follows:—The sewage upon arriving at the pump-well will be raised by (*a*) small gas-engines and centrifugal pumps dealing with the dry-weather flow, or (*b*) large gas-engines and pumps dealing with the greatly increased flow in times of heavy rains into (*c*) detritus tanks, then passing through (*d*) storm overflows into (*e*) hydrolytic tank, thence through (*f*) rectangular percolating filters, the effluent from which will, by a series of carriers, gravitate over (*g*) about 12 acres of land, and, passing into the underdrains, will ultimately reach the river in a thoroughly purified state. The excess flows from the storm overflows will discharge respectively into the river and on to storm-water percolating filter-beds, so that the system of purification will be very thorough.

The population of Durham has slowly increased during the past twenty or thirty years, but the chief increase took place at Western Hill. Up to 1906 the district was outside the boundaries of the borough, but since then the boundaries have been extended, and the population increased accordingly from about 14,000 up to 18,000. The system of sewers will easily convey the sewage from at least 30,000 population, while the sewage disposal works are designed for 18,000 population, but it should be noted that the system adopted is essentially elastic.

The pumping arrangements consist of two distinct sets of engines and pumps for dealing with the dry-weather flow and storm flow respectively.

Smaller Set.—The smaller set consists of four and eight horse-power gas-engines, driving centrifugal pumps, and designed to deal with the varying rate of flow, the larger engine and pump dealing with the day flow, and the smaller one with the night flow. These engines and pumps will be fixed in the small underground pumping station.

Larger Set.—The larger set consists of two thirty-horse-power gas-engines, driving centrifugal pumps, and designed to deal with the sewage flow during times of exceptional rains, under which conditions the sewage will probably exceed the dry-weather flow many times. (It should be noted that the system of sewers is on the "combined" system—that is to say, the sewage and storm-water discharge into the same system of pipes, although it is ultimately intended to exclude as much storm-water as possible where this is feasible.)

The detritus tanks are of the deep Dortmund type, having conical bottoms. This is intentionally arranged so that the detritus can be discharged from the bottom of the tank by opening a valve without having to empty the tank, as is necessary with the shallow type. The author considers the Dortmund type of detritus tank to be one of the most efficient at present known.

The type of tank adopted is quite different from the ordinary hollow rectangular or septic tank. It will be built of ferro-concrete. It is a very great improvement on the septic tank, as it really separates the sludge from the liquid in a very much more efficient and satisfactory manner than has yet been obtained with any other kind of tank the author is aware of up to this date. The sewage passes through this tank, and in its passage it is freed of nearly all its solid matters and some portion of its colloids also. Valves are arranged in the bottom of the hydrolytic tank so that the sludge can be run off without emptying the tank, and this is a feature of the type. The tank is the subject of a patent.

The sewage after leaving the hydrolytic tank will flow into a centre feed channel between two rectangular filters, over which it will be evenly distributed by means of rectangular distributors. These filters are provided with false floors so as to afford efficient aeration and drainage, and are filled with suitable media (preferably clinker) graded in size. The floors have a cross to fall, and the effluent is collected in channels at the sides, along which it runs to a sump at the lower end, where the humus passing out of the filters with the effluent will be caught.

The total area of the land purchased by the Corporation consists of 19 acres. Of this the cottage, pumping stations, cart road and other walks, tanks and filters occupy about 7 acres, leaving a net area for irrigation of about 12 acres. The ground has been divided into plots and levelled, the surface being formed into ridges and furrows. The land is, generally speaking, of a sandy loam, with little or no gravel, and clay was encountered in one or two places. Underdrains have been laid under the barrow paths and walks, into which the effluent will percolate, ultimately discharging into the river in a purified state through three outlets.

The arrangement for disposing of the detritus from the detritus tanks and the sludge from the hydrolytic tank is by burial in the land. Trenches will be cut about 1 ft. or 15 in. deep in the land, into which the sludge will gravitate. It will then be immediately covered over, and thus aerial nuisance is reduced to a minimum. The matters raised by the rakes from the screen in the pump-well will also be dealt with in a similar manner.

The storm-water filter is constructed in somewhat similar way to the percolating filters, except that it is only 3 ft. deep and the media is of larger size. The storm-water will be roughly distributed over its surface by means of half-pipes or wooden troughs. This filter is also provided with floor tiles to afford the necessary aeration and drainage.

The estimated cost of the entire scheme, including land, disposal works, and intercepting sewers, is about 43,000*l.*, and it is expected that the works will be carried out for a little less than this amount.

Competition News.

STOKE-ON-TRENT TOWN HALL EXTENSION SCHEME.

The assessor in this competition, Mr. Leonard Stokes, F.R.I.B.A., has made the following report:—"A careful examination of the designs sent in for the Town Hall extension competition will, I think, show that the sum of 25,000*l.* is hardly adequate to meet all your requirements. However, of the less costly designs, I am of opinion that the best is No. 33, and the second and third respectively Nos. 1 and 37." The Town Council in Committee, having carefully considered this report, came to the conclusion that the Council would not be justified in carrying out any one of the designs selected by the assessor, on account of the excessive price. On a further inspection of the designs placed first, second, and third, the

Digitized by Google

Committee were of opinion that, as the cost of the first and third materially exceeded the sum of 25,000*l.*, they were disqualified under rule 15 of the conditions. With respect to the design placed second by the assessor, although they were not prepared to recommend its adoption, they considered that as regarded cost it more nearly conformed to rule 15, and that, therefore, the premium of 100*l.* (for the second place) should be awarded to its author. At a meeting of the Town Council held on Friday, August 13, the above report of the Committee was adopted. The following were the estimates for the designs placed first, second, and third by Mr. Leonard Stokes:—No. 33, 29,000*l.*; No. 1, 25,015*l.*; No. 37, 30,853*l.* The authors of the design placed second are Messrs. Warwick & Hall, of Gray's-inn, W.C. The designs placed first and third by the assessor having been disqualified, the Council have not opened the envelopes containing these competitors' names.

Correspondence.

LONDON COUNTY COUNCIL GENERAL POWERS BILL.

SIR,—I have read with great interest the letters you have published dealing with the London County Council General Powers Act, 1909, and I venture, as a quantity surveyor and as a student of building construction, to draw attention to one or two of the sections upon which considerable differences both of opinion and application may arise. In sect. 22 alternative methods are given for calculating the safe loads which can be carried by stanchions and columns of certain sections, the first of which simply takes the ratio of the least width to the length or height, no matter what the section may be, whereas the section employed makes a great difference in the weight per square inch of metal with which a stanchion may be safely loaded; for example, a box stanchion consisting of two channels or rolled steel joists, with plates riveted to the flanges, will carry considerably more per square inch of section than a large single joist, and yet the ratio of least width to length may be the same in both cases. If the safe load of a stanchion be calculated by both the alternative methods given in the Act, the results will differ; it will be found, for example, that the safe load for a 12-in. by 14-in. stanchion 20 ft. long, consisting of two joists with plates riveted to the flanges and having a sectional area of 52·7 in., is by the first method 168 tons, and by the second method over 197 tons. I have found such discrepancies in all sections calculated by both methods. Architects and surveyors might adopt the first method, the calculation being simpler; but engineers would probably employ the alternative of ratio of length to least radius of gyration. How would the conflicting results be reconciled? The question of eccentric loading has also occurred to me. Does the Act provide such a very moderate weight per square inch of section to enable unequal loading to be disregarded?

Sect. 19, dealing with the superimposed weights on roofs, also presents difficulties. If the slope of the roof is greater than 20 deg. wind pressure, rain and snow shall be estimated at 28 lb. per foot super. of the entire roof surface; but for all other roofs, which would include flats, the superimposed load shall be considered to be 56 lb. per foot of horizontal surface. This requires explanation, inasmuch as the wind pressure on a flat is negligible. The Act is of such great importance that I venture to add my inquiries to those already made, feeling that there must be many who, like myself, fail fully to understand its provisions. A. J. LOUGHBOROUGH BALL.

SLATING.

SIR,—In reply to "Zax," *re* mitred hips, soakers are not absolutely necessary, especially on high-pitched roofs. A little slate-coloured putty is sometimes used; this helps to steady and keep them in their place. SLATER.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnes.—Plans, etc., are to be prepared for making-up Carlton-road, and a piece of road between Ferry-road and Byfield-gardens. The following plans have been passed:—Mr. H. Burridge, eleven houses, Martindale, Mortlake; Mr. Archibald Stanley, sixty-seven houses and two shops, Milton-road, Church-path, and Sheen-lane; Messrs. E. Beach & Co., six flats, Lower Richmond-road; Mr. Arthur W. Osborn, seven shops and ten flats, Castlenau. Mr. A. Harvey has lodged plans for additions to the Lawn Convent, Church-road.

Fulham.—Dr. J. Charles Jackson, the Medical Officer of Health, in his annual report, says six systems of combined drainage for portions of which the Council was liable, owing to certain of the pipes which received the drainage of more than one building forming "sewers" within the meaning of the Metropolis Management Act, were reconstructed during the year, at a cost to the Council of 58*l.* 10s. 4d., the work being carried out by a contractor under a schedule of prices. The sum of 159*l.* 5s. 9d. was also paid to owners in respect of work executed by them in compliance with notices served by the Council at eighteen houses in connexion with house drains which were "sewers" as defined by the Metropolis Management Act.

Hampstead.—Dr. G. F. McCleary, the Medical Officer of Health, in his annual report, which has just been issued, says that since the by-laws of the London County Council, with regard to the deposit of plans of drainage work, came into operation, in August, 1903, Hampstead Council has approved, up to the end of 1908, of 310 plans for the drainage of new buildings, and 2,976 plans for alterations, etc., to drains of existing premises. During the twelve months 911 notices of drainage reconstruction or alteration were received, and in 652 cases the work necessitated the deposit of plans and written particulars. In 438 of these latter cases the work could not be delayed until the Council's approval of the plans had been received; in each of these cases the prescribed "urgency" notice was, therefore, submitted by the builders, the work put in hand forthwith, and the plans, etc., deposited at a later date. Of the 652 notices of drainage alterations, etc., requiring the deposit of plans, 294 related to work that involved the entire reconstruction of the drainage system. In 427 of the 652 drainage cases the work was carried out voluntarily, the number of instances in which voluntary complete reconstruction was carried out being 140. The voluntary work was chiefly done in connexion with the larger houses in Hampstead, and in many cases the voluntary drainage reconstructions were of a very extensive character. In many of the metropolitan boroughs, the report goes on to say, considerable sums of the ratepayers' money are expended every year in the repair of combined drains, which by a legal technicality have become "sewers" for which the ratepayers are responsible. In Hampstead during 1908 many claims were made that combined drains were "sewers" repairable by the ratepayers, but all the claims were successfully resisted except three. In these cases, owing to the absence of proper plans, the Council were obliged to assume responsibility for the drains and repair them as "sewers."

Hanwell.—Dr. Thomas, the Medical Officer of Health, in his annual report, says he is pleased to state that owners are now seeing the force of placing iron drains under houses, and this has been done in a great number of cases. During the twelve months eighty-seven drains were tested, either by the water or smoke test, on complaint, or after infectious disease, and on completion of work after notice. The Volatile test has also been applied on numerous occasions during house-to-house and other inspections.

Maldens and Coombe.—The Surveyor has been instructed to prepare specifications for works in connexion with the laying-out of the Station Estate recreation-ground, also to invite tenders. The estimated cost is 923*l.*

Marylebone.—Dr. Alexander Wynter Blyth, the Medical Officer of Health, in his annual report, writes that in a district such as this, where the demolition of old buildings is a matter of pretty frequent occurrence, it is becoming increasingly important that some measures should be taken to prevent nuisances from the dense clouds of dust which are at present raised in the carrying out of the work. A letter was addressed by him to the County Medical Officer of Health, asking whether there was any power to prevent this unpleasant and possibly dangerous nuisance; but a reply has been received that there is no power at present in existence which would enable either the County Council or the Borough Council to deal with the matter. Apart from the nuisance occasioned by the dissemination of dust in this manner, there is also the possibility of infection to be considered. The seriousness of the matter was recognised in Paris some ten or eleven years ago, and a by-law is in existence there compelling house-breakers to water the part of the building which they are pulling down in such a manner as to prevent dust arising from it. It is to be hoped that some such power may be obtained in London before long. House drainage continues to demand the constant and vigilant attention of the department. That the work is increasing is shown by the fact that 480 plans of new drainage were received and dealt with during 1908, as compared with 313 in 1907, an increase of 167. The number of inspections carried out was 4,371, namely, 2,292 in the district north of the Marylebone-road, and 2,079 in the south district. A good deal of overlapping of work and division of responsibility in connexion with drainage alterations has, it is believed, been eliminated. The rule of the department now is that whenever any complaint is received in regard to drainage the district inspector makes a surface examination and the preliminary inspection, using possibly chemical tests, smoke tests, and the like. If he finds that there is a merely trifling defect he carried the remedy through to completion. If, on the other hand, this preliminary examination discloses a more serious state of affairs, he makes a suggestion in his journal that the drains be opened up for examination. After approval by the Medical Officer of Health, the usual request to the Works Department is issued, and the case is thereupon handed over at once to the special drainage inspector concerned, who visits the drains when they are opened up, issues the necessary intimation and statutory notice, and supervises the whole of the reconstruction. In this district, where speculation in lease values appears to be very freely indulged in, one is constantly being asked to allow departures from the strict requirements of statutory notices and intimations. Each case of this kind has to be dealt with on its merits, but the general rule is that lease life is not accepted as an excuse for modification of requirements which would otherwise be necessary. In order to have a more complete record of drainage work, the form used in depositing plans has been slightly amended, and a lengthy form of specification has been drafted which the department now require the builders to fill in in detail. The use of this form has the double advantage that the department gets all the information it requires, and that the architects and builders are shown precisely the nature of the specification which is required from them. Notices of approval of plans are now sent out direct from the Public Health Department, the duplicate being returned to the persons depositing the plans.

Richmond (Surrey).—Dr. Crocker, the Medical Officer of Health, in his annual report, says the drainage of forty-four houses was entirely reconstructed during the year. The new drains are laid upon a bed of concrete, and the joints are made of cement. After passing the water test, the drains are benched with concrete before being covered in, and the water test is applied after the drains have been covered in. Efficient intercepting traps, inspection-chambers, and inlet and outlet ventilation is insisted upon. The sanitary inspector keeps full particulars of this work in his office for reference. The drainage was amended at sixty-two houses, it not being necessary to reconstruct the whole of the drains.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ANDOVER.—Additions, New-street school. Architect, Mr. J. Taylor, The Castle, Winchester.

Bankside (Hull).—Warehouses for Messrs. Sissons Brothers, Hull.

Barrow.—Skating-rink, Abbey-road: secretary, Barrow Rink Company. Twenty-four houses, Devon-street; architect, Mr. A. Ingham, Barrow.

Batley.—Additions, Batley Parish Church. Architects, Messrs. Hoare & Wheeler, Orchard-street, W.

Belfast.—Warehouse for Messrs. Adams. Builder, Mr. J. Hogg, Jury-street, Belfast.

Blackburn.—Church; architects, Messrs. Gradwell & Son, Victoria-street, Blackburn. Mission hall, King-street (2,500*l.*); architect, Mr. F. J. Parkinson, 9, Richmond-terrace, Blackburn.

Bowburn. — Chapel, Bowburn Colliery. Trustees, Wesleyan Community, Bowburn.

Chorlton - cum - Hardy. — Church house. Trustees of Macfadyen new church.

Compton (Leek).—Co-operative premises, for Moorland Co-operative Society.

Croydon.—Skating-rink. Architects, Messrs. Berney & Son, 104, George-street, Croydon.

Dartmouth. — Swimming-baths. Borough Surveyor.

Dewsbury.—Additions, Scarborough Hotel, for Messrs. T. Ramsden, Ltd., Dewsbury.

Dresden.—School. Architect, Mr. J. Brealey, Longton.

Dunfermline.—Printing works, for Messrs. A. Romans & Son.

Eastchurch (Kent).—Additions to school. Architect, Mr. W. Robinson, Caxton House, Westminster.

Garston.—Bank (3,000*l.*); architect, Mr. Woolfall Eccles, Castle-street, Liverpool; builders, Messrs. J. & G. Chappel, Walton.

Glencraig. — Extensions, school (5,000*l.*). Architect, Mr. J. C. Campbell, East Wemyss.

Digitized by Google

Haverton Hill.—School (4,000*l.*). Builders, Messrs. J. Allison Brothers, Middlesbrough.

Hoylake. — Hospital. Builder, Mr. J. Merritt, Birkenhead.

Hull.—Church, Anlaby-road, and Sunday-school, Argyle-street; trustees, Wesleyan Community, Hull. Mill for Digit Disinfectant Company, Ltd.

Keighley.—Confectionery works (2,000*l.*). Architects, Messrs. J. Haggas & Sons, Keighley.

Kildale.—Wesleyan chapel. Architect, Mr. J. T. Tarran, Hutton Rudley.

Kingwood.—Boot factory, for Messrs. Lovell & Golding, Bristol.

Kirkcaldy.—Factory, for Messrs. Robert Stocks & Co., Kirkcaldy.

Liverpool.—Residence (2,200*l.*); architect, Mr. H. L. Beckwith, Castle-street, Liverpool. Printing works (4,500*l.*); architects, Messrs. J. & A. Burroughs, Vernon-street, Liverpool. House (1,500*l.*); architects, Messrs. Bradbury & Son, Cook-street, Liverpool; builder, Mr. H. E. B. Green, Knight-street, Liverpool.

Llanhilleth.—Police-station. Architect, Mr. H. Tanner, Shire Hall, Newport (Mon.).

Lochgelly.—School (6,000*l.*). Architect, Mr. A. Scobie, 5, Douglas-street, Dunfermline.

Luton.—Additions, workhouse. Builders, Messrs. Barber & George, Luton.

Merside.—Mill, Bank Bottom. Architect. Mr. J. E. Crowther, Merside.

Morley.—Additions to factory, for Morley Cloth Finishing Company, Ltd.

Newcastle-on-Tyne. — Skating-rink. Architect, Mr. G. W. Parkinson, Newcastle (of Parkinson & Sons, Ltd.).

Northwood (Middlesex). — The following plans have been passed:—Additions, St. Helen's School: builder, Mr. W. J. Page. Four houses, Cheney-street, Eastcote: Messrs. Norton Brothers.

Norton-in-the-Moors. — School. Architect, Mr. J. Hutchings, Shire Hall, Stafford.

Oakham.—Additions to church. Builder. Mr. W. Higgs, Oakham.

Oxford.—Additions, Ambroseden School. Architect, Mr. S. Stallard, New-road, Oxford.

Pennel (Carmarshan).—Rebuilding Baptist church. The pastor.

Seaham Harbour. — Primitive Methodist chapel. Architect, Mr. J. W. Phillipson, Newcastle.

Sherborne (Dorset).—School. Architect, Mr. J. Fletcher, Wimborne.

Skipton.—Additions, P.O. (1,500*l.*); architect, Mr. J. W. Broughton, 19, High-street, Skipton. New banking premises (3,000*l.*); architect, Mr. J. W. Broughton, 19, High-street, Skipton.

Taunton. — Post-office. Builders, Messrs. Cowlin & Sons, Bristol.

Tunbridge Wells.—Church. Rev. A. D. Rowe, Wilkins-road, Tunbridge Wells.

Umbersleigh.—School. Architect, Mr. P. Morris, 1, Richmond-road, Exeter.

Waterfoot.—Market hall (1,600*l.*). Architect, Mr. J. Johnson, Council Offices, Rawtenstall.

West Kilbride.—House (2,000*l.*). Architect, Mr. J. Laird, 213, West Campbell-street, Glasgow.

Wick, N.B.—Institute (8,000*l.*). Dr. J. R. McMillan, Union-street, Aberdeen.

Woolford (Bury).—Mills, for Messrs. Hazlett & Co.

Obituary.

MR. H. E. HARRISON.

We deeply regret to announce the death, on August 12, of Mr. H. Erat Harrison, B.Sc., M.I.E.E., the Principal of Faraday House, London. Although only fifty years old, he was one of the pioneers of the electrical industry in this country. In 1882 he organised an electrical engineering college in Red Lion-square. At that time nearly all engineers were of opinion that house lighting by electricity was quite impracticable; they believed that its use was limited to advertising theatres by means of Jablochkoff candles, which, it will be remembered, were the forerunners of arc lamps. It needed no little courage, therefore, seriously to undertake the training of some twenty students, most of whom had serious doubts as to whether there was any opening in what appeared to them to be a somewhat fantastic profession. Some of them who are now leading electrical engineers admit that the thorough grounding in electrical principles they obtained from Mr. Harrison was the main factor to which they owe their success. In 1890 he organised Faraday House, which became almost at once the leading electrical college in London. Mr. Harrison was a strong advocate of the "sandwich" system of training engineers. The course at Faraday House lasts for four years, and during the first year the students receive a thorough grounding in elementary science and engineering. During the second the student goes to the works of a mechanical engineering firm and receives practical training in engine building and erecting. In the third year he returns to Faraday House and attends special lectures in advanced technology, and in his last year he enters one or more of the numerous electrical engineering works affiliated to the college, and acquires practical experience in the construction and use of modern electrical machinery. Mr. Harrison took the keenest interest in the after careers of his pupils, and one of his greatest pleasures was hearing of their success. For several years Mr. Harrison was a valued contributor to the *Builder*, and we may specially mention the series of articles on "Electricity, Magnetism, and Electricity Supply" which appeared in our Student's Column in 1890. He was for six years a member of the Council of the Institution of Electrical Engineers, and was Board of Trade Inspector in electric lighting for several towns in England and Wales.

MR. STANLEY.

The death, on August 14, at his residence, "Camberlow," South Norwood, is announced of Mr. William Ford Stanley, J.P., F.G.S., F.R.A.S., etc., aged 80 years. Mr. Stanley was the founder, and during a long period the head, of the well-known firm trading in Great Turnstile, High Holborn, as makers of drawing, surveying, measuring, optical, and other scientifical and mathematical instruments. Seven years ago he founded and built Stanley Hall at South Norwood—for which he himself made the plans and designs—as an institute for instruction in the arts; he subsequently built and endowed the Stanley Technical Trades Schools. Mr. Stanley began his career under indentures to his father, a mechanical engineer, of Buntingford; in 1854 he started in business as a worker in ivory and metal, and then applied himself to the making of scientifical instruments and appliances. He was the author of several text-books upon surveying and drawing instruments, of a treatise upon the properties and motions of fluids, and, in 1895, of a volume dealing with the nebular theory.

MR. D. C. PROUDFOOT.

The death took place on the 6th inst., at Braemar, where he had gone for the benefit of his health, of Mr. D. C. Proudfoot, formerly Road Surveyor for the City of Edinburgh. The deceased, who was about 73 years of age, retired three years ago, when Mr. Sim was appointed his successor. In 1869 Mr. Proudfoot joined the City Road Trust as surveyor, but in 1878 the department was transferred to the charge of the Corporation. He was the pioneer of steam road rolling in Scotland. He introduced the first road roller in Scotland in 1870, and this engine is still in use driving a stone crusher.

MR. JOHN HUTTON.

The death has occurred at Blackpool of Mr. John Hutton, builder, of 1, Cowper-street, Leeds. Mr. Hutton, who was in his 90th year, was concerned chiefly in the erection of terrace houses and villa residences suitable for business men of moderate incomes.

General Building News.

ST. MARY'S CHURCH, WHAPLODE.

Mr. W. Weir has been appointed to carry out the reparation of the parish church, Whaplode, Lincolnshire, whereof the Norman nave was extended, westwards, in the XIIIth century, and has an open roof. To the south-east stands the XIIIth century tower, having a chapel at the ground level which formerly opened into the nave. The church contains the vault of an old Lincolnshire family, the Irbys, Barons Boston.

DIGBY PARISH CHURCH, LINCS.

Mr. W. Bond, of Grantham, has been appointed as architect for the enlargement of the church, dedicated to St. Thomas of Canterbury, at Digby, in the parts of Kesteven, near Sleaford. The church, mainly in the Decorated style, is a handsome edifice, with embattled walls, a richly ornamented Norman doorway, and a tower having battlements and crocketed pinnacles, surmounted with a spire.

PRIMITIVE METHODIST CHURCH, SEAHAM HARBOUR.

The foundation-stones of the new Stewart-street Primitive Methodist Church, Seaham Harbour, were recently laid. The plans have been prepared by Mr. J. W. Phillipson, architect, Newcastle, and the contract for building is in the hands of Mr. T. Curry.

NORTH PERROT CHURCH, SOMERSET.

Additions are about to be made to the parish church of St. Martin, North Perrot, near Crewkerne. The cruciform church was built in the later years of the XVth century; it contains an altarpiece sculptured in alto-relievo by Westm.: cott the younger, representing the Last Supp.., and modelled after Leonardo da Vinci's wall painting at Milan. The new work at the church will be carried out, we understand, by Mr. W. D. Caröe.

NEW CHURCH, CLEVELEYS.

The foundation-stone of the new church of St. Andrew, Cleveleys, will shortly be laid. A total of 10,000*l.* will be needed for the church, vicarage, and Sunday-school. The church itself will cost about 5,000*l.*, and will seat 550. The architect is Mr. R. H. Cunliffe, of Accrington.

SECONDARY SCHOOL, BARNSTAPLE.

A secondary school is being built in this town by the Devon Education Committee, at a cost of 14,000*l.* It will accommodate 150 boys and 150 girls, and has been designed by Mr. Percy Morris, Architect to the Committee, and Messrs. G. Pollard & Co., Ltd., are the contractors.

INFANTS' SCHOOL, SOUTH SHIELDS.

A new infants' school has been erected by the South Shields Town Council. The site is one of 7,965 sq. yds., and the scheme provides for the erection ultimately of boys' and girls' departments. The total cost of the structure and the caretaker's house, exclusive of land, furnishing, and professional charges is about 6,800*l.* Messrs. Stephen Sheriff & Sons were the contractors, and Mr. Henry Grieves was the architect.

NURSES' HOME, TIPTON.

The new premises of the Tipton Nurses' Home, formerly a private residence, have now been opened. The house has been altered to suit the purpose for which it is intended, plans and specifications having been drawn up by Mr. G. H. Wenyon, and the contract executed by Messrs. Henry Smith & Son, West Bromwich.

PAROCHIAL BUILDINGS, GATESHEAD.

New parochial buildings are being erected for St. George's Church, Gateshead. The buildings are intended to be of coursed rock-faced stone walling to main fronts, with chiselled bays and dressings, covered with grey slates. The cost, exclusive of furnishing, is estimated at 2,800*l.* The plans for the building were competitive, and those placed first by the assessor, Mr. G. Hodgson Fowler, were prepared by Mr. Richard Wylie, of Gateshead.

NEW BUILDINGS, ULVERSTON.

At a recent meeting of the Ulverston Rural District Council, the Plans and Finance Committee recommended for approval plans for an addition to farm buildings at Headhouse Farm, Newton-in-Cartmel, for Mr. H. Hibbert, J.P.; additions to bungalow at Kirkby, for Mr. R. W. Taylor; bungalow at Staveley, Lake Side, for Mr. H. P. Hay; plan for villa at Barrowfield, Pennybridge, for Miss Fairhurst; proposed lodge at Tower Wood, Windermere, for Messrs. Harrison, Hall, & Moore, architects; new farmhouse and buildings at Scutcheon House Farm, Sawrey, for Mr. R. H. Edmondson, J.P.

THE MANSION HOUSE.

Advantage is being taken of the civic vacation to increase the provisions against fire at the Mansion House. The work is being executed for the Corporation on plans and suggestions made by Mr. Sydney Perks, the City Surveyor. The general idea of the scheme is the separation of the Egyptian Hall from the domestic offices and State apartments by means of steel doors. Special attention is being given to the Egyptian Hall, as it is erected immediately over the kitchens. Iron and steel doors are also being erected in the State drawing-rooms and the saloon, and an iron and glass screen will be placed at the east end of the Egyptian Hall. Iron gangways are being placed on the roof to facilitate the escape of the domestic staff, and fire alarms and appliances are being overhauled and hand extinguishers provided throughout the building. The cost of these works will be over 1,000*l.*

RENOVATION OF THE CITY GUILDHALL.

On the initiative of the City Surveyor, Mr. Sydney Perks, and under the direction of the City Lands Committee of the City Corporation, the work of renovating the interior of the Guildhall is in progress. The stonework, which for a very long period has been covered with buff paint, is now being cleaned, and when the work is completed it will greatly lighten and improve the Guildhall. Under Mr. Perks's direction, also, improvements are being carried out in the crypt. Until recently admittance has been gained through a small and inconvenient doorway, the ancient entrance having been hidden and boarded up. This entrance also could only be reached by a ladder. The obstructions have now been

Digitized by Google

removed, with the result that the ancient gateway has been exposed and is entirely visible. A staircase also has been built of wood, obtained from a house in New Broad-street, and forms an excellent entrance to the crypt. The fact of the reopening of this gateway is, says the *Telegraph*, of great interest, and it may be pointed out that until this reopening no one previously had entered the crypt through the gateway for hundreds of years. The stonework of the entrance, which is in keeping with the rest of the building, dates from 1420, and is in a good state of preservation. The old hinges, on which the former gate hung, still exist, and the marks of the original steps are still to be seen. On either side of the old gateway were discovered portions of niches, which were evidently used for holding statues, and in some of which remnants of the material can be seen.

TRADE NEWS.

New schools have recently been erected at Bristol, in Sommerville-road. They have been built by Messrs. Humphries & Son from the designs of Messrs. Gough & Sons, of Bristol. The stone used is St. Aldhelm box ground from the Box Hill quarries.

The Chilvers Cotton new schools are being ventilated with Shorland's patent exhaust roof ventilators supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Stained Glass & Decoration.

WESLEYAN CHAPEL, WESTBOURNE-GROVE, WEST KIRBY.

A large stained-glass window, consisting of three lights, has just been erected in this church; the centre light depicts the "Ascension of Our Lord," and in the side lights are shown two incidents from the life of Our Lord. The work was carried out by Percy Bacon & Brothers, of London, under the supervision of Mr. Edmund Ware, architect, of Liverpool.

Appointment.

Mr. J. W. Harrison, Surveyor to Wombwell (Yorks) Urban District Council, has been appointed, out of 146 candidates, Surveyor to the Uxbridge Rural District Council. Mr. Harrison, prior to going to Wombwell, five years ago, was Building Surveyor to Birkenhead Corporation, and before that was connected with the sanitary department of the Bradford City Council.

Sanitary and Engineering News.

GRAVING DOCK, SOUTH SHIELDS.

An extension in connexion with ship repairing work has been made at South Shields by the Middle Docks and Engineering Company, Ltd. The principal feature of the undertaking has been the construction of a new graving dock, to accommodate the biggest vessels trading to the Tyne, together with engineering shops, pumping-station, plate-sheds, and brass foundry. The length of the dock, which is the largest in Shields Harbour, from the inner side of the gates to the face of the coping at the head is 460 ft. It is 62 ft. 6 in. wide between the pier-heads, and the depth of water over the sill is 23 ft. 6 in. at high tide. The contractor for the work is Mr. Louis P. Nott, of Westminster, and it has been executed according to the designs and specifications, and under the supervision of Mr. Thos. Hanning, M.Inst.C.E., of Newcastle.

FERRO-CONCRETE BRIDGE, STAKEFORD.

The official testing of the ferro-concrete bridge over the River Wansbeck was recently carried out under the superintendence of Dr. A. W. Wrightmore, Government Inspector. Amongst those present were:—Mr. D. Balfour, jun., M.Inst.C.E., representing the engineers; Messrs. Balfour & Son, of Newcastle-on-Tyne; Mr. Bean, County Surveyor; Mr. T. J. Gueritte, of Messrs. Mouchel & Partners; Mr. C. W. Brims, of Messrs. Brims & Co., contractors for the work. The length of the structure between abutments is 264 ft., which is divided into six spans of 44 ft. each. There is a 20-ft. carriage-way and 4-ft. footpath. The borings for the foundation showed that rock was found 37 ft. from the surface on the south side, 24 ft. in the centre of the river, and 20 ft. on the north side, with bands of rock nearer the surface. The whole structure is carried by 14-in. by 14-in. ferro-concrete piles driven down to the rock by a Lacour steam piling machine, with a 1½-ton ram and a drop of 5 ft. In no case has the set of the piles with ten blows exceeded ¼ in. The abutments consist of ferro-concrete carried on a pile foundation, properly braced. Each pier has two ferro-concrete cylinders, each enclosing two piles having vertical steel rods embedded in concrete filling and cross-braced together. The main girders rest on the piers, and carry the cross-girders, which support the decking of the roadway, on which is laid tar macadam for the carriage-way and cement concrete for the footpath. On each side of the roadway there is an iron hand-railing, with pillars at each pier. The bridge was tested first by two 16-ton steam rollers standing side by side in the centre of each of the six spans, when the deflection was found not to exceed ¼ in. on any of the spans. The engines were then run across the bridge at varying speeds, when the above deflection was not exceeded. The maximum deflection allowed in the specification was ½ in.

BLACKFRIARS BRIDGE AND SUBWAYS.

The work of widening Blackfriars Bridge by 30 ft. on the western side is now practically complete. All that remains to be done is the repaving of the old part of the bridge; and by the end of the present month, or at latest the first week in September, the widened bridge will be available for traffic. With the present addition the width of the bridge will be 105 ft. between parapets, making it the widest bridge across the Thames. The new roadway is 73 ft. wide and the footpaths each 16 ft. wide. The whole of the bridge has been repainted. With the exception of the shore span on the northern side, the old face ribs and parapets have been utilised for the new western arches. The subways now under construction at the northern end of the new bridge will also be completed at an early date. It will be remembered that the scheme adopted provides for two shallow subways between the Thames-embankment and Queen Victoria-street, each 10 ft. wide and 8 ft. high. The more important subway, that from the Embankment to the corner of Bridge-street and Queen Victoria-street, is completed except for the tiling; work on the second subway will now be vigorously prosecuted, and should be finished within three months from the present time. The difficulties of the work have arisen out of the necessity of diverting two 24-in. and other large gas mains of the Gas Light and Coke Company, as well as water mains. In connexion with the second subway it will be necessary to reconstruct the crown of the Fleet sewer, and to divert the main supply cables of the Charing Cross, West-end, and City Electricity Company—the latter a somewhat delicate task necessitating the laying of temporary duplicate mains. There will be every inducement for the public to use these subways, as the floors will be only 10 ft. below street level. Mr. Anderson is acting for the Corporation on behalf of the City Engineer.—*Times*.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Mr. W. L. Lucas is moving from 17, Ryder-street, St. James', S.W., to larger offices, and on and after August 21 his address will be 6, The Sanctuary, Westminster, S.W.

HOLY TRINITY CHURCH, KINGSWAY.

The question of the demolition of Holy Trinity Church, Kingsway, was dealt with at a London Consistory Court, presided over by the Chancellor, Dr. Thomas Tristram, K.C., at St. Paul's Cathedral, on the 5th inst. The Rev. J. L. Evans, vicar, who appeared on behalf of the churchwardens and parishioners, asked the Court to grant a faculty to pull down the present church and remove certain human remains under the church to consecrated ground. The church was built in 1831, and was restored in 1887. In 1904 the construction of Kingsway was commenced by the London County Council, and in the following year the church began to crack. In 1906 the arches of the vaults inside the church had to be shored up, and in 1908, with the sanction of the Bishop of London, the church was closed. In the same year they had a "dangerous structure" notice served upon them with a magistrate's order. In consequence of the large amount of water drawn away by the construction of the tube railway and other excavations, said the vicar, the church was shattered and rendered unfit for worship. It was proposed to erect a new church at a cost of 8,000*l*., of which at present 6,500*l*. had been raised. The faculty was granted.

IMPROVEMENTS OF STREETS IN THE CITY OF LONDON.

In his annual report Mr. Frank Summer, City Engineer, states, in respect of the current widening of Fleet-street (south side), that the Corporation have resolved to complete the entire widening, at an outlay of 500,000*l*., subject to the payment of one-half of that sum by the London County Council, who, during the twelve months, contributed 8,382*l*. towards the works now in progress there, as well as 2,328*l*. towards the cost of increasing to 50 ft. the width of Mansell-street, between Aldgate and the City limits. Notices to treat have been served upon owners for the acquisition of their interests for carrying out the widening to 70 ft. of Bishopsgate-street Without, the London County Council agreeing to contribute 156,950*l*. upon a condition, acceded to by the Corporation, that a tramway shall be laid down between Middlesex-street and the City boundary. A widening of Lower Thames-street is contemplated by the Corporation.

THE MUSEUMS ASSOCIATION.

In the course of his address as President of the twentieth annual conference of the Association, held at Maidstone last month, Mr. Henry Balfour, M.A., Curator of the Pitt-Rivers Museum, Oxford, dwelt upon the necessity of a national folk museum for Great Britain, to be based upon the model of the Nordiska Museum, founded in Stockholm by the late Dr. Artur Hazelius. An interesting paper upon "General and Local Photographs in Museums," was read by Sir Martin Conway. Dr. Tempest Anderson, President of the Yorkshire Philosophical Society, was elected President for next year, when the conference will be held at York.

ROMAN REMAINS, NORTH-WEST KENT.

Excavations are being made upon the property of the Associated Portland Cement Manufacturers, Ltd., near Northfleet, and the foundations of a Roman villa have been discovered, together with a well, about 12 ft. deep, pavements of red tile, and a large quantity of vases, pottery, etc. Close by are the Swanscombe Woods chalk pits, where British flint tools and weapons, and horn implements, with Roman utensils, have just been found. Swanscombe—originally Swenes-camp—derives its name, reputedly, from the landing there of Sweyn, King of Denmark, and is the place where the Kentish men obtained from William the Conqueror a confirmation of their ancient privileges, particularly of the law of gavelkind. There had been Roman settlements at Springhead, near Gravesend, Southfleet, Dartford, and elsewhere around in proximity to the more ancient Watling-street.

THE LATE MR. PENFOLD'S ESTATE.

The estate of the late Mr. John Wornham Penfold, F.R.I.B.A., F.S.I., and sometime surveyor to the Goldsmiths' Company, who died on July 5, has been valued at 62,071*l*. gross, with 49,076*l*. net personalty. The bequests include 100*l*. to the Architects' Benevolent Society, 500*l*. to the Surveyors' Institution, and 150*l*. to the Trustees of the Charitable Fund of the Surveyors' Club.

THE OLD MAIN BRIDGE AT FRANKFORT.

The Town Engineer at Frankfort has worked out a scheme, which is universally approved, for preserving the memory of the historical old bridge. This consists in building a new bridge similar to the old one. The unnoticeable deminution in the number of arches provides the necessary width in the span of the new arches.

NEWCASTLE CITY ENGINEER'S REPORT.

The report of the City Engineer of Newcastle (Mr. C. R. S. Kirkpatrick) to the Town Improvement and Streets, Sanitary, and other Committees for the year ended March 31, 1909, states that the estimated expenditure for 1909-10 on roads and streets and cleansing amounts to 84,342*l*. Last year the expenditure was 88,969*l*. The amount expended on sewers during the past year has been 3,968*l*. The total length of sewers added during the year has been about four and a half miles. The expenditure on maintenance of macadamised roads during the past year has been 9,834*l*., inclusive of 945*l*. spent on tar-spraying. There has been a reduction in the quantity of street sweepings and road slurry removed, principally due to the roads being tarred. The cost of the work done in new streets under Council and other orders (and recoverable from property owners) has been 20,388*l*. In addition, 13,170*l*. has been expended on work done for gas, water, and other companies, making a total of 33,558*l*. for the year, exclusive of 10,224*l*. for tramway track maintenance, repairs and renewals, etc. The expenditure on the general maintenance of the tramway track for the year ended March 31, 1909, has been 7,313*l*. A vehicle fitted with carborundum blocks has been engaged by night grinding the rails to remove corrugations, with satisfactory results. The cost has varied from 6d. to 1s. per lineal yard. It is found that immediately the corrugations are removed the maintenance on that section of the track is automatically reduced. The

Digitized by Google

construction of the new berth (360 ft. long) at the east of the Ouseburn has been continued, but progress has been slow owing to the clay passed through being exceedingly hard, necessitating continual blasting. The cost during the year on works has been 14,184*l.*, making a total cost to date (exclusive of land), under the Act of 1904, of 26,349*l.* The total expenditure for the year ended March 31, 1909, for the various committees was 211,753*l.*

SANITATION IN LAMBETH.

The annual report of the Medical Officer of Health for Lambeth, just issued, mentions that there are 41,511 inhabited houses, giving an average of 7·3 persons per inhabited house. Dealing with combined drainage, the report states:—"The law, as it at present stands, throws the responsibility upon the Borough Council of repairing certain combined drainages as sewers, and as the property of the sanitary authority, but a large number of combined drainages are relaid by private owners as the result of voluntary work or of the service of notices by inspectors. In these latter cases, the owners are either responsible, by virtue of the sanitary authority possessing a plan or application (or both) in connexion with the combined systems of drainage, or prefer that the combined drains should be regarded as 'drains' and not as 'sewers.'" Under the system of house-to-house inspection 2,520 visits were made during the year. In 373 houses a result was obtained from the chemical test applied to the drains. Altogether there were found to be as many as 1,733 nuisances in the houses inspected, but usually the nuisances were of a trivial character.

RECEIVING HOMES FOR LUNATICS.

As has been reported in the *Builder*, the London County Council, at its last meeting prior to the summer recess, decided to make application to Parliament for powers to establish and maintain receiving houses for alleged lunatics. The question of providing such accommodation has been before the Council for some time. Ten years ago there was a suggestion that four receiving houses should be established, two north and two south of the Thames. The cost of the land was then stated to vary from 2,000*l.* to 3,000*l.* an acre in the south-east and south-west districts, and from 8,000*l.* to 10,000*l.* an acre in the north and north-east districts, and that the cost per bed for building and equipment would be probably 300*l.* Later, in 1902, the Finance Committee pointed out that the cost would be about 500,000*l.*, but now the Asylums Committee does not think such a large expenditure will be necessary. The Committee considers that one home on the north and another on the south, each to accommodate 250 patients, will meet the needs of the case. It has already been suggested that a site in North London, which has been purchased for another purpose, should be utilised, and thus it will only be necessary to secure a site in South London. The total cost of the whole scheme therefore is estimated at 150,000*l.* to 200,000*l.*

DESIGNS OF BUILDINGS ON CROWN PROPERTY.

In the House of Commons on Tuesday, Mr. Ashley asked the Prime Minister if his attention has been called to the statement by the directors of the Piccadilly Hotel, Ltd., now in liquidation, that alterations in the designs of the building were insisted on by the representatives of the Crown as landlord, which entailed an expenditure of about 160,000*l.*, and a further large loss owing to the diminished rentals of shops sublet in the building; and whether it is proposed to continue this system? —Mr. Hobhouse replied:—I have seen the statement referred to, but there must, I think, be some mistake in it, as I am advised that the Crown requirements (which were, in the main, settled by the previous Government) could not in themselves have entailed the extra cost or loss in rental alleged. It is clearly desirable that, in the case of large rebuilding schemes on Crown property, due regard should be paid to the architectural result, and I am not prepared to say that a slight additional expense is not sometimes justified for this purpose. At the same time, I can assure the hon. member that care is taken that commercial considerations are not overlooked—indeed, I am at the present moment considering the best method of securing these two objects in another important rebuilding scheme. Mr. Ashley: Will the right hon. gentleman say why, what is justified in the case of the State, is not justified in the case of an individual owner? Mr. Hobhouse: I do not think that there is anything unjustifiable in requiring a lessee of property to conform to architectural requirements. Mr. Ashley: Will the right hon. gentleman kindly give that information to the right hon. gentleman, the Chancellor of the Exchequer? No reply was given.

PUBLIC WORKS IN URUGUAY.

The British Consular Report on Uruguay, which has just been issued, says that the construction of the Rambla del Sud has been entrusted to a British syndicate; this great engineering work, which will take five years to complete, and cost 1,355,000*l.*, will add greatly to the attractiveness of Monte Video, which is rapidly becoming not only the chief commercial port of distribution for the southern part of South America, but also a favourite resort for tourists and summer residents. The embankment, which will be 4,330 yds. in length, will consist of a stout sea wall, 13 ft. above sea level, and an esplanade 75 yds. wide, available for tramways, carriage roads, footpaths, and rows of trees. The proposed line of embankment takes a gentle outward curve, and, as it will run a considerable distance from the present irregular natural coast line, a large area of land will be reclaimed from the sea. The total area of land thus to be reclaimed is calculated at not less than 125 hectares, or about 308 acres. After deducting the quantity necessary for the esplanade, streets, etc., there will remain available for building purposes over 800,000 sq. metres. Part of this land will be assigned to the Government, and the remainder will be the property of the syndicate; the minimum price of the land is fixed at $9 per square metre. A scheme dealing with the long-standing problem of improving the connexions between the old and new part of the city is under serious consideration. The idea of it is to a large extent copied from the Victor Emmanuel II. Gallery of Milan, and the plans have been prepared by a Swiss architect, assisted by Uruguayan engineers. In connexion with lighthouse reform, the most important work is the erection of a lighthouse on the north point of the "English Bank," near Monte Video, which it is estimated will cost about 40,000*l.* The Government have obtained the sanction of the Chambers for this expenditure, but have deemed it advisable to defer for the present the commencement of a work the urgent necessity of which is nevertheless recognised by all navigators.

BRUSSELS INTERNATIONAL EXHIBITION, 1910.

The exhibition will be held in buildings erected on the Solbosch plain, having the Bois de la Cambre in the background. The British section is to be organised by the Exhibitions Department of the Board of Trade, and the recently-adopted system of collective exhibiting will be employed as far as possible. A roads congress will be held; the grounds are to be laid out as gardens, with exhibits by the Gand horticulturists, and a reproduction of Old Brussels will be erected.

GARDEN SUBURB, WALLINGTON.

A local committee is formed to acquire and lay out the Elm Grove estate of 30 acres, in the parish of Wallington, near Carshalton and Sutton, which can be purchased for 7,500*l.* It is proposed to constitute a company, under the name of East Surrey Tenants, Ltd., and to proceed upon a co-operative basis of profitable development, and at the same time to preserve the natural beauties of the property, which is traversed by the Wandle. A large flower garden is comprised in the scheme.

OPEN SPACES AND RECREATION-GROUNDS.

The Eastbourne Town Council have applied to the Local Government Board for a loan of 22,300*l.* to enable them to buy and lay out public parks and pleasure-grounds; the loan includes 20,000*l.* in respect of the 15 acres of Gildridge Park, now owned by Mr. D. Gilbert, lord of the manor of Eastbourne. The park adjoins the land of the Duke of Devonshire, who recently arranged to present the garden at Motcombe as a free gift to the town.——The Willesden District Council have accepted an offer of 30 acres of grassland for a recreation-ground, at the price of 600*l.* per acre.——In pursuance of the will of the late Mr. John Innes in favour "of the inhabitants of the parishes of Merton and Morden," the grounds of Manor Farm have just been opened to the public, and 2 acres of the land are reserved for the Horticultural College.——Barnes Park, Sunderland, extending over 32 acres, with stream, lake, playgrounds, and bowling-green, and the Grove Hall estate, at Bow, have just been opened to the public.——An appeal is made for contributions to a sum of 10,000*l.* in aid of a scheme for the equipment, with a gymnasium, and additional residential accommodation for fifty young men, rifle-range, running track, tennis courts, etc., of an estate of 3 acres, which the Hackney Y.M.C.A. have secured at Stamford Hill; the two old houses upon the property will be converted for purposes of an institute and hostel.——A perambulation, with marking and railing-in of the boundary stones set up in 1641, has just been made by the Essex Field Club of the ancient Forest of Essex, or Waltham Forest.

Patents.

APPLICATIONS PUBLISHED.*

15,773 of 1908.—Pirojsha Barjori Godrej: Locks.

16,832 of 1908.—Albert Lespagnol: Means for applying pressure to the wires used for sawing stone or the like during the sawing operations.

17,081 of 1908.—Michael Freshfield: Wrenches.

17,334 of 1908.—Walter Noble Twelvetrees: An instrument or appliance to facilitate calculations connected with the designing of reinforced concrete beams, slabs, floors, and the like.

20,202 of 1903.—Emil Prager: Window-holding devices.

20,296 of 1908.—Frederick Randolph Martin and Richard Alfred Fulford: An adjustable jointed hinge for adjusting doors or lids upon that side of same where the hinges are fixed.

20,705 of 1903.—John Thomas Chappell and George Henry Chappell: Construction of walls and the like.

22,888 of 1908.—Richard Bowden Waters: Stay and manhole fastening as applied to tanks and the like.

686 of 1909.—James Hunt Dyett and Frank Alfred Howson: Method of and machine for moulding bricks.

847 of 1909.—Guiseppe Mazzolini: Doors, hatches, or like closing devices.

3,063 of 1909.—M. Schubert & Co.: Combined sliding and swivelling windows.

4,157 of 1909.—Ernest Homan: Fireproof floors, partitions, and the like.

11,982 of 1909.—Samuel Pope Evans and Henry James Warrington: Overflows of lavatory bowls or the like.

12,364 of 1909.—Thomas Augustus Harris: Overflow of lavatory basins, baths, sinks, and the like.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

August 5.—By H. P. STACE (at Banbury).

Middleton Cheney, Northants. — Middleton House and 5 a. 2 r. 34 p., f.	£1,000
Enclosure of arable land, 8 a. 3 r. 15 p., f.	400

August 6.—By GEORGE SYMONDS (at Diss).

Rickinghall, Suffolk.—Freehold and copyhold farm, 56 acres	750
Mellis, Suffolk.—Cow Pasture Farm, 103 a. 2 r. 35 p., f.	1,800

August 7.—By R. L. ASHTON (at Okehampton).

Beaworthy, Devon.—Burden Farm, 116 acres, f.	1,525

August 10.—By R. DONKIN & SON (at Newcastle-upon-Tyne).

Hexham, Northumberland.—Linolds and Bank Head Farms, 345 acres, f.	8,000

August 11.—By ALEXR. MOSSMAN.

Paddington.—35, Brindley-st., u.t. 35 yrs., g.r. 5*l.*, w.r. 41*l.* 12s.	100
40, Praed-st., u.t. 13 yrs., g.r. 6*l.*, w.r. 75*l.* 8s.	175
Hadleigh, Essex.—Castle-rd., three plots of land, f.	146

By FRED VARLEY & SON.

Finsbury Park.—24, Romilly-rd., u.t. 58 yrs., g.r. 6*l.*, e.r. 40*l.*	275

By JAMES ELEY (at Boston).

Butterwick, Lincs.—Enclosures of arable land, 22 a. 2 r. 29 p., f.	1,855

By BIDDELL & BLENCOWE (at Bury St. Edmund's).

Belchamp St. Paul's, Essex.—Lambert's Farm, 38 a. 1 r. 2 p., f. and c.	580
Capper's Farm, 13 a. 1 r. 37 p., f. and c.	200
Cavendish, Suffolk.—The Yews, f.	500
Business premises, residence, and garden, f. and c.	568
High-st., seven cottages, f.	225

August 12.—By STIMSON & SONS.

Norwood.—71, Beulah-hill, f. y.r. 75*l.*	540
Paddington.—5 and 6, Paddington-green, profit rental of 224*l.* for 7½ yrs.	950
South Lambeth.—43 to 51 (odd), Portslade-rd., u.t. 69 yrs., g.r. 25*l.*, w.r. 156*l.*	560
Caledonian-rd.—25A and 26A, Sutterton-st., u.t. 42 yrs., g.r. 12*l.*, w.r. 67*l.* 12s.	250
Clapton.—Winslade-rd., l.g. rents 34*l.*, u.t. 36 yrs., g.r. 4*l.*	420
Stockwell.—Hargwyne-st., l.g. rents 21*l.*, u.t. 55 yrs., g.r. 10s.	350
Shepherd's Bush.—Ellerslie-rd., l.g. rents 24*l.*, u.t. 56 yrs., g.r. 4*l.*	335
Stoke Newington.—Albion-rd., l.g.r. 15*l.*, u.t. 51 yrs., g.r. 4*l.*	180
Battersea.—11 and 13, Savona-st., u.t. 41 yrs., g.r. 4*l.*, w.r. 46*l.* 16s.	210
Camberwell.—153, Warham-st., f., w.r. 31*l.* 4s.	225
138, Farmers-rd., f., e.r. 20*l.* 16s.	145

***Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50, 25, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l*., 50*l*., and 25*l*. are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l*. 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l*., 100*l*., and 50*l*. for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

* NO DATE.—**Cardiff.**—NATIONAL MUSEUM.—Competitive designs are invited for the erection of a new National Museum at Cardiff. Three premiums are offered. See advertisement in this issue for further particulars.

* NO DATE.—**Eltham.**—PARISH HALL.—The Committee invite designs for Parish Hall at Eltham, Kent. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

AUGUST 23. — **Abercynon.** — HALL, ETC.—Chapel hall and schoolrooms at Abercynon, for the Trustees of the Presbyterian Forward Movement. Mr. Arthur Lloyd Thomas, architect and surveyor, Pontypridd.

AUGUST 23.—**Barrow.**—ALTERATIONS.—Alterations required at the Rouse-road Branch of the Barrow Co-operative Society, Ltd. Specifications, etc., may be obtained from Mr. E. M. Young, architect, Duke-street.

AUGUST 23.—**Carrickreagh.**—VILLA RESIDENCE.—For building a villa residence at Carrickreagh, Enniskillen, for Mr. F. Sandford Pakenham, in accordance with plan, etc., to be seen at offices of Messrs. R. E. Buchanan & Co., architects, Castle-street, Londonderry.

AUGUST 23. — **Newtownmountkennedy.** — COTTAGES.—Rathdrum R.D.C. invite tenders for the building of twenty-two cottages at Newtownmountkennedy, Co. Wicklow, in accordance with plans, etc., prepared by Mr. George T. Moore, A.R.C.S.I., M.Inst.C.E.I., Engineer to above Council, 1 and 2, Foster-place, Dublin. Bills of quantities, prepared by Mr. James Mackey, quantity surveyor, 58, Dame-street, can be had from Mr. Moore on application and lodgment of 1*l*. 1s.

AUGUST 23. — **Whitchurch.** — COTTAGES. — Six cottages and additions to eight others, at Whitchurch, for Mr. William Lewis. Plans, etc., can be seen, and quantities obtained, at the office of Mr. Sidney Williams, architect and surveyor, Wharton-street, Cardiff.

AUGUST 23.—**Wigglesworth.**—CHAPEL.—For a new Wesleyan Chapel at Wigglesworth. Plans, etc., may be seen at the Wesleyan School, Settle.

AUGUST 24. — **Cottingham.**—WALL.—Cottingham U.D.C. invite tenders for the erection of a new shed and boundary wall, at Market Green, Cottingham. Drawings, etc., may be seen, and further information obtained, at the Council Office.

AUGUST 24.—**Ennistymon.**—COTTAGES.—The D.C. of the Ennistymon Rural District invite tenders for building single labourers' cottages and fencing plots. Plans, etc., can be obtained from the Clerk to the D.C. A sum of 5s. must be paid for the plan and specification, and a deposit of 1*l*. must be made for tender form.

AUGUST 24.—**Leeds.**—WORKS AT TOWN HALL ETC.—The Property Committee invite tenders for the joiner's, builder's, and plumber's work required at the Town Hall, Municipal Buildings, and Judges' House, Clarendon-road. Specifications and bills of quantities at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

AUGUST 24. — **Manchester.** — WASHBATHS, ETC.—Manchester Corporation invite tenders for the erection of washbaths and washhouses, Armitage-street, Ardwick. Drawings may be seen, and specifications, etc., obtained, at the office of the City Architect, Town Hall, upon payment of 2*l*. 2s. All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

AUGUST 24.—**Warrington.**—HOSPITAL WARD.—The Health Committee of the Council of the County Borough of Warrington invite tenders for the erection of an administrative ward at the Sankey Hospital. Drawings, etc., may be seen, and forms of tender, etc., obtained, at the office of the Borough Surveyor, Town Hall. A deposit of 1*l*. 1s. will be required for quantities. Cheques to be made payable to the Borough Treasurer, Warrington.

AUGUST 25.—**Barry Dock.**—DRILL HALL RENOVATIONS.—Tenders are required by the Glamorgan Teritorial Force Association for alterations and extensive renovations to the Royal Garrison Artillery Drill Hall premises at Barry Dock. Copies of the schedules may be obtained on application to the architect, Mr. W. H. Dashwood Caple, 2, Church-street, Cardiff, on deposit of 10s.

AUGUST 25.—**Bovey Tracey.**—FARMHOUSE, ETC.—For a farmhouse at Elsford, Bovey Tracey, for Messrs. Daniel Wrayford & F. Amery, and for additions to Riley Farmhouse, Hennock, for Mr. James Bawdon. Plans, etc., can be seen at the offices of Mr. Saml. Segar, F.I.A.S., architect, 24 and 26, Union-street, Newton Abbot.

AUGUST 25.—**Hirwain.**—VILLAS AND COTTAGES.—Work required in completing four pairs of semi-detached villas and ten cottages at Hirwain, Glam., for the Tudor Building Club, Hirwain. Plans, etc., may be seen either at office of Mr. Thomas Roderick, architect, or with Mr. J. B. Young, Estate Offices, Hirwain.

AUGUST 25.—**Sandwich.**—REPAIRS.—For repairs to be carried out at the Sandwich Council School and teachers' dwelling-house, for the Kent Education Committee. Specifications can be seen, and information obtained, at the offices of the Correspondent, Mr. F. S. Cloke, Salisbury House, Strand-street, Sandwich.

* AUGUST 27. — **Aylesbury.** — STABLES, STORES, SHEDS, ETC.—The Aylesbury U.D.C. invite tenders for new stables, stores, sheds, etc., off Cambridge-street. See advertisement in this issue for further particulars.

AUGUST 27.—**Caerphilly.**—PREMISES.—Rebuilding premises known as the Armoury, Castle-street, Caerphilly. Plans, etc., can be seen, and quantities obtained, at the architect's offices, Wharton-street, Cardiff, and Underhill-chambers, Caerphilly. Mr. Sidney Williams, M.S.A., architect and surveyor.

AUGUST 27. **Cheltenham.**—ALTERATIONS, ETC., TO PREMISES.—The Committee of the Gloucester Co-operative and Industrial Society, Ltd., invite tenders for alterations and additions at No. 91, High-street, Cheltenham. The drawings, etc., may be inspected at the office of the society's architect, Mr. Thomas Malvern, 21, Winchcombe-street, Cheltenham; also at the registered office of the society, Brunswick-road, Gloucester, during office hours.

AUGUST 27.—**Great Torrington.**—POLICE-STATION WORK. — The Standing Joint Committee of the County of Devon invite tenders for alterations at Great Torrington Police-station and the erection of a superintendent's house. The plans, etc., can be seen at the office of the County Surveyor, Mr. E. H. Harbottle, Queen-street, Exeter. Bills of quantities can be obtained from Mr. H. Michelmore, Clerk to the Committee, Castle of Exeter, on payment of 3*l*.

AUGUST 27.—**Llanedy.**—RENOVATION.—Tenders are invited for the renovation of Sardis Baptist Chapel, Llanedy. Plans, etc., may be inspected at Sardis House (adjoining Chapel).

AUGUST 27.—**Maryport.**—ALTERATION.—For works required in alteration to Central Stores, Maryport, for the Maryport Industrial Co-operative Society. Plans, etc., can be seen, and bills of quantities obtained, on application to Messrs. W. G. Scott & Co., architects and surveyors, 2, Park-lane, Workington.

* AUGUST 27. — **Winton.** — SCHOOLS.—The Bournemouth Education Committee invite tenders for new elementary schools in Sherborne-road, Winton. See advertisement in this issue for further particulars.

AUGUST 28. — **Batley, Wilton Park.** — GREENHOUSES.—Tenders invited for reconstructing and repairing greenhouses. For specification, etc., apply to Mr. C. J. Kirby, Borough Surveyor.

AUGUST 28. — **Holyhead.** — ADDITIONS, ETC., TO CHAPEL.—Alterations and additions to the Congregational Chapel, London-road, Holyhead. Plans, etc., may be seen at any time at No. 9, Lligwy-street, or at office of Mr. Jos. Owen, F.R.I.B.A., architect and surveyor, Exchange-chambers, Holyhead.

AUGUST 28.—**Randwick.**—ALTERATIONS ETC.—For alterations and additions to Randwick Church Schools. Drawings, etc., may be seen, and form of tender obtained, on application to Mr. G. P. Milnes, A.M.Inst.C.E., architect, 6, Rowcroft, Stroud.

AUGUST 30. — **Belfast.** — MANSE.—Erection of a manse at Alliance-avenue, Oldpark, in connexion with the Oldpark Presbyterian Church. Plans, etc., may be seen at office of Messrs. Young & Mackenzie, Scottish Provident-buildings, Belfast.

AUGUST 30. **Belfast.** OFFICES. The Directors of the Clyde Shipping Company, Ltd., invite tenders for the erection of new offices, Waring-street. Plans, etc., may be seen at the office of Messrs. Watt, Tulloch, & Fitzsimons, architects, 77a, Victoria-street, Belfast, and copies of the bills of quantities obtained from Messrs. W. H. Stephens & Son, Donegall-square North.

AUGUST 30.—**Queenstown.**—CONVENT SCHOOLS.—Erection of Queenstown Convent of Mercy new National Schools. The plans, etc., can be seen at the offices of the architect, Mr. Samuel F. Hynes, F.R.I.B.A., 5, South-mall, Cork. Forms of tender and bills of quantities will be supplied on deposit of 1*l*.

AUGUST 30.—**Taunton.**—REBUILDING WORKS.—Rebuilding of the King's Arms, North Town, Taunton, for Messrs. Starkey, Knight, & Co., Ltd. Plans, etc., may be seen at the office of the architect, Mr. George C. Strawbridge, 25, Alma-street, Taunton.

AUGUST 30.—**Worsley.**—OFFICES AND HALL.—The Worsley U.D.C. invite tenders for the labour and materials required in the erection of Public Offices and a Public Hall. Drawings may be seen, and bills of quantities obtained, at the office of the architect, Mr. J. T. Proffitt, 9, Longley-road, Walkden, on deposit of 2*l*. 2s.

AUGUST 31.—**Highampton.**—SCHOOL, ETC.—Devon County Education Committee invite tenders for a new school and offices at Highampton. The drawings, etc., may be seen (in duplicate) at the Rectory, Highampton, and at the architect's office, 1, Richmond-road, Exeter.

* AUGUST 31.—**Kingston-on-Thames.**—ADDITIONS TO LAUNDRY.—The Kingston Guardians invite tenders for additions to the Laundry drying-room. See advertisement in this issue for further particulars.

* SEPTEMBER 1.—**Homerton.**—ISOLATION ROOMS.—The Metropolitan Asylums Board invite tenders for construction of isolation rooms at the Eastern Fever Hospital. See advertisement in this issue for further particulars.

SEPTEMBER 1. — **Manchester.** — LAVATORY.—Manchester Corporation Sanitary Committee invite tenders for the construction of an underground lavatory for males at the Poultry Market, Shudehill, Manchester. Drawings may be seen, and specification, etc., obtained, at the office of the City Surveyor, Town Hall, Manchester, on payment to the City Treasurer of 1*l*. 1s. All cheques or postal orders are to be made payable to the order of the Corporation of Manchester.

SEPTEMBER 1. — **Penarth.** — CARETAKER'S HOUSE.—Penarth U.D.C. invite tenders for the erection of a caretaker's house in connexion with the Public Library, Penarth. Plans, etc., may be seen, and bills of quantities obtained (on payment of 1*l*. 1s.), on application to the architect, Mr. H. Snell, 15, Hickman-road, Penarth.

* SEPTEMBER 1.—**Plumstead.**—OPEN-AIR WARDS.—The Guardians of the Woodwich Union invite tenders for open-air wards at the Infirmary, Plumstead. See advertisement in this issue for further particulars.

SEPTEMBER 1. — **Rawtenstall.** — PUBLIC CONVENIENCES.—The Corporation of Rawtenstall invite tenders for the whole of the works and materials comprised in the construction and erection of public conveniences at Queen's-square, Rawtenstall. Plans may be seen, and forms of tender, etc., may be obtained, on application to Mr. James Johnson, C.E., Borough Surveyor, Municipal Offices, Rawtenstall, on payment of 1*l*. 1s.

SEPTEMBER 1.—**Rawtenstall.**—WATERFOOT MARKET HALL.—The Corporation of Rawtenstall invite tenders for the whole of the works and materials comprised in the construction and erection of a new Market Hall at Waterfoot. Plans may be seen, and forms of tender, etc., may be obtained, on application to Mr. James Johnson, C.E., Borough Surveyor, Municipal Offices, Rawtenstall, on payment of 2*l*. 2s.

SEPTEMBER 1.—**Winchester.**—CENTRAL HALL.—Erection of the Central Hall and other works, Peter Symonds' School, Winchester. The plans, etc., can be seen at the offices of the architects, Messrs. Chancellor & Hill, 12, Jewry-street, Winchester, from whom bills of quantities can be obtained.

* SEPTEMBER 2.—**Mansfield.**—COUNTY COURT ADDITIONS.—The Commissioners of H.M. Works and Public Buildings invite tenders for alterations and additions to Mansfield County Court. See advertisement in this issue for further particulars.

SEPTEMBER 3. — **Pembroke.** — ALTERATIONS.—For alterations and repairs at the Town Hall, Pembroke. Specifications, etc., can be seen at the Town Clerk's Office, Pembroke.

* SEPTEMBER 6.—**Royston.**—SCHOOL.—The Hertfordshire Education Committee invite tenders for erection of a school at Royston. See advertisement in this issue for further particulars.

SEPTEMBER 8.—**Burnley.**—NURSES' HOME, ETC.—For works in connexion with erection of a nurses' home and alterations of the Infirmary, Rakehead, Burnley, for the Guardians. Specifications, etc., may be obtained from the architects, Messrs. G. & S. Keighley, Nicholas-street, Burnley.

SEPTEMBER 8.—**London.**—REPAIRS AND PAINTING WORK at the Board's Offices, 45, Upper North-street, Poplar, E. The Guardians invite tenders for the proposed works. Specification prepared by their architects, Messrs. J. & W. Clarkson, of 136, High-street, Poplar, E. A copy of the specification, etc.,

may be obtained upon payment to the architects of a deposit of 5*l.* 5*s.*

SEPTEMBER 11.—**Picklenash, Newent.**—HANDICRAFT, ETC., ROOF.—Gloucestershire Education Committee invite tenders for the erection of a handicraft and cookery room at Picklenash Council School, Newent. Particulars of the work may be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester, upon depositing the sum of 2*l.* 2*s.*

SEPTEMBER 14. — **Hartlepool.** — SCHOOL WORKS.—The C.C. of Durham invite tenders for extensions to the Hartlepool Henry Smith School in accordance with plans prepared by Mr. James Garry, architect, West Hartlepool, at whose offices the plans and specification may be seen. Bills of quantities may be obtained from Mr. J. A. L. Robson, Secretary for Higher Education, Shire Hall, Durham.

NO DATE.—**Alphington.**—COTTAGE RESIDENCE.—Erection of six cottages, residence, and business premises at Alphington, near Exeter. Names to Mr. J. Archibald Lucas, F.S.I., A.R.I.B.A., Guildhall-chambers, High-street, Exeter.

NO DATE.—**Chesterfield.**—ADDITIONS.—Extensive additions to Messrs. Eyre & Sons' business premises, Holywell-street, Chesterfield. Plans, etc., at the office of Mr. W. Cecil Jackson, M.S.A., architect and surveyor, 29, Knifesmith-gate, Chesterfield.

NO DATE.—**Ketton.**—LYCH GATE. The P.C. invite tenders for the erection of a new oak lych gate to the Ketton Churchyard, and also for the rebuilding of the churchyard wall. Quantities may be obtained from the architect, Mr. H. F. Traylen, 16, Broad-street, Stamford, upon the receipt of 1*l.* 1*s.*

NO DATE.—**Leeds.**—HOUSES.—Erection of two houses in Stoneyrock-road, Leeds. Names to Mr. John E. Stocks, architect and surveyor, Greek street-chambers, Park-row, Leeds.

NO DATE.—**Llanelly.**—REROOFING.—Reroofing and renovating portions of the Parish Church of Llanelly, Breconshire. Builders desirous of tendering to apply to the architect, Mr. J. Vaughan Richards, Estate Office, Cricklowell.

NO DATE.—**Llanfairfechan.**—CHAPEL, ETC.—Erection of a new chapel and schoolrooms at Llanfairfechan, for Horeb M.C. Names to Mr. Ll. Samuel, Wmilan, Llanfairfechan.

NO DATE.—**Sneinton.**—RE-ERECTING, ETC.—For the removal, building of brick foundations, and re-erection of St. Christopher's temporary iron Church and Schools, at Sneinton. Particulars, etc., from Mr. F. E. Littler, architect, Lowndham, Notts.

NO DATE.—**South Elmsall.**—CHURCH.—Erection of a brick church, to hold 500, at South Elmsall. Appointments to view the site and plans, and to obtain quantities, must be made with the Rev. Arthur Gould, South Elmsall, Doncaster.

NO DATE.—**Trehafod.**—CHAPEL RENOVATIONS.—Renovations, etc., to the Siloam C.M. Chapel, Trehafod. Specifications, etc., can be seen, and all particulars obtained, from the architect, Mr. Philip J. Jones, Brynawel, Cilfynydd, Pontypridd.

NO DATE.—**Wakefield.**—STEEL FRAMED BUILDING.—The Wakefield and District Light Railway Company invite tenders for the supply and erection of steel framed building, 60 ft. by 30 ft., 20 ft. high. Copy of plans and particulars will be sent on application to Mr. H. England, General Manager, Bede Isle, Wakefield.

NO DATE.—**West Winch.**—HOUSE.—Tenders are invited for the erection of a house at West Winch. For full particulars apply Messrs. Wm. Jarvis & Son, Paradise parade, Lynn.

ENGINEERING, IRON, AND STEEL.

AUGUST 23. — **Godmersham.** — BRIDGE WORKS.—East Ashford R.D.C. invite tenders for the pointing and repair of Ford Bridge, Godmersham. Specification can be seen at the office of Mr. T. W. Pullen, Surveyor, Kennington.

AUGUST 25. — **South Dublin.** — WELL-SINKING.—South Dublin R.D.C. invite tenders for sinking wells and providing pumps and appurtenances. The specifications may be inspected at the Council's Office, where schedules and forms of tender may be obtained.

AUGUST 27. — **Solihull.** — BOILERS, ETC. — The Guardians invite tenders for Lancashire boilers, mains and fittings, etc., at their Workhouse at Solihull. Firms tendering must take their own particulars of plans and specification at the office of the architects, Messrs. W. H. Ward, Paradise-street, Birmingham, between the hours of 10 a.m. and 5 p.m.

AUGUST 30. — **Uxbridge.** — PLANT. — Uxbridge U.D.C. invite tenders for the overhauling and putting into proper repair of the duplicate pumping plant at their Waterworks, Waterloo-road, Uxbridge. Mr. W. T. Harvey, Clerk to the Council, Council Offices, 126, High-street, Uxbridge.

AUGUST 31.—**Ryde.**—LINING, ETC., A WELL.—The Corporation of the Borough of Ryde invite tenders for making and lining a well, driving adits, and doing other work connected therewith at Knighton, Isle of Wight, in accordance with the drawings, etc., prepared by their consulting engineer, Mr. William Matthews, 39, Victoria-street, Westminster, S.W. The drawings may be inspected, and specifications, etc., obtained, upon application at the offices either of the Consulting Engineer or of the Borough Engineer, Town Hall, Ryde, upon payment of a deposit of 3*l.* 3*s.*

SEPTEMBER 1. — **Marlow.** — BRIDGE.—The County Councils of Berks and Bucks invite tenders for stripping and renewing the wooden decking to carriageway of Marlow Suspension Bridge (about 7,500 sq. ft.). Copies of specification, etc., can be obtained from Mr. R. J. Thomas, M.Inst.C.E., County Surveyor, Aylesbury, upon payment of a deposit of 2*l.* 2*s.*

SEPTEMBER 13.—**Croydon.**—BOILER.—The Guardians of the Poor of the Croydon Union invite tenders for the supply and erection of one Cornish boiler at the Croydon Union Infirmary, Mayday-road, Thornton Heath, Surrey; also the existing boiler to be removed. Copies of specification with forms of tender may be obtained on application to Mr. J. F. L. Crosland, Vulcan Boiler and General Insurance Company, Ltd., 67, King-street, Manchester.

SEPTEMBER 15.—**London.**—DREDGE.—The tenders are invited by the High Commissioner for New Zealand, on behalf of the Lyttelton Harbour Board, for the construction and delivery, in Port Lyttelton, New Zealand, of a 300-ton "Priestman" hopper dredge. Specification, sketch, plan, form of agreement, etc., are on view, and copies can be obtained by intending tenderers on application at the office of the High Commissioner, 13, Victoria-street, Westminster, London, S.W.

SEPTEMBER 15.—**Wallasey.**—PLANT.—The Wallasey U.D.C. invite tenders for tar extractor, rotary washer, rotary exhauster and engine, and Lancashire boiler, at the Gasworks, Poulton-cum-Seacombe. Plans may be inspected, and copies of specifications obtained, on application to the Engineer, Mr. J. H. Crowther, at his office, Dock-road, Seacombe.

SEPTEMBER 22.—**Leith Harbour and Docks.**—CONSTRUCTION OF GRAVING DOCK.—The Commissioners for the Harbour and Docks of Leith invite tenders for the construction of a graving dock and relative works at the north-west corner of the Imperial Dock, in conformity with drawings, etc., which may be seen at the office of the Engineer, Mr. Peter Whyte, M.Inst.C.E., Superintendent of the Harbour and Docks, Tower-place, Leith. Forms of tender, etc., may be obtained from the Engineer on payment of 3*l.* 3*s.*

MISCELLANEOUS.

AUGUST 23. — **Kingsclere.**—ROLLERS.—Kingsclere R.D.C. invite tenders for the hire of two 10-ton steam road rollers. Form of tender and particulars may be obtained at office of Mr. W. T. Jells, Surveyor, Kingsclere, Newbury.

AUGUST 24.—**Manchester.**—LABOUR.—Manchester Corporation Tramways Committee invite tenders for the supply of team labour required by the department during the period ending September 30, 1910. Forms of tender may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

AUGUST 24. — **Rhondda.** — FENCING.—Rhondda U.D.C. invite tenders for:—(1) About 340 yds. of strong, unclimbable, wrought-iron fencing, 6 ft. high, with gates, fixed complete at Gelli; (2) about 710 yds. ditto at Ferndale. Particulars may be obtained on application to Mr. W. J. Jones, Engineer and Surveyor, at the Council Offices, Pentre, Rhondda.

AUGUST 24. — **Rhondda.** — SCAVENGING.—Rhondda U.D.C. invite tenders for the scavenging of their District, in sections, for the term of one year. Specification, etc., may be obtained at the Surveyor's Department, Public Offices, Pentre, Rhondda.

AUGUST 24. — **South Molton.** — STEAM ROLLERS.—The South Molton R.D.C. invite tenders, at per roller, for the hire of not exceeding four steam rollers. Mr. Fred Day, Clerk to the Council, South Molton.

AUGUST 25.—**Felling.**—FENCING. The U.D.C. of Felling invite tenders for the erection of a boundary fence and gates and the laying on of water to the centre of land for allotments at Felling. Plans, etc., may be seen at the office of the Surveyor, Council Buildings, Felling.

AUGUST 30. — **Tunstall.**—SCAVENGING.—Tunstall U.D.C. invite contracts for the removal of nightsoil and ashes and for team work. Full details and forms of tender may be had upon application to the Surveyor, the Scavenging Superintendent, or Mr. Arthur P. Llewellyn, Clerk to the Council, Clerk's Offices, Tunstall.

AUGUST 31. **Dublin.**—ELECTRIC WATER SPRINKLING CAR.—The Cleansing Committee of the Corporation of Dublin invite tenders for the supply of one electric water sprinkling car, fitted with electrically-driven air compressor or Roturbo pump. Specification, etc., may be inspected at office of Mr. Fred. J. Allan, Secretary, Cleansing Committee, 3, Cork-hill, and may be obtained on payment of 1*l.* 1*s.*

AUGUST 31. — **Margate.** -TURF. -Tenders are invited for the supply and delivery of 8,000 sq. yds. of good turf for the Park and greens in the Borough, and of an additional 2,000 yds. at the option of the Council. Mr. Edward Brooke, Town Clerk, Town Clerk's Office, 13, Grosvenor-place, Margate.

AUGUST 31.—**Oldham.**—TIMBER.—Oldham Education Committee invite tenders for the supply of timber for the several manual instruction centres. Forms of tender may be obtained of Mr. J. Rennie, Secretary for Education, Education Offices.

AUGUST 31.—**Ticehurst.**—ROAD ROLLING.—Ticehurst R.D.C. invite tenders for steam rolling. Forms of tender may be obtained from Mr. W. N. Wood, Surveyor, Ticehurst, on a stamped addressed foolscap envelope being forwarded.

SEPTEMBER 1. — **Littlehampton.** — SCARIFYING.—Littlehampton U.D.C. invite tenders for scarifying and steam-rolling of roads about the District. Forms of tender can be obtained on application to the Council's Surveyor, Mr. H. Howard, F.S.I., Town Offices.

SEPTEMBER 1. — **Liversedge.** — WROUGHT-IRON FENCING.—Liversedge U.D.C. invite tenders for the supply and delivery of approximately 160 yds. of wrought-iron fencing and gates, to be erected on Mark-street improvement. Plans, etc., may be seen, and form of tender obtained, at office of Mr. Frank Langley, Engineer and Surveyor, Council Offices, Liversedge.

SEPTEMBER 11.—**Castle Bromwich.**—SCAVENGING.—The R.D.C. of Castle Bromwich invite tenders to cleanse all earth closets, privies, and ashpits in the Parish. Particulars of the work may be obtained, and forms of contract seen, by application to Mr. T. H. Negus, Surveyor to the Council, 32, Arthur-road, Erdington.

SEPTEMBER 13. — **Stansted.** — SCAVENGING.—The Stansted P.C. invite tenders for scavenging a portion of the Parish. For further particulars apply to Mr. E. T. Watts, Surveyor, Thorley, Bishop's Stortford.

NO DATE.—**Halifax.**—PARING AND BURNING.—Tenders wanted for paring and burning 6 or 7 acres of land. Mr. J. Lister, Shibden Hall, Halifax.

PAINTING, etc.

AUGUST 23. — **Bristol.** — PAINTING.—Painting, etc., at the able-bodied women's block, at Eastville Workhouse, in accordance with the specification, which is deposited for inspection. Form can be obtained at office of Mr. J. J. Simpson, Clerk to the Guardians, St. Peter's Hospital.

AUGUST 24. — **Handsworth.** — PAINTING.—The U.D.C. invite tenders for painting outside work at the Council House, Soho-road, Handsworth. All particulars may be obtained on application to Mr. H. Richardson, A.M.Inst.C.E., Surveyor to the Council.

AUGUST 24. — **Heath Charnock.** — PAINTING.—Chorley Joint Hospital Board invite tenders for painting, etc., required at the Isolation Hospital, Heath Charnock. Mr. B. Stanton, Clerk, 14, High-street, Chorley.

AUGUST 24.—**Romford.**—PAINTING.—Romford Joint Hospital Board invite tenders for painting the whole of the outside wood and iron work of all the buildings at the Isolation Hospital, situate at Rush Green, Romford. Specification, etc., may be obtained by forwarding a stamped addressed foolscap envelope to Mr. William Smith, Clerk to the Board, 13, North-street, Romford.

AUGUST 25.—**Morley.**—PAINTING.—For painting of the greenhouses, etc., at the Dartmouth Park. Particulars may be obtained on application at the office of Mr. W. E. Putman, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Morley.

AUGUST 26. — **Dewsbury.** — PAINTING. — The Guardians require tenders for colour-washing and whitewashing the inside and painting the outside of the Cottage Homes, Headds-road, Dewsbury. For specifications, etc., apply to the Master at the Workhouse.

AUGUST 27.—**Salford.**—PAINTING.—Tenders are invited for painting two bridges over the River Irwell. The specification and forms of tender, etc., may be obtained at the Borough Engineer's Office, Town Hall, Salford.

AUGUST 30.—**Blackrock.**—PAINTING.—The U.D.C. of Blackrock invite tenders for the following work:—(1) Painting the railings in front of Town Hall, the windows and doors of Town Hall, Technical School, and Library; (2) painting inside woodwork of motor house; (3) painting No. 2 fire escape. Specifications can be seen at office of Mr. R. Finlay Heron, Town Clerk, Town Hall, Blackrock, Co. Dublin.

✱ SEPTEMBER 1.—**Holborn.**—PAINTING BRIDGE.—The Streets Committee of the Corporation of London invite tenders for painting and regilding the Farringdon-street and Shoe-lane Bridge. See advertisement in this issue for further particulars.

✱ SEPTEMBER 8.—**Poplar.**—REPAIRS AND PAINTING.—The Poplar Guardians invite tenders for repairs and painting at the Board's Offices, 45, Upper North-street, Poplar. See advertisement in this issue for further particulars.

NO DATE. — **Devonport.** — DECORATION.—Interior decoration of St. John the Baptist Church, Devonport. Particulars and specification from Mr. Edgar M. Leest, architect, 14, St. Aubyn-street, Devonport, on deposit of 2*l.* 2*s.*

ROADS, SANITARY, AND WATER WORKS.

AUGUST 23. — **Blackburn.** — ROAD WORKS.—For street works, Railway-grove, Kingston-place, and the back roads behind; also macadamising Gorse-road and Mavis-road, for the Highway Committee. Plans, etc., may be seen, and information obtained, upon application at the office of Mr. William Stubbs, Borough Engineer, Municipal Offices, Blackburn.

AUGUST 24. **Barnoldswick.**—STREET WORKS.—For the excavating, surface-water sewering, levelling, etc., and making good portions of Valley-road, Calf Hall-road, and Peter-street, for the U.D.C. Plans, etc., may be seen, and bills of quantities, etc., obtained from Mr. W. Bennet, M.Inst.M.E., Engineer and Surveyor, Town Hall, Barnoldswick, upon payment of a deposit of 10*s.*

AUGUST 24.—**Gateshead.**—PAVING.—Tenders are invited for paving, etc., streets. Plans, etc., may be seen, and quantities obtained, at the office of Mr. N. P. Pattinson, Borough Surveyor, Town Hall, Gateshead.

AUGUST 25.—**Portgordon Harbour.**—REMOVAL OF SHINGLE. Estimates are invited for the removal of about 1,600 cubic yds. of shingle from the entrance to harbour. Mr. J. H. Munro, Inspector of Works, Temperance Hotel, Portgordon, will point out the shingle which requires to be removed, and where it may be deposited.

AUGUST 25. — **Welwyn.**—SEWER.—Welwyn R.D.C. invite tenders for providing and laying new sewer in the London-road, Welwyn, Herts. Plan, etc., may be seen, and bills of quantities and forms of tender obtained, at the offices of Mr. Henry F. Mence, Surveyor, 11, St. Peter's-street, St. Albans, on payment of 1*l.* 1*s.*

AUGUST 26.—**Doveholes.**—SERVICE TANK.—For a small concrete service tank and other work at Doveholes, near Buxton, for the Chapel-en-le-Frith R.D.C. Plan, etc., may be seen, and quantities, etc., obtained, upon application to the Council's Engineers, Messrs. Swann & Brady, Town Hall, Chapel-en-le-Frith.

AUGUST 26.—**Liskeard.**—SEWER.—Liskeard R.D.C. invite tenders for laying about 100 ft. of 9-in. stoneware pipe sewer at Bodinnick, Lanteglos. Mr. E. Mallett, Pendruffle, Duloe, R.S.O.

AUGUST 26. — **Sancreed.**—EXTENSION OF CHURCHYARD.—Tenders are invited for works in connexion with the extension of the churchyard at Sancreed. Plans, etc., may be seen at the office of Mr. Henry Maddern, architect, 4, Morrab-road, Penzance.

✱ AUGUST 26. — **Snargate.**—MACHINERY, ENGINE-HOUSE, WELLS, AND CULVERTS.—The Commissioners of Sewers for the Level of Walland Marsh and Elderton's Innings invite tenders for the above, to be erected near Woodruff's Sluice, Snargate, Dover. See advertisement in this issue for further particulars.

AUGUST 27.—**Salford.**—ASPHALTING.—Tenders are invited for asphalting the girders of two bridges over the River Irwell. The specification, etc., may be obtained at the Borough Engineer's Office, Town Hall, Salford.

AUGUST 28. — **Leeds.**—EXTENSION OF LAWNSWOOD CEMETERY, ADEL, LEEDS.—Names to Mr. W. S. Braithwaite, architect and surveyor, 6, South-parade, Leeds.

Digitized by Google

AUGUST 28. — **Newbiggen and Thoralby.** — WATER SUPPLY.—Aysgarth R.D.C. invite tenders for the supplying and laying of about 3,000 yds. of cast-iron water pipes, together with valves and other fittings; also the construction of a service reservoir. Plans, etc., may be seen on application to Mr. R. Blades, Sanitary Inspector, Aysgarth. Schedule of quantities may be had on the payment of 2*l.* 2s.

AUGUST 30.—**Bristol.**—SEWER, ETC.—The Sanitary and Improvement Committee of the Corporation invite tenders for the following works:—Reconstruction of brick sewer, Stapleton-road; piling bank of River Avon, Netham. The drawings, etc., may be seen at 63, Queen-square, and copies of the bills of quantities obtained, on deposit of 1*l.* 1s. for each set. Mr. Thos. Henry Yabbicom, M.Inst.C.E., City Engineer and Surveyor, offices, 63, Queen-square, Bristol.

AUGUST 30. — **Middleton.**—SEWERING.—The Corporation of Middleton invite tenders for the sewering to be done in Hollin-lane. Plans may be seen, and specifications, etc., obtained from Mr. Welburn, Borough Surveyor, Middleton.

AUGUST 30.—**Penge.**—PRIVATE STREET WORKS.—The U.D.C. of Penge invite tenders for private street works in Clevedon and Royston roads. Plans, etc., may be seen, and copies of the bills of quantities, etc., obtained, on application to the Council's Surveyor at the Town Hall, Anerley-road, S.E., on payment of a deposit of 2*l.*

AUGUST 30. — **Pontypridd.** — STREET WORKS.—Pontypridd U.D.C. invite tenders for carrying out of private street works:—Contract No. 1.—Fountain-street, Trehafod. Contract No. 2.—Lane at the rear of Barry-terrace, Pwllgwaun. Contract No. 3.—Seaton-street, Pwllgwaun. Contract No. 4.—Lane at the rear of Berw-road. Plans, etc., may be seen, and forms of tender obtained, on application at the office of Mr. W. E. Lowe, Engineer and Surveyor, upon receipt by Mr. J. Colenso Jones, Clerk to the Council, Municipal Buildings, Pontypridd, of a deposit of 1*l.* 1s. in respect of each contract.

AUGUST 31. — **Waterloo-with-Seaforth.**—ROAD WORKS.—The U.D.C. of Waterloo-with-Seaforth invite tenders for works of sewering, paving, flagging, kerbing, channelling, etc. Plans, etc., may be seen, and bills of quantities obtained, on application to Mr. F. Spencer Yates, A.M.Inst.C.E., the Surveyor to the Council, at the Town Hall, Waterloo. The sum of 10s. 6d. must be deposited for quantities.

SEPTEMBER 1. — **Hove.** — MAKING-UP.—Making-up roadway and forming paths in Portland-road (between School-road and Grange-road). Further particulars may be obtained, and plan, etc., seen, at the office of the Borough Surveyor, Mr. H. H. Scott.

SEPTEMBER 1.—**Portsmouth.**—CISTERNS, ETC.—Tenders are invited for supplying and fixing cisterns to water-closets, with necessary lead piping and such other work and materials. The schedule and form of tender may be obtained at the Medical Officer of Health's Office at the Town Hall.

SEPTEMBER 2. — **Upwey (Portland).**—BOREHOLE.—For sinking a 6-in. borehole in the Portesham Valley, Upwey, for Portland U.D.C. Plans may be seen, and copies of the specification, etc., obtained, at the office of Mr. R. Stevenson Henshaw, Engineer and Surveyor, Council Offices, New-road, Portland.

SEPTEMBER 7. — **Castle Ward.** — MAKING-UP.—The R.D.C. invite tenders for the making-up of three private streets at Dinnington Colliery. Plans, etc., may be seen, and copies of the quantities and forms of tender, etc., obtained, on application to Mr. James Jameson, Sanitary Surveyor, Fernlea, Ponteland. A deposit of 1*l.* 1s. will be required for each set of quantities taken out.

SEPTEMBER 7.—**Leith.**—STREET WORKS.—The Provost, Magistrates, and Councillors invite tenders for the following works, viz.:—(1) Laying about 2,900 super yds. of 4-in. granite or whinstone cubes at Dalmeny street, Sloan-street, and James Place-lane; (2) laying about 2,150 super. yds. of cement concrete carriageway in Craighall-terrace, Claremont-gardens, and Seafield-street; (3) laying about 990 super. yds. of cement concrete pavement in Craighall terrace, Seafield-street, James Place-lane, Sloan-street, and Dalmeny-street. Plans, etc., may be seen, and information obtained, at the Burgh Surveyor's Office, Charlotte-street, Leith.

✱ SEPTEMBER 8. — **London.** — URINALS. — The Commissioners of H.M. Works, etc., invite tenders for supply of urinals for a period of three years. See advertisement in this issue for further particulars.

✱ SEPTEMBER 13. — **Wandsworth.** — MAKING-UP AND PAVING.—The Wandsworth B.C. invite tenders for making-up and paving of Pulborough-road, Southfield. See advertisement in this issue for further particulars.

SEPTEMBER 13. — **Watford.**—MAKING-UP.—Watford U.D.C. invite tenders for making-up roads. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. D. Waterhouse, Surveyor.

SEPTEMBER 29.—**Wood Green.**—WORKS OF PRIVATE STREET IMPROVEMENT.—The U.D.C. invite tenders for works of private street improvement in Brabant-road, Ellenborough-road (Sec. II.), Windermere-road (Sec. II.), and Sandford-avenue. The plans, etc., may be seen, and bills of quantities obtained, on application to the Surveyor at the Town Hall, Wood Green, upon payment to Mr. Wm. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1*l.* 1s.

✱ NO DATE. — **Mile End.** — TAR PAVING. — The Guardians of Mile End Old Town invite tenders for tar paving tennis court at the Bancroft-road Infirmary. See advertisement in this issue for further particulars.

STONES, MATERIAL, AND STORES.

AUGUST 23. — **Rochford.**—STONE, ETC.—Rochford R.D.C. invite tenders for the supply of secondhand York or other stone, or artificial or concrete slabs. Mr. Frederic Gregson, Clerk, Southend-on-Sea.

AUGUST 25. — **London.** — PAINTS, ETC.—The East Indian Railway Company invite tenders for the supply and delivery of (1) red and white lead, (2) paints, etc., as per specifications to be seen at the offices of Mr. C. W. Young, Secretary, Nicholas-lane, London, E.C. For each specification a fee of 1*l.* 1s. is charged, which cannot under any circumstances be returned.

AUGUST 26. — **Woking.** — ROAD MATERIAL.—The U.D.C. of Woking invite tenders for the supply of about 2,000 tons of granite. Forms of tender may be obtained from Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

AUGUST 27. — **Durham.** — MATERIALS. — Durham County Lunatic Asylum Visiting Committee invite tenders for supplying the Asylum with articles. Forms and conditions of tender may be had on application at the office of the Steward, at the Asylum.

AUGUST 30.—**Molesey.**—GRANITE.—The U.D.C. of East and West Molesey invite tenders for the supply and delivery of British granite. Specification, etc., may be obtained upon application to the Surveyor, D.C. Offices, East Molesey.

AUGUST 31. — **Wakefield.**—MATERIALS.—Wakefield and District Light Railway Company invite tenders for the supply of 1,000 tons of 6-in. by 3-in. first quality dressed non-slippery granite setts; 350 tons best quality dressed 5-in. by 3-in. whinstone or hard granite setts.

AUGUST 31. — **Walton-upon-Thames.** — ROAD MATERIAL.—The U.D.C. invite tenders for the supply and delivery of road material. Form of tender and conditions may be obtained on application to Mr. R. Wilds, Surveyor, Council Offices, Walton-on-Thames.

SEPTEMBER 1. — **Clacton.**—FLINTS.—Clacton U.D.C. invite tenders for the supply of 1,200 yds. of flints. Specification, etc., may be obtained upon application to Mr. A. R. Robinson, Surveyor to the Council, Town Hall, Clacton-on-Sea.

SEPTEMBER 1. — **Littlehampton.**—FLINTS.—Littlehampton U.D.C. invite tenders for the supply and delivery, free, of 500 cubic yds. of clean hand-picked land flints. Forms of tender can be obtained on application to the Council's Surveyor, Mr. H. Howard, F.S.I., Town Offices.

SEPTEMBER 2. — **West Ham.** — SUPPLIES. — The Guardians invite tenders for the supply of articles to their Workhouse and Infirmary. Printed form may be obtained on application, or will be forwarded on receipt of a stamped addressed brief-sized envelope. Mr. Thomas Smith, Clerk, Clerk's Office, Board-room, Union-road, Leytonstone, N.E.

SEPTEMBER 6. — **Seaford.** — BROKEN GRANITE.—The Seaford U.D.C. invite tenders for the supply of 700 tons of small machine broken Guernsey granite 1-in. to 1½-in. gauge. Form of tender may be obtained from the Surveyor.

SEPTEMBER 7. — **Leatherhead.** — MATERIALS, ETC.—The U.D.C. of Leatherhead invite tenders for the supply of materials and labour. Specification, etc., can be obtained at the office of Mr. J. E. Smales, Surveyor, Council Offices, Leatherhead.

SEPTEMBER 8. — **Weymouth and Melcombe Regis.**—MATERIALS.—The T.C. of the Borough of Weymouth and Melcombe Regis invite tenders for materials. Particulars, etc., can be obtained on application to the Town Clerk, Municipal Offices, Weymouth. Each application must be accompanied with a fee of 1*l.* 1s.

SEPTEMBER 13. — **Watford.**—MATERIALS.—Watford U.D.C. invite tenders, together with samples, for the delivery at Watford Station of about 2,115 super. yds. of 2-in. granite concrete paving slabs. Forms of tender may be obtained from Mr. D. Waterhouse, Engineer, Council Offices, Watford.

SEPTEMBER 16.—**Bradford.**—STORES.—The Gas Committee of the Bradford Corporation invite tenders for the supply of stores. Form of tender may be had on application to Mr. Chas. Wood, Gas Engineer, Town Hall, and samples may be seen at Mill-street Gasworks.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
•CLERK OF THE WORKS	Banbury Boro' Council.....	Not stated	Aug. 27

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
•DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sims	Aug. 25
•PREMS., MCHNRY., AND STK. OF BLDRS'. MERCHANTS, PLYMOUTH.—On the Premises	Alfred Parkhouse.....	Aug. 26

PRICES CURRENT OF MATERIALS.

•,• **Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.**

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	6	6	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	,, delivered
Flettons.....	1	4	6	" at railway depôt.
Best Fareham Red	3	12	0	" " "
Best Red Pressed Ruabon Facing..	5	0	0	" " "
Best Blue Pressed Staffordshire ...	3	15	0	" " "
Do. Bullnose	4	0	0	" " "
Best Stourbridge Fire Bricks	3	14	0	" " "
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers.....	10	7	6	" " "

BRICKS, &c. (*continued*).

	£	s.	d.	
Headers	9	17	6	per 1000, deld. at rly. depôt.
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers...	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End.....	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Best Dipped Salt Glazed Stretchers	10	7	6	" " "
Headers.....	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers...	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End.....	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

BRICKS, &c. (*continued*).

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement.....	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt.....	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt.....	1	8½	" "
PORTLAND STONE (20 ft. average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "
Ancaster in blocks	1	10	per ft. cube deld. rly dep.
Beer "	1	6	" "
Greenshill "	1	10	" "

Digitized by Google

STONE (*continued*).

	s.	d.	
Darley Dale in blocks ...	2	4	per ft. cube, deld. rly. depôt.
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks.	2	10	per ft. cube, deld. rly dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "

HARD YORK—

Scappled random blocks.	3	0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20 × 10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20 × 12 " "	13	17	6	" "
20 × 10 first quality "	13	0	0	" "
20 × 12 " "	13	15	0	" "
16 × 8 " "	7	5	0	" "
22 × 10 best blue Portmadoc	12	12	6	" "
16 × 8 " "	6	12	6	" "
20 × 10 best Eureka unfading green ...	15	17	6	" "
20 × 12 " "	18	7	6	" "
18 × 10 " "	13	5	0	" "
16 × 8 " "	10	5	0	" "
20 × 10 permanent green	11	12	6	" "
18 × 10 " "	9	12	6	" "
16 × 8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles...	42	0	per 1000, at rly. depôt.
Hip and Valley tiles ...	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles ...	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards) ...	57	6	per 1000 "
Do. Ornamental do.....	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles.....	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles.....	48	0	per 1000 "
Best Ornamental tiles.....	50	0	" "
Hip tiles.....	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed.....	47	6	" "
Do. Ornamental do.....	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced ...	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.....	13	10	0	...	15	0	0
Deals: best 3 by 9	13	0	0	...	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	...	12	0	0
Battens: best 2½ by 6 and 3 by 6 ...	0	10	0	less than 7 in. and 8 in.			
Deals: seconds	1	0	0	less than best.			
Battens: seconds	0	10	0	"			
2 in. by 4 in. and 2 in. by 6 in. ...	9	0	0	...	10	0	0
2 in. by 4½ in. and 2 in. by 5 in. ...	8	10	0	...	9	10	0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0	10	0	more than battens.			
¾ in.	1	0	0	"			
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4	10	0	...	5	0	0
Seconds	4	0	0	...	4	10	0
Small timber (8 in. to 10 in.).....	3	12	6	...	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	...	3	10	0
Swedish balks	2	10	0	...	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	...	4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	...	25	0	0
3 in. by 9 in.....	22	0	0	...	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	...	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	...	20	0	0
3 in. by 9 in.....	17	10	0	...	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	...	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	...	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.....	21	0	0	...	22	10	0
Do. 3 in. by 9 in.	18	0	0	...	19	10	0
Battens	13	10	0	...	15	0	0

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £	s.	d.		£	s.	d.
Petersburg: Second yellow deals, 3 in. by 11 in.	16	0	0	...	17	0	0
Do. 3 in. by 9 in.	14	10	0	...	16	0	0
Battens	11	0	0	...	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	...	14	0	0
Do. 3 in. by 9 in.	12	10	0	...	14	0	0
Battens	10	0	0	...	11	0	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	14	10	0	...	15	10	0
" " 3 in. by 9 in.	13	10	0	...	14	0	0
Battens	11	0	0	...	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	...	14	10	0
" " 3 in. by 9 in.	12	10	0	...	13	10	0
Battens	10	0	0	...	11	0	0
Pitch-pine: deals	18	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.			
Oddments	32	0	0	"			
Seconds, regular sizes	33	0	0	"			
Oddments	28	0	0	"			
Kauri Pine—Planks, per ft. cube...	0	3	6	...	0	5	0
Danzig and Stettin Oak logs—							
Large, per ft. cube	0	3	0	...	0	3	9
Small " "	0	2	6	...	0	2	6
Wainscot Oak Logs, per ft. cube...	0	5	6	...	0	6	0
Dry Wainscot Oak, per ft. sup. as inch.....	0	0	8½	...	0	0	9½
¾ in. do. do	0	0	7	...	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch ...	0	0	9	...	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	...	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak per load	17	0	0	...	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	...	0	5	0
Prepared Flooring, etc.—	Per square.						
1 in. by 7 in. yellow, planed and shot.....	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1¼ in. by 7 in. yellow, planed and matched.....	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched.....	0	12	6	...	0	15	0
1¼ in. by 7 in. white, planed and matched.....	0	15	0	...	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. " "	0	14	0	...	0	18	0
¾ in. by 7 in. white " "	0	10	0	...	0	11	6
1 in. by 7 in. " "	0	12	9	...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	...	7	10	0
Compound Girders, ordinary sections	9	0	0	...	10	0	0
Steel Compound Stanchions	11	0	0	...	12	0	0
Angles, Tees, and Channels, ordinary sections.....	9	0	0	...	10	0	0
Flitch Plates	9	0	0	...	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns.....	7	10	0	...	8	10	0

METALS.

	Per ton, in London. £	s.	d.		£	s.	d.
IRON—							
Common Bars	8	10	0	...	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	...	9	5	0
Staffordshire "Marked Bars" ...	10	10	0	...	—		
Mild Steel Bars.....	8	15	0	...	9	5	0
Hoop Iron, basis price	9	5	0	...	9	10	0
" " Galvanised.....	17	0	0	...	—		
(*And upwards, according to size and gauge.)							
Sheet Iron, Black—							
Ordinary sizes to 20 g.	9	15	0	...	—		
" " 24 g.	10	15	0	...	—		
" " 26 g.	12	5	0	...	—		
Sheet Iron, Galvanised, flat, ordinary quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	...	—		
Ordinary sizes to 22 g. and 24 g.	15	10	0	...	—		
" " 26 g.	16	10	0	...	—		
Sheet Iron, Galvanised, flat, best quality—							
Ordinary sizes to 20 g.	18	0	0	...	—		
" " 22 g. and 24 g.	18	10	0	...	—		
" " 26 g.	20	0	0	...	—		
Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	...	—		
" " 22 g. and 24 g.	14	15	0	...	—		
" " 26 g.	16	5	0	...	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	...	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	...	—		
" " " 26 g.....	15	0	0	...	—		
Cut Nails, 3 in. to 6 in.....	10	10	0	...	11	0	0
(Under 3 in., usual trade extras.)							

LEAD, &c.

	Per ton, in London. £	s.	d.		
LEAD—Sheet, English, 3lb. and up.	16	0	0	...	—
Pipe in coils	16	10	0	...	—
Soil pipe.....	18	10	0	...	—
Compo pipe	19	10	0	...	—
ZINC—Sheet—					
Vielle Montagne	26	10	0	...	—
Silesian	26	5	0	...	—
COPPER—					
Strong sheet .....per lb.	0	1	0	...	—
Thin " ..... "	0	1	1	...	—
Copper nails ..... "	0	0	10	...	—
Copper wire ..... "	0	0	10	...	—
BRASS—					
Strong Sheet ..... "	0	0	11	...	—
Thin ..... "	0	1	0	...	—
TIN—English Ingots..... "	0	1	5	...	—
SOLDER—Plumbers' ..... "	0	0	7	...	—
Tinmen's ..... "	0	0	6½	...	—
Blowpipe ..... "	0	1	0	...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds.....	2½d.	per ft.	delivered.
" fourths	1½d.	"	"
21 oz. thirds	3d.	"	"
" fourths	2½d.	"	"
26 oz. thirds	4d.	"	"
" fourths	3d.	"	"
32 oz. thirds	4½d.	"	"
" fourths	4d.	"	"
Flute Sheet, 15 oz	3½d.	"	"
" 21 oz.....	4½d.	"	"

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d.	per ft.	delivered.
⅜ "	2¾d.	"	"
½ "	2¼d.	"	"
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d.	"	"
" " tinted ...	5d.	"	"

OILS, &c.		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	2
" " in barrels	"	0	2	3
" " in drums	"	0	2	6
Boiled " in barrels.....	"	0	2	6
" " in drums	"	0	2	9
Turpentine in barrels	"	0	2	11
" in drums	"	0	3	1
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak.....	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak.....	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish.....	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper.....	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain.....	0	9	0
Brunswick Black.....	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish.....	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 a.m. *on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ABERSYCHAN.—For erecting new stables, office, etc., for the Abersychan British and Talywain Industrial Co-operative Society, Ltd. Mr. A. Gordon Babbidge, architect and surveyor, Clarence-chambers, Pontypool:—

R. Meara.....	£475 10	Gregory Bros.....	£398 0
W. Branch	420 10	Powell Bros.,	
A. & J. Richards..	418 0	Pontypool*	385 10

BELVEDERE.—For erecting a porter's lodge at Erith Sanatorium, Little Heath, for the Urban District Council, Erith:—

L. Lown & Co.	£428 18 11	H. E. Chandler	£367 0 0
Pasterfield & English	398 0 0	Hyde & Co....	359 0 0
W. Shurmur & Sons, Ltd. ..	396 0 0	G. H. Gunning & Sons	358 0 0
J. T. Jarvis & Sons.....	395 0 0	E. Pavitt & Sons	355 0 0
Jones & Andrews	375 0 0	Friday & Ling, Northend Works,	
F. Finnecy....	370 0 0	Erith*.....	340 0 0

BIRKENHEAD.—For alterations and additions to the bakery at the Union Workhouse, for the Guardians. Messrs. E. Kirby & Sons, architects, 5, Cook-street, Liverpool:—

P. Rothwell, Conway-street, Birkenhead† .. £905

BLOXWICH.—For alterations, additions, and renovations to music-hall, for the Corporation of Walsall. Quantities by Mr. John Taylor, Borough Surveyor, Walsall:—

J. & F. Wootton, Bloxwich* £467

CULWORTH (Northamptonshire).—For additions to school. Messrs. Law & Harris, architects, 1, Sheep-street, Northampton:—

A. Bird	£1,425 0	A. P. Hawtin ..	£960 0
W. J. Bloxham..	1,134 0	H. Martin	942 0
R. Gosford	1,063 0	G. F. Sharman..	936 0
Beardsmore & West	1,020 0	G. E. Stanton ..	925 19
F. G. Watson ..	999 0	E. D. Sharman & Son.....	923 15
T. Higgs	998 0	E. Green, Northampton*	898 0
T. Heath	997 0	A. J. Chown	860 0
T. Hickman	972 8		

LANCHESTER.—For alterations to sewage disposal works, Cornsay Colliery, for the Rural District Council. Mr. J. R. Lupton, Surveyor, Lanchester:—

G. T. Storey, Cornsay Colliery, Durham* .. £36

[Exclusive of the distributors.]

LUDDENDEN FOOT.—For paving, etc., part of Todmorden, Halifax, and Burnley main road, for the Urban District Council. Mr. F. Clayton, Surveyor, Council Offices, Luddenden Foot:—

J. Green & Sons, Burnley* £240 0 2

Digitized by Google

GRANGE-OVER-SANDS.—For Cartmel Valley water scheme, for the Urban District Council. Mr. Thos. Huddleston, Engineer and Surveyor, Council Offices, Grange-over-Sands:—

O. Wright & Co.	£5,373 11 4
Reid Bros.	3,483 0 3
A. E. Munn & Co.	3,461 5 4
P. Robinson	3,339 8 5
P. D. Hayes & Sons	3,233 3 6
F. Mitchell & Son	3,122 10 3
R. C. Brebner & Co.	3,106 10 11
A. Graham & Sons	3,099 0 0
W. Brigg	3,036 11 0
Worthington's, Ltd.	3,027 18 10
W. P. Meikle	2,941 3 10
J. H. Keith	2,872 0 10
G. Vickers	2,833 11 10
Jowett Bros.	2,768 1 6
T. C. Starkey	2,739 3 9
Davies, Ball, & Co.	2,737 19 10
Etheridge & Clark	2,714 6 7
C. Bushby & Sons	2,705 19 2
T. W. Rigby	2,697 2 5
A. Blair	2,685 12 8
Wickstead & Beardsell	2,606 1 0
W. H. Greenep	2,455 10 1

Labour in Trenching and Laying and Jointing Pipes, also Carting.

S. Frith	£1,130 4 9
I. Dean & Co.	976 19 2
B. Birch	673 7 6
R. Shuttleworth	850 14 11
W. Watson	612 14 8
T. Egan & Sons, Manningham*	491 0 2

Pipes and Fittings only.

Wilson's & Union Tube Co.	£2,208 10 5
J. Spencer, Ltd.	2,138 13 2
British Mannesmann Tube Co., London*	1,863 10 1
Stewarts & Lloyds	1,610 0 0
W. J. Graham	1,498 11 0
G. Schultz & Co.	1,375 0 0

Valves, Hydrants, etc.

Stewarts & Lloyds	£115 9 0
J. Blakeborough & Sons, Brighouse*	87 13 0
T. Egan & Sons	87 0 0
F. Hargreaves & Co.	74 15 0
J. Lees & Sons, Ltd.	72 4 0

MERTHYR TYDFIL.—For erecting boundary walls, to the Council School, for the Education Department. Quantities by Surveyor:—

D. Jones, Dowlais* £487

NEWPORT (Mon.).—For erecting higher elementary schools, with cookery centre, etc., at Stow Hill, for the Education Committee. Mr. Chas. T. Ward, architect, Town Hall, Newport. Quantities by architect:—

T. F. Howells	£25,944 12 8
A. J. Colborne	20,839 14 9
D. Davies & Sons	20,805 0 0
J. Jenkins, Ltd.	19,675 0 0
C. H. Reed	19,625 0 0
W. E. Blake	19,450 0 0
R. W. Moon, Newport*	19,197 0 0
J. Charles	18,984 0 0

PUTFORD.—For a mistress's house and other work at the West and East Putford Council School, for Devon County Education Committee. Mr. Percy Morris, Architect, 1, Richmond-road, Exeter:—

W. E. Bennett	£791 0	Carter & Morrish, Barnstaple*	£608 10
Ridge & Shute	750 15		

SHEFFIELD.—For timber dressing-shed, etc., at the Rivelin Valley Bathing Pool, for the Health Committee of the City Council:—

Badger & Appleby, South View-road, Sheffield* £235

WINDSOR.—For pulling down old Theatre Royal, etc., Thames-street, Windsor, for Sir William Shipley, J.P. Mr. Harry St. J. L. Percival, architect and surveyor, 47, Mortimer-street, Cavendish-square, W.:—

N. Wise	£437 10	J. Watson	£297 0
Hollis & Sons	365 0	Dunkley	290 0
J. Dovey	350 0		

WOOLFAR-DISWORTHY.—For enlargement, etc., of Woolfar-Disworthy West Council School, for the Devon County Education Committee. Mr. Percy Morris, Architect, 1, Richmond-road, Exeter:—

W. E. Bennett	£645 18 6	Carter & Morrish, Barnstaple*	£436 10 0
Ridge & Shute	557 0 0		

WORKSOP.—For constructing an open-air swimming bath in Prior Well-road, for the Urban District Council. Mr. G. Rawson, Surveyor, Town Hall, Worksop:—

A. Chadwick, Worksop* £1,550

[Six other tenders ranging from £1,665 to £2,061 11s. 8d.]

WORLINGTON.—For erecting a new two-arch bridge over the Little Dart River, for South Molton Rural District Council. Mr. W. S. Gardner, Surveyor, Chittlehampton:—

H. Berry	£550 0
F. Woolaway	512 10

ULVERSTON.—For Cartmel district water supply, for the Rural District Council. Mr. W. F. Y. Molineux, Engineer, Town Hall, Ulverston:—

Cast-iron Pipes.

A. E. Nunn & Co.	£1,157 19 0
J. McEwan & Co.	1,151 0 0
Cochrane & Co.	1,070 1 5
Halwell Iron Co.	1,057 15 4
Stanton Iron Co.	1,052 11 11
Etheridge & Clarke	1,052 11 10
J. Oakes & Co.	1,047 18 6
Sheepbridge Coal and Iron Co.	1,043 15 0
Clay Cross Iron Co.	1,031 18 2
Staveley Iron Co.*	1,021 15 8
D. Y. Stewart & Co. (per ton)	5 14 0

Valves and Fittings.

Hayward, Tyler, & Co.	£235 15 2
A. E. Nunn & Co.	222 9 7
Davies, Ball, & Co.	220 5 6
W. Farrar, Ltd.	215 0 0
Guest & Chrimes	214 13 10
Glenfield & Kennedy, Ltd. (Siemen's Meters)	210 7 0
Blakeborough & Co.*	193 4 0
Hamilton, Woods, & Co.	192 2 9
J. Lees & Co.	158 1 6

Pipe-laying and Carting.—Broughton East.

P. Robinson	£199 3 4	T. Iddon	£304 15 10
A. E. Nunn & Co.	454 15 0	T. Dirkin	288 7 6
A. J. Blair	416 15 0	J. Lourie	273 15 0
P. W. Hayes & Sons	376 4 2	G. Carruthers	271 0 8
A. Jackson	368 5 0	Egan & Sons	254 10 0
A. Graham & Sons	364 0 0	G. Wilson	250 12 0
T. W. Rigby	338 18 6	B. Birch	249 6 8
		R. Shuttleworth*	240 6 10

	Cartmel.	*Cark and Flookburgh.*
G. Carruthers	£278 6 8	£575 6 0
A. Graham & Sons	284 0 0	703 8 0
R. Shuttleworth	234 14 4	*522 9 11
B. Birch	*212 10 0	556 14 11
A. Jackson	276 5 0	729 16 6
A. E. Nunn & Co.	320 0 0	792 14 0
A. J. Blair	292 0 0	662 16 0
P. Robinson	357 6 8	826 7 6
T. Dirkin	225 10 0	571 11 6
J. Lourie	216 15 0	525 0 0
Egan & Sons	212 12 6	536 12 1
G. Wilson	226 1 4	528 3 0
T. W. Rigby	268 5 10	661 1 1
P. W. Hayes & Sons	279 7 6	717 4 0

J. J. ETRIDGE, Jr.

SLATE MERCHANT,

SLATER & TILER.

Penrhyn-Bangor,

Oakeley-Portmadoc.

BEST WORK ONLY.

"RUSTIC BROWN"

Roofing Tiles a Speciality.

Applications for Prices, etc., to

BETHNAL GREEN SLATE WORKS,

Bethnal Green, London, E.

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited

(Incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).

Norton, Stoke-under-Ham, Somerset.

London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,

LITHOGRAPHERS,

Employ a large and efficient Staff especially for Bills of Quantities, &c.

4 & 5, East Harding-st., Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS.

ADDISON WHARF, 191, Warwick Rd., KENSINGTON.

Building & Monumental Stone

A LARGE STOCK OF BEST

CAEN Stone & Alabaster For HOME TRADE and EXPORT

in Block, Slab, and Scantling.

JOINERY,

Of every description and in any kind of Wood.

CHAS. E. ORFEUR, LTD.,

ESTIMATES ON APPLICATION.

COLNE BANK WORKS, COLCHESTER.

Telephone: 0138. Telegrams: "Orfeur, Colchester."

LONDON OFFICE: 161, COMMERCIAL STREET.

ASPHALTE

For Horizontal & Vertical Damp Courses.

For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by

THE

French Asphalte Co.

Whose name and address should be inserted in all specifications.

For estimates, quotations, and all information apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL, CANNON STREET, E.C.

"Drop Dry" Glazing

ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.

Copper & Zinc Roofing.

The most Efficient and Economical System in the Kingdom.

Designs and Estimates Free on Application.

Telegraphic Address: "COURTEOUS, LONDON."

F. BRABY & CO., LTD.

Telephone: North 2100 (3 lines).

Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.

Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Digitized by Google

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

Town Planning: Past, Present, and Possible. By H. INIGO TRIGGS, A.R.I.B.A. Pp. 327. (London: Methuen & Co. 1909. 15s.)

THIS is a very well-written book, dealing in a well-ordered and comprehensive manner with a subject which is so extensive in its bearings that it would be much easier to fill three or four volumes about it than to compress its treatment, as is here successfully done, into one moderate-sized volume.

The first consideration in regard to town-planning is the nature of the site and its influence on the laying out of the town considered as an architectural whole, and with this is closely connected the question of the best provision for the circulation of traffic, since that also concerns the town plan as a whole. After this comes the treatment of the street architecture considered more in detail, and the treatment of squares and other central spaces which form the main decorative features of a city. Having got our city in itself as complete and effective as possible, we have lastly to consider the probable additions to it in the shape of suburban quarters built around the city after its completion, and the means of controlling their plan and the style of their buildings, and of connecting them up to the city in such a manner that they may seem parts of one great whole, and not mere accidental excrescences.

That is not exactly the order of arrangement in the book before us, but it would be the natural development of the subject if we could really begin the building of a large city as an entirely new work on a preconstructed plan. This was probably done in some of the great cities of the past, built under despotic rule—Babylon, most likely, for one; and it has been done in some of the early United States cities; but in modern times the opportunity for doing this cannot occur often. Cities are nowadays built, or rather grow up, not because an emperor or a king decrees them, but because a collocation of habitations at a certain place becomes necessary for social or commercial reasons; they generally develop from small beginnings; and it is only after these have grown into a pretty large town that the more enlightened inhabitants perceive that it has no well-ordered plan. All that can then be done is to draw up a comprehensive improvement scheme for the future, and to see that all local alterations, including new buildings, streets, or open spaces, should be carried out so that they may form part of the main proposed scheme, and be steps towards its ultimate realisation. That is what is being done to a considerable extent in Germany, where a good many large cities have their improvement scheme by which local alterations are governed; that is what has been done for about two centuries past in Paris, for the main lines of Haussmann's street improvements were all suggested in older plans; that is what we have failed to do in London, either in regard to the city or the suburban districts, and are only just waking up to the desirability of a comprehensive scheme when it seems too late to carry it out except in a very partial manner. The remarks on this subject in Mr. Triggs's introductory chapter are exceedingly well put, and should be read by those who have any official authority in connexion with London improvements. One obstacle is noted which is perhaps not always realised by the non-official mind, viz., the difficulty in this country of compelling people to sell their property for public improvements:—

> "As matters stand at present it is generally necessary for public bodies to keep secret their improvement schemes, in order to prevent property from unduly increasing in value. Before any great advance in the planning of our towns can be hoped for, the whole question of the expropriation of property will have to be seriously considered, as until municipalities are able to safeguard themselves on this point, all extension plans must be simply castles in the air if the legal means of carrying them out are lacking, and if, as is often the case, a few obstinate individuals have it in their power to prevent an improvement scheme from being carried out."

In regard to the absurd composition of streets and buildings at Hyde Park Corner, with the Wellington arch placed, as Mr. Triggs says, "on the shoulder of a curve," any one who will refer to the *Builder* about the date when that bungle was carried out by a restless and incompetent Commissioner of Works, will find that it received the strongest opposition we could give to it. But it was useless; people could not see the objections to it; we heard it referred to, by a man of rather exceptional culture, as one of the greatest of modern London improvements!

In his second chapter, on "Types of Ancient and Modern Towns," the author draws attention to some of the tendencies in town planning in ancient and in mediæval times; the orderliness and foresight of the Romans, in that as in other matters connected with the regulation of life; and the fact that mediæval towns, though the individual buildings might not be symmetrical, were as a whole often laid out in a very symmetrical manner. A study of mediæval buildings leads more and more to the conclusion that their builders seldom did anything with the special object of being "picturesque"; it may be doubted if the idea represented in that word had any place in the mediæval mind at all; they built in the way which circumstances rendered natural and easy to them, and hence their buildings have character and seem picturesque to us now. If we did the same, our buildings would perhaps appear picturesque to future generations; as far as we build only according to precedent, they will not.

The chapter on "Types of Ancient and Modern Towns" includes the consideration of the question on what system of street lines a town should be laid out, to produce the best results in regard to architectural effect and convenience of traffic. As we all know, the tendency in the towns founded a century or two back by new settlers and by the new Republic in America, was to lay them out in chess-board fashion—a series of straight streets crossed by others at right angles; a system of which New York and Philadelphia offer portentous examples on a great scale. Penn's plan for Philadelphia, of which an illustration is given, included however what was overlooked in the New York plan, the provision of some large open areas for squares in which large buildings could be effectively placed. Unfortunately all Penn's open spaces were not preserved in the actual plan.

This chess-board system of plan is monotonous to a degree, and not convenient for access from one part to another, since there are so many right angles to go round; but it has the advantage of providing conveniently shaped sites for buildings. The plan of radiating streets, cutting through such a series of square divisions, breaks up the monotony of the arrangement and facilitates circulation, with the disadvantage of leaving awkwardly shaped building blocks with acute angles. This may be got over by a little liberality in regard to building land, leaving some unbuilt spaces at the acute angles and keeping the building line back so as to give an extra façade facing the angle of the site, instead of carrying the building up to the angle. But on the whole, the best system that can be adopted in laying out a completely new city would probably be that of radial main avenues connected by groups of more or less concentric minor streets. Something approaching to this seems to have been adopted in the new town of Dalny, the seaport terminal of the Trans-Siberian railroad, the plan of which is given in the book. Mr. Trigg suggests that the combination of the radial and chess-board system is the best on which to make additions or improvements in towns already laid out, and with this perhaps we may agree. Wren's plan for laying out the portion of London which had to be rebuilt after the fire is certainly a very good example of this combination, and would have had a noble effect, but the people were in too great a hurry to rebuild to wait for its sanction.

One of the finest original schemes for city building was undoubtedly that of L'Enfant for the laying out of Washington, with its great central avenue with which the principal public buildings were to be connected; and it is significant that, after this plan had been only partially carried out and it and its author nearly forgotten for a century, the United States Government are now returning to it and intending to complete it in a larger and more sumptuous manner than was contemplated by its original author, whose main idea, however, will be preserved. It is significant, too, that after all the sneers which a whole generation has indulged in against Haussmann, it is now recognised that it is to him mainly that Paris is indebted for her present reputation of special stateliness of character. He destroyed much that was of interest as part of old Paris, no doubt; but a considerable proportion of it was bound to be destroyed before long, if only in the interests of sanitation. It should not be forgotten, however, that the Rue de Rivoli with its arcades was planned by Napoléon, and the western portion of it carried out by Percier at his order; and it is to him also, of course, that Paris owes its sublime triumphal arch, compared with which the Marble Arch is but a kind of architectural toy. The system of *rond-points*, with roads radiating from them, adopted by Haussmann in Paris, has much to recommend it (to Napoléon III. its principal recommendation probably was the opportunity for miltary command of the streets), but it has the drawback that the visitor unfamiliar with the city finds it difficult to orientate himself in these streets all running at oblique angles to one another. London is a much easier place to find one's way about, in consequence of its four nearly parallel routes running east and west—the Fleet Street and Strand line; the Piccadilly line; the Oxford-street line; and the Euston and Marylebone roads line; into one of which a street running north and south must land the visitor. But it may be replied that the planning of a town is rather for the convenience and pleasure of its inhabitants than of strangers.

There is, however, a good deal of truth in the remark of Herr Stübben, quoted by the author, that success in town planning depends

a great deal on recognising the natural topographical conditions, the levels and natural boundaries on the site, and that "the closer a town adheres to the natural conditions, the more original and attractive it will be." "The filling in of the secondary roads," Stübben continues (and we agree with him), "to the main network of thoroughfares should be approximately rectangular, because the rectangle is the most convenient form of building block, and for the actual traffic requirement the diagonal system can always be resorted to."

Into the chapter on "The Circulation of Traffic," some of the arguments and some of the diagrams in which have appeared in our pages, we have not space to go, further than to support strongly the remark that the congestion of traffic in London is largely due to the mixture of slow-going and quick-going traffic. It is the slow-going van, which keeps a whole string of faster vehicles behind it at the mercy of its movements, that is the real curse of the occupant of carriage, hansom, or taxicab; and until we adopt the commonsense system of barring certain roads to slow traffic, this nuisance is likely to remain much the same. On this point we would direct attention to the description and sectional diagram given by Mr. Triggs of the underground tunnels for freight traffic in use in Chicago, where the Illinois Tunnel Company now own and operate sixty miles of tube tunnel by which wagons of goods are conveyed, and raised by lifts to the premises for which they are destined. The largest customers of the Tunnel Company, it appears, are the postal authorities, for whom the company is doing a work which would otherwise employ hundreds of mail carts on the streets.

In regard to the planning of streets Mr. Triggs of course cannot avoid the consideration of the old dilemma between the straight-lined street, which fulfils the proper function of a street as (like the Euclidian definition) "the shortest distance between two points," and the more interesting appearance of a curved or crooked street, which nevertheless it seems illogical to plan for that purpose deliberately. He contrasts the effect of High-street, Oxford, and of the Rue de Rivoli, naturally to the advantage of the former; but then the street at Oxford is not the *made* picturesque, it is the result of accident or circumstance. To our thinking a new street which is not laid out straight *must* be set out on a geometrical curve; any imitation of an accidental irregularity is foolish in itself, and almost certain to fail of its effect. That a long straight street "produces on the beholder only the effect of desiring to get to the end of it" need not be true if it is diversified by some architectural breaks, such as an occasional circus or recess with special architectural treatment. We rather like, however, Mr. Triggs's suggestion in a diagram on page 215 for disguising the change of direction in a long street—instead of making a pretended "accidental" curve, to place a monument or other such feature in the centre of a widened portion of the street, and continue the street beyond at a slightly different angle. The author admits that a straight street on a rising gradient and leading up to some important object (as with the Champs Elysées and Arc de l'Etoile) justifies itself; and he remarks on one point that we do not remember to have seen noticed before, that such a rise, if not an absolute inclined plane, should be on a concave and not on a convex section. He instances the unpleasant effect of the latter in several American cities, "where street after street, in towns planned on the chess-board system, terminates abruptly on the skyline and descends beyond, so that the houses beyond the summit appear to be sinking into the earth."

In regard to the question of the symmetrical and grouped treatment of street buildings, as against the *laissez faire* of a picturesque irregularity, Mr. Triggs holds the balance very fairly, and we do not differ much from him; he admits the desirability of a broad architectural design in important streets, while leaving liberty of irregularity to those less important; and he recognises that anything in the shape of a crescent on a symmetrical curve must be treated with the horizontal lines unbroken, or all its effect is lost. One objection that he makes to the grouped treatment of street houses—their parti-colour painting at different times by different tenants—is surely rather out-of-date; few houses in good streets are now built of materials that require painting. We do not agree with the proposal quoted and illustrated from an eminent architect as to a proportionally increased height for houses as the actual width of a road is increased. The height of houses should not exceed the width of the street, whether in regard to architectural or hygienic conditions, and we should decline to approve of any exception to that rule. On the other hand we welcome the suggestion on page 254, that where a street of small houses unavoidably runs east and west, the houses at each side which respectively face north and south should show some practical recognition of the fact by a difference in their planning, instead of leaving the same set of living rooms on each side of the street, one with a sunlit aspect and the other with no sun at all.

There is a great deal to be noted in the remarks on the treatment of open spaces and squares, and the plans given, which all go to show that in continental cities open spaces are for the most part far better and more artistically treated than in England. Both in regard to this subject and to the large subject of the architectural surveillance and planning of the suburbs round a great city, the author speaks of the need of a controlling authority; to which we may add that such a controlling authority should be a permanent institution or committee, not one liable to change with the change of Government or municipal elections. It is of no use for a Committee to formulate schemes for public improvement of urban or suburban areas, if these are liable to be thrown out by its successors. To accomplish anything, continuous action and continuous authority are necessary.

A Restoration of the Mausoleum at Halicarnassus. By the late J. J. Stevenson, F.S.A. Pp. 35. (London: B. T. Batsford. 1909. 2s. 6d.)

This essay, with some of the illustrations, was originally published in the *Builder* (August 29, September 5 and 12, 1896) under Stevenson's own name. It is now re-issued as a small book, with some revision, and accompanied by a beautiful coloured plate showing a perspective view of Stevenson's restored Mausoleum, from a water-colour drawing made by Mr. E. J. Lambert under Stevenson's direction; this forms the frontispiece.

The merit of Stevenson's restoration is that he has managed to accommodate a larger number of recorded measurements to apparent facts than any other restorer of the Mausoleum, and his peculiar treatment of the *pteron* which carries the quadriga, on steps which follow a rather easy gradient near the base, and then change to a steep gradient, though it certainly does not look very beautiful, at all events serves to explain the steps with narrower tread than riser, some of which are now in the British Museum, and which evidently imply a range of steps at a steep angle. The main outline formed by the *pteron* on this system, however, looks awkward and broken-backed, and not the kind of thing we should have expected a Greek architect to put up. Cockerell's restoration (illustrated in our issue of August 29, 1896) looks much more like what one might have expected the design to have been; but this restoration was made before Newton's discovery of the remains, and it will not fit into the discovered facts, as far as they go. Stevenson's will; it was, in fact, drawn out in relation to a close study of the British Museum fragments; and yet we cannot help feeling, in regard to the crowning pyramid or *pteron*, that however it was built, it was not this way. It works into the remains as far as known, but it is not convincing to the perceptions.

There is one important point, however, in which Stevenson's design does not answer to the curious and interesting record of the observations of the Rhodian knight La Tourette, recorded by Guichard towards the close of the XVIth century, describing how the military party from Rhodes, looking for stone to strengthen the fortifications of Halicarnassus, dug up some steps of white marble, and found that the lower they dug the further the steps extended. This looks very like the idea of a continuous base of steps all round the monument, and Mr. Oldfield adopted it in his ingenious restoration (see *Builder* of February 22, 1896, page 154). The idea of this, and of a stepped *pteron* at the top of the edifice, would explain the discovery of steps of two different rakes, without having recourse to breaking the line of the *pteron*, and it seems a not improbable base for a monument of the kind. Mr. Oldfield's large and solid built-up *cella*, on the other hand, can hardly be accepted, as it is quite at variance with Martial's phrase about mausolea, "aere vacuo pendentia"—"hanging in empty air," whereby was obviously meant that the great bulk of the *pteron* had only an open colonnade beneath it.

All the attempts at realising what the Mausoleum actually was must be only speculative, except as to some details; we have indeed the whole of the Order, but as to the rest, Newton's discovery has given us enough to suggest theories but not enough to clench them. Stevenson's essay, however, is a very interesting one, and one of the best additions to the Mausoleum literature, and is worth possessing on that account. We cannot help thinking, nevertheless, that Cockerell's comes nearest to being something like what the Mausoleum was like, in general appearance and proportions, because it is really fine and satisfactory to look at, though the details are not authentic.

The Order of the Mausoleum, as most of our readers are aware, has for some time past been set up in restoration in the British Museum, sufficient portions of the original having been recovered to render this restoration, at all events, unquestionable. An illustration of it is published in the present issue, from measured drawings made by students of the Royal College of Art.

Notes on the Science of Picture-Making. By C. J. Holmes. Pp. 311. (London: Chatto & Windus. 1909.)

In his introduction to this book the author, who is Slade Professor of Fine Art at Oxford, remarks that æsthetic critics on art have all failed in the chief part of their business, and that in spite of all the great names connected in one way or another with the criticism of the fine arts, "we have still no fixed standard for passing judgment on pictures already existing." No; and we never can have any such standard; the thing is impossible, partly for this reason—that what is of most intellectual interest in a picture cannot be defined in words at all; if it could, there would be no need to paint the picture. It is only the secondary and prosaic class of pictures that can be analysed; the power of the highest class of paintings over our minds can only be felt, not defined. What art-criticism can do is this: it can point out defects or excellencies in execution, and it can lead people to think more about the reasons of painting, by disquisitions on composition, colour, etc. But it can never arrive at setting up a fixed standard by which all paintings can be judged as good or bad: That is a matter of perception, not of thought. Mr. Holmes seems to think that musicians have arrived at a definite agreement on canons of taste, while painters have not: We can only conclude that his acquaintance with the world of musicians and musical critics must be very slight.

Digitized by Google

Mr. Holmes's book is valuable in the only way in which art-criticism can be valuable, viz., in inducing readers to think upon the subject of art. His first chapter on "The Value of Emotion" may suggest to readers why it is that some excellently executed pictures—those of Bougereau are typical examples—so entirely fail to stir our feelings. In the chapter on "The Value of Theory" he quotes Leonardo to the effect that by constant practice the eye may be trained to measure spaces accurately and deduces from this that to the same extent "the eye may be trained to recognise those harmonies of spacing and relations of mass which make design decorative." Undoubtedly it may; but that is not "theory"—that again is perception, arising from the training of the eye and judgment by looking at many good examples. A man's perception about pictorial colour and composition is totally different after he has been in the habit of studying in picture-galleries from what it was when he came to the subject with no experience of pictures. But that does not enable him to lay down any rules, for his own guidance or that of others. What he sees and recognises is what cannot be defined in words. Every art is its own language.

There are some good and suggestive remarks in the chapter on "The Emphasis of Spacing," useful not so much for judging of existing works as for suggesting to the artist some of the qualities to aim at in his own works. "The common practice," it is observed, "of surrounding a sketch with pieces of paper, and noting the changes effected by shifting them so that the proportions are continually altered, can be strongly recommended as a simple means of training the eye." In the chapter on "Emphasis of Colour" it is rather rashly remarked that "few or no painters who were not good colourists will stand the test of time." What about Michelangelo, who was certainly not a great colourist? We agree, however, in thinking that success in colour—inspiration in colour we might call it—is the greatest element in making a great painter. The chapter on colour, and on various methods of treatment which tend to intensify its effect, is perhaps the best and the most practically useful in the book.

The second section of the book deals with "Emphasis of Materials," in which the character and capabilities of various methods of execution are discussed with a great deal of insight. We are glad to see that the author has a sympathetic word to say for wood-engraving, and for the beautiful work of Mr. Timothy Cole, which has often been mentioned in our columns; though at the same time he suggests that the true school of wood-engraving is found in the work of Blake, Calvert, and Samuel Palmer, who worked entirely on the principle that wood-engraving consists essentially in cutting lights out of dark, and that wood-engraving on this principle "has powers which have never been sufficiently exploited." This may be true, but we think there will always be a limit to the effect which can be produced by this pure theory of wood-engraving. Work like Mr. Cole's consists, no doubt, not so much in cutting out lights as in leaving darks in relief; but when we see the beautiful effects produced we are inclined to shut our eyes to the fact that the process is not quite logical.

The third section of the book deals with "Emphasis of Character," the most difficult of all to get the public to understand; in fact, only a very small section of those who go to picture exhibitions have any idea what is the difference between a picture with character and one that has none; they judge pictures by the closeness of their imitative success. Had this been true, as the author observes, "the great painters would be known by their obvious resemblance to nature, *and thereby to each other* [the italics are ours], as one photograph resembles another." That is admirably put, and might even reach the perceptions of the average man if he could be persuaded to consider it. Does it ever occur to people to think why, if painting is only the art of copying, every great painter has a style of his own differing from that of all the others? We recommend those who wish to understand more about the essential objects of the art of painting to study this chapter carefully; it may set them thinking, not without results.

Fresco Painting, its Art and Technique. By James A. Ward. Pp. 69. (London: Chapman & Hall. 1909. 10s. 6d.)

The object of this small but excellent book is mainly to give some practical hints in regard to "buon-fresco" (which we may call "real fresco") and "spirit fresco" from the author's own experience. In regard to the latter method he assisted Lord Leighton in the execution of the mural paintings of "Peace" and "War" in the Victoria and Albert Museum, and therefore had much practical acquaintance with it; but, though regarding it as a remarkably durable process, he maintains the superiority of buon-fresco in effect and character of surface, and is of opinion (we hope he is right) that the perishable nature of true fresco in this climate has been greatly exaggerated owing to the unfortunate results of the Houses of Parliament frescos, which he considers to have been due to inexperience and the use of wrong materials rather than to adverse conditions of climate.

Mr. Ward gives a list of the colours which can be safely used in wet fresco, and the chemical reasons for preferring them; the palette is a restricted and somewhat severe one, but this is not in every sense a disadvantage, for it tends to keep mural painting to the somewhat subdued scale of colour which is best suited to its function in the decoration of architecture. One brilliant colour, ultramarine, is noted as being very suitable, chemically, for fresco, but its cost is prohibitive, and French ultramarine is said to be very treacherous to work with. Cobalt is the only blue admitted into his scheme of pigments.

In his short introductory chapter on "The Relation of Mural Painting to Architecture" the author speaks very justly of the manner in which the laws which govern good architecture are equally applicable to painting, more especially when used as a decoration to architecture.

In regard to the practical conditions of fresco painting we may quote the following summary:—

"The great permanence of fresco paintings is due to the formation of carbonates, and sometimes silicates, of lime on the surface of the plaster, which takes place during the drying of the latter. The carbonic acid contained in the natural limestone is driven out of it by the process of burning in the kiln, and after the burnt lime has been slaked into lime "putty," it has then become what is known as a hydrate of lime. As long as the plaster is wet on the wall the lime in the plaster exists in the state of a hydrate, and the applied colours of the painting become saturated with this form of lime; but during the process of drying the lime on the surface, and to a slight depth below the surface of the plaster, rapidly absorbs carbonic acid gas from the atmosphere, and becomes a carbonate of lime, which is formed as a hard and crystalline skin, or surface covering, under which the colours are locked up, and so protected from any atmospheric influences. In addition to this carbonate surface a silicate of lime is sometimes formed, especially when in the painting some of the more earthy colours are used which may have silica in their composition. These thin coverings of carbonates and silicates of lime render fresco paintings impervious to wet or damp on the surface, so that they may be occasionally washed without injury."

It is added, however, that bad air, such as sulphur products from gas and coal consumption, will in time convert the carbonate of lime into a sulphate of lime, and that hence it seems desirable that coal fires and gas should not be used in buildings containing fresco paintings.

The advantage of the spirit fresco process is that the artist is not compelled to paint at once on the plaster while wet—which necessitates fixing on the amount of the day's work before beginning, and finishing it off at once—but can return to it at any time. The essential difference between this and true fresco is the interposition of two or three coats of a separate "wall wash," of which the ingredients are given, and upon this the picture is painted. It is mentioned that in the "Arts of War" fresco the final wash was only applied once, leaving a rather rough surface, which Lord Leighton said made it "like painting on a gravel walk." Accordingly, the ground for the "Arts of Peace" received the final coat three times, and was left with a much smoother surface. The different nature of the grounds led to a different handling of the colour, the "Arts of War" painting being treated broadly and the colour throughout used rather thickly, while in the "Arts of Peace" a thinner method in the colouring was employed, and the modelling carried to a higher degree of finish.

The author speaks highly of the durability of this method of fresco, stating that the spirit fresco executed forty-two years ago by Lord Leighton in Lyndhurst Church had completely retained its brilliancy three years ago, when he last saw it, although in the winter season condensed moisture constantly ran down its surface, but without appearing to injure it. At the same time he admits that it has not either the monumental dignity or the luminosity and power of reflecting light which are characteristic of true fresco.

The remainder of the work contains some chapters of notes on the style and the condition of some ancient frescos in Italy. It would appear that those of Giotto and of Angelico have required, or at any rate have received, a good deal of re-painting. The frescos of Gozzoli, in the Riccardi Palace, have stood better. In noting that it is said that a fresco of Perugino's in the Sistine Chapel was destroyed to make room for Michelangelo's painting of the Last Judgment, the author remarks that in those spacious days of great activity it was evident that there was some difficulty in finding wall space for the numerous painters whose talents it was desired to employ, and contrasts it with the state of things in England at the present day, when "there are acres of blank spaces on the walls of our churches and public buildings, and capable enough artists in our midst who might be employed to decorate these barren spaces, but nobody, or no Government, public-spirited enough to entrust modern artists with commissions to execute such works." So we have many times lamented.

The book is beautifully printed and got up, and with many good illustrations.

MAGAZINES AND REVIEWS.

We are glad to see that the *Burlington Magazine*, in an editorial article on the Victoria and Albert Museum, takes a somewhat more sympathetic tone about the building than has appeared before in its columns, and remarks that, occupying as it does a central position in relation to the Natural History Museum, the Science School, the Imperial Institute, and the Albert Hall, "we must recognise how thoroughly it harmonises with the architectural monuments around it," which was probably one object of the architect in designing it. It is mentioned in the article that the idea of industrial education as the object of the museum has been revived and emphasised by the present Board of Education, in opposition to the old idea of purchasing articles in consequence of their artistic beauty; we concur with the Editor in preferring the latter principle of action. The great museum ought not to be reduced to a standard of utilitarianism. In the same issue Dr. F. R. Martin writes on "The True Origin of so-called Damascus Ware." He gives reasons for thinking that Isnik was the real place of fabrication of the plates called Damascus ware, though many

Digitized by Google

of them were sold in Damascus. Mr. Paul Lafond contributes an article on the Spanish sculptor and architect Philippe de Bourgogne, giving a summary of his work, with a fine illustration of two of his remarkable though too pictorial sculpture scenes from the Passion, in Burgos Cathedral.

The most important article in the *Art-Journal* is one on "The Treatment of Drapery in Painting," by Mr. A. L. Baldry, who thinks that insufficient attention is given at present to this important element in figure-painting. He includes under the head of drapery not only the flowing robes usually suggested by the word, but costumes such as those of Van Dyck's Philippe le Roy and Velasquez' Philip IV. As he observes, drapery of every kind has its own construction, depending on the nature of the material; and in such a picture as Watts's "Paolo and Francesca" he maintains that it is the play of the drapery which explains to the observer what is happening to the two actors in a tragic drama. That might be explained without the drapery; the use of the drapery in this and many other examples of semi-nude figures is to give broader surface to the design. We quite concur in the general views laid down in the article. The pictorial value of drapery is admirably illustrated by Leighton's "Greek Girls Playing at Ball," where the drapery may be said to be the most important element in the picture. Mr. Rathbone continues his essay on "The Artistic Training of a Jeweller." The frontispiece to the number is a good etching by Mr. Luke Taylor of Burne-Jones's sentimental and over-rated picture, "Love among the Ruins."

The *Architectural Record* (New York) contains an interesting article by Mr. Wight, the architect, on "Reminiscences of Russell Sturgis." Though Sturgis's executed works in architecture, as far as we have seen illustrations of them, were not remarkable, he appears to have had very far-seeing ideas as to the development of modern American architecture, and was strongly opposed to the mere adoption of French forms of classic treatment which has taken such possession of the present generation of American architects. He considered that the chance for modern architecture lay in grasping the principles and motives of mediæval architecture and applying them to modern requirements. The number contains an article by Mr. Hastings in support of Professor Goodyear's fantasies about "architectural refinements," which it appears are not to be best investigated by such scientific measurements as Penrose employed at the Parthenon (of course there is no mention of Penrose—he was an Englishman) but by the less troublesome process of photographs, which, of course never lend themselves to any distortion of line! Hence we learn that "the wonderful masons" who built Rheims made the change from the vertical line of the crossing piers to the "normal lean" of the nave in three steps (three bays) on the north side of the nave, while on the south side it took them four bays to do it. Some persons would consider this a proof that the irregularities were accidental, but apparently the fact that the "wonderful masons" could not do it symmetrically on both sides of the building is an additional proof of design. What can one say to such solemn nonsense?

In the *Engineering Magazine*, Mr. Harold V. Coes continues an article on "Smoke Prevention or Smoke Consumption" discussing the beneficial results attainable by the employment of mechanical stokers for steam-boilers. "The Choice of Heating Equipment for Manufacturing Plants," by Mr. G. W. Stanton, is in reality a review of heating systems as applicable to large establishments or buildings, and therefore concerns architects more than its title would imply. Two other contributions deserving mention in the same number are "Freight-handling Machinery," by Mr. W. Boecklin, and "Modern Light Sources and Industrial Lighting," by Mr. H.T. Owens.

In the *Journal* of the Franklin Institute, Professor Leslie B. Seely deals with some problems of forestry. After pointing out that there are 168 million acres of land in the United States which could be utilised for forestry without economic loss, he adduces figures from various European countries in support of the view that forestry offers an exceptionally lucrative investment where the capital is available on a sufficiently large scale, and where the returns can be deferred for a fairly long term of years. Passing on to other problems, Professor Seely shows by statistics from India and Bohemia that one effect of forests is to increase the amount of rainfall. With recent experience of weather in England, this conclusion does not seem calculated to popularise the development of reafforestation in the United Kingdom. Figures from America, France, Switzerland, and Italy are adduced to show the beneficial effect of forests in restraining floods, which have caused so much damage in many countries where timber has been ruthlessly cut down in times past.

Ferro-Concrete is the title of a new monthly journal devoted to concrete and steel construction in engineering and architectural practice. Among other articles on recently-completed works we notice one giving details of the bridge to be built in ferro-concrete at Kilkenny, the design providing for a centre arch with the clear span of 140 ft., thus representing the longest span in reinforced concrete hitherto contemplated in the United Kingdom. The July issue contains also articles on ferro-concrete work at King's Dock, Swansea, and Grosvenor-road, and an account of the new bridge over the London and South-Western Railway at Virginia Water, the publication being one of direct interest to architects and others undertaking work in reinforced concrete.

In the *Nineteenth Century* Mr. John Collier writes a witty and amusing article on what he calls "The 'Slump' in Modern Art." He has the misfortune to belong to a decaying profession. Pictures are indeed bought, but mostly those of deceased artists. He suggests that painters should try to paint what the public wants, not what the critics tell them they ought to want. What does the public want? In the first place it wants beauty—especially human beauty. "Is this so very wrong?" he asks. "Certainly most modern artists seem to think so. There have been 'fair women' exhibitions held recently that positively made one shudder." There have indeed! The public likes finish, and a certain measure of detail, and a certain simple realism. It likes things in a picture to look more or less as they look in real life. And in these matters Mr. Collier "is a good deal in sympathy with the vulgar public." So are we. The article must not be taken too seriously, but there is a great deal of humour and sound sense in it. Mrs. Stirling contributes a long and interesting article, full of anecdote, about the late Mr. Spencer-Stanhope and his artist friends. It would appear that Spencer-Stanhope was a very different sort of man from what his dreamy archaic pictures would have led one to expect. His art moved in narrow and very conventional limits, but there was a great beauty both of colour and poetic suggestion in his pictures.

The *Empire Review* contains a short but drastic article by Mr. A. M. Wamsley, manager of the Accident Department of the Royal Exchange Assurance Company, on the Workmen's Compensation Act, which he considers has given rise, and unless firm measures are taken, will continue to give rise, to a great deal of malingering, not so much in the way of manufacture of accidents as exaggeration of their consequences. Since the Act came into force, men are far longer on the sick lists than formerly, some of them obtaining more money while "incapacitated" than they would receive while at work:

> "A quarryman in the receipt of 30s. weekly is injured; receives 15s. weekly from his employers, and three sums of 9s. each from three benefit societies—total 42s. It does not seem likely that he will ever get better."

Some such results are just what might have been expected, and Mr. Wamsley's official position must give him a good deal of opportunity of information on this head.

In the *Contemporary Review* Mr. Stanley Jevens concludes his important essay on "The Causes of Unemployment," the greater part of this portion of it being occupied by a very elaborate train of reasoning tending to connect fluctuations in trade with crises in solar activity. We cannot attempt to follow the argument here, but the facts given are very striking and to a great extent convincing. The connecting link between solar disturbance and trade is, of course, the sun's influence on crops, producing rich or poor years. The practical deduction is that cycles of bad years are inevitable, and can be prophesied and provided against.

The *Century* contains an article on Rouen by Mrs. Pennell, with sketches by Mr. Pennell—not, we should say, quite so good as usual. The article is, of course, merely a popular one. Mr. Homer Saint-Gaudens concludes in this issue his reminiscences of his father, the eminent American sculptor. There is a good deal of interest in Saint-Gaudens's letters and talk about art.

The *Cornhill*, which does not often deal with artistic subjects, has a good article by Mr. Kenneth Bell on "Architecture in English History," an attempt to show the relation, in various ways, between English mediæval architecture and English history and national circumstances. In the same number Mr. J. D. Crace gives an account of an inspection of the Suez Canal, shortly before its completion, under the guidance of de Lesseps, by a small invited party of Frenchmen and Englishmen, of whom he was one. Another of the party was César Daly, from whose lips we heard, many years ago, an account of the same excursion, and how de Lesseps told them they could not go to see some place and return the same day—"at least," he added, "unless you have *le diable au corps*, like Daly."

The *Antiquary* is an interesting number. It includes an article on Neolithic implements discovered at Stifford in Essex; on "Prerogative Mills in Furness and Seignorial Mills in Canada," by Mr. O'Neill Pearson; "A Chat about Chests and Coffers," with some sketches, by Mr. F. C. Hodges and Mr. W. A. Dickins; and one on the Abbey of St. Eloy, Noyon, by Mr. Tavenor-Perry, who is doing good service in looking up the history of out-of-the-way and little known mediæval places and monuments. An article on "An Ancient Gatepost," by Mr. A. Newell, is partly conjectural. In stone-fenced countries the author has found numerous instances of old posts of stone with a large square hole cut right through them near the top. He suggests that these were for an oak bar for a hinge attachment, where iron was costly, and that the lower end of the upright turned in a hole in a stone let into the ground, or in a mere hole in the ground without any stone. The writer got some traditional evidence of this usage, of which he gives a sketch as a kind of restoration.

The *Church Builder* (quarterly) gives some illustrations and a description of the church of St. Matthew, Shuttington, Warwickshire. It is a small church, of which the core, so to speak, is Norman, most of the original walls having been hidden by a casing of roofing tiles and Roman cement, the Norman doorway at the west end alone being visible of the ancient work. The casing has been cleared away and the original wall strengthened by the injection of liquid grout. The original chancel arch and the windows had been replaced by cement jambs and arches, now removed and stone substituted. The repairs have been carried out under the direction of Mr. W. H. Bidlake.

Digitized by Google

London: Printed for the Proprietors of "The Builder" by Horace Cox at Windsor House Printing Works, Bream's-buildings, E.C., and Published by John Morgan at the Office of "The Builder," No. 4, Catherine-street, Strand, W.C.—August 21, 1909.

THE BUILDER

VOL. XCVII.—No. 3473. AUGUST 28, 1909.

Contents.

	PAGE
Report of the American Committee on Reinforced Concrete	229
Local Government Report—Unemployment	231
Notes	232
Competition for Extension to Stoke Town Hall	233
Reinforced Concrete in Aldwych: General Accident Assurance Building	234
Public Buildings at Bursledm	235
Notes from Paris	235
The Hydration and Hardening of Portland Cement	235
Almshouses at Lyford, Berks.	236
The Architectural Association	236
The Supervision of Brickwork	236
Dangerous Structures	238
Legal Column	239
Meeting	240
Illustrations:—	
Proposed Additions to the Town Hall, Stoke-upon-Trent	240
Design for Bursledm Municipal Buildings	240
North Aisle, St. Bartholomew, Smithfield	240
Model Farm Buildings, Ottawa Canada	241
Artificial Stone for Footways	242
Archæological Societies	244
Competition News	244
Books Received	244
Correspondence:—	
Slating	245
London and District Borough Councils	245
Projected New Buildings in the Provinces	245
St. Pancras Electricity Works	246
General Building News	246
Sanitary and Engineering News	247
Miscellaneous	247
Capital and Labour	248
Patents	248
Some Recent Sales	249
List of Competitions, Contracts, etc., Open	250
Prices Current	252
Tenders	253

Illustrations.

Additions to the Town Hall, Stoke-upon-Trent. (Design Placed Second by the Assessor.) By Messrs. Warwick & Hall.

Second Premiated Design for Proposed Municipal Buildings, Bursledm. By Mr. E. Montague Thomas.

Illustrations in Text.

	PAGE
Reinforced Concrete in Aldwych: General Accident Assurance Building:—	
Figs. 1 to 5	234
Almshouses at Lyford, Berks	236
View in North Aisle, St. Bartholomew, Smithfield. From a Photograph by Miss A. G. Weaver	240
Model Farm Buildings, Ottawa, Canada:—	
Plan of Cattle Houses	241
Section of Stables	241
Plan of Stables	242

Report of the American Committee on Reinforced Concrete.

At the annual meeting of the American Society of Civil Engineers in June, 1903, it was decided to form a special Committee to take up the question of concrete and reinforced concrete, the final result being the constitution of a body representing the Society of Civil Engineers, the Society for Testing Materials, the Railway Engineering and Maintenance of Way Association, and the Association of American Portland Cement Manufacturers.

The Joint Committee includes a goodly contingent of those engaged in engineering instruction, as shown by the names of Professor W. K. Hatt, Professor A. N. Talbot, Professor G. Lanza, Professor E. Marburg, Professor Swain, and Professor Turneaure; but it should be mentioned that most of these have devoted considerable attention to the scientific investigation of reinforced concrete. Professional engineers are well represented, among their ranks being Messrs. W. B. Fuller, R. L. Humphrey, Leon S. Moisseiff, J. W. Schaub, Sanford E. Thompson, and George S. Webster. The cement industry contributes several members, the best-known in this country being Messrs. R. W. Lesley and Spencer B. Newberry.

Unfortunately, as happened also in the case of the British Committee on Reinforced Concrete, there is no representation of engineers and others concerned in the practical construction of reinforced concrete works. Such an omission is undesirable for two reasons—one being that it may possibly lead to injustice, and the other that the knowledge and experience gained in practical work extending over a period of many years deserves to be brought before a Committee whose object is to collate knowledge and facts from every available source. Upon this point we may usefully cite the example of the French Ministry of Public Works, by whom some of the leading engineers commercially interested in reinforced concrete were appointed members of the *Commission du Ciment Armé*.

Although four members of the American Committee, including Mr. C. C. Schneider, the Chairman, and Mr. E. Swensson, the Vice-Chairman, dissent in some essential points from the views of the majority, and have expressed the opinion that the Report should not be published in its present form, their suggestion was not accepted, and the majority Report has been placed before the members of the several societies for the purpose of discussion.

In the following notes we deal first with the recommendations of the majority, making references to the Report of the British Committee where necessary or desirable.

Part II. of the American Report contains some timely hints on the improper use of reinforced concrete, pointing out defective design, poor or unsuitable material, and faulty execution as the usual causes of failures, from which we have so far been almost entirely free in the United Kingdom. Inadequate experience, lack of attention to the connexions between members, and the adoption of dangerously high unit-stresses are stated among other reasons for defective designs in the United States. The employment of inferior concrete and high-carbon steel of brittle quality are indicated as causes of failure coming under the category of those attributed to poor or unsuitable material. Faulty execution is another serious defect which could be eliminated by more adequate control over the work of contracting firms. The Report quite properly suggests that the responsibility of superintending the execution of all reinforced concrete works should be vested in the designing engineer, independent of the contractor. The recommendation is in accord with British practice and clearly deserves attention in America, where a different plan is frequently adopted.

Under the head of Responsibility and Supervision we notice the proposal that the test loads shall be such as to develop twice the calculated working-stresses in critical parts. The limit of test load to 50 per cent. in excess of the normal working load would be preferable, for it is important that unnecessary strain should never be imposed on newly executed work in concrete. The provision in the same clause that "load tests shall not be made until after sixty days of hardening" is wise, for the testing of concrete structures at too early a date as sometimes specified can serve no useful purpose, and may very easily lead to inconvenient results.

We believe it to be the fact that somewhat exhaustive tests have been conducted during the past three or four years by the American Committee. Hence one might expect to find in the Report a definite statement of the results ascertained. Nothing of the kind is put forward, although it may be assumed that the various recommendations made concerning the selection and employment of materials for concrete and reinforced concrete are in reality based upon the experiments undertaken.

The sections devoted to the durability of concrete and embedded steel, the constituents of concrete, the selection of metal for reinforcement, the preparation and placing of mortar and concrete, details of construction and general design are rather disappointing in the respect that they contain little or nothing that has not been known for the last ten years at least by practical constructors. The sections are satisfactory

Digitized by Google

considered as an authoritative confirmation of generally accepted knowledge and precepts, but it is a little open to question whether such a pronouncement represents an adequate return for any proportion of the 20,000*l.* supposed to have been expended in research work. Hostile critics of the Report urge with some show of reason that if, instead of constituting the Committee of men for the most part without personal experience in practical construction, the Joint Committee had included a sufficient leavening of men able to bring forward reliable data from past experience and to indicate forms of reinforced concrete design and problems awaiting inquiry, the labours of the organisation might have commenced at a less elementary stage, thereby enabling a better return to be made for the money dedicated to experimental research.

The consideration in point is one that may be commended to the organisers of future committees on reinforced concrete, and particularly to the Institution of Civil Engineers, by whom an inquiry is now being commenced on lines that are not suggestive of a satisfactory outcome.

The section in the American Report dealing with Destructive Agencies is rather feeble. For instance, we are told that "steel embedded in good concrete will not corrode," but that "if the concrete is porous the metal may be corroded in the presence of moisture." As to the effect of electrolysis on concrete, the Report says "there is little accurate information available."

Data concerning the effect of seawater on concrete and reinforced concrete are characterised as "inconclusive and limited in amount." Concrete of good quality thoroughly hardened is said to be affected appreciably "only by strong acids which seriously injure other materials," and to resist the action of "petroleum and ordinary engine oils," while oils "which contain fatty acids appear to produce injurious effects." The action of alkalies is characterised as problematical, a term which might be applied not inappropriately to indicate the practical bearing of the axioms in this section of the Report.

Part III., on Materials, rightly gives preference to Portland cement for reinforced concrete, and insists upon the adoption of the standard specifications for cement which are printed in Appendix I. to the Report. The remarks made on aggregates fairly represent the practice generally followed in good work, two points opportunely mentioned being the desirability—or, as we should prefer to say, the necessity—of seeing that aggregates are "free from vegetable loam or other deleterious matter," and the unsuitability of cinder for reinforced concrete structures, this type of aggregate being justly characterised as one that "may be safely used only in mass for very light loads or for fireproofing."

On the subject of "Metal Reinforcement" the Committee recommend mild steel complying with the specification of the American Railway Engineering and Maintenance of Way Association, printed in Appendix I., although for some reason which is not explained they publish an alternative specification, presumably their own, for high-carbon Bessemer steel with the tensile strength of about 47 tons per square inch. Material of this kind cannot be used economically as reinforcement, because the permissible stress must be governed by the ratio of the coefficients of elasticity and not by the tensile strength of the steel; moreover, it clearly comes under the ban stated in Part II. of the Report as a quality of steel likely to develop brittleness and thereby involve the risk of failure.

Part IV., on the Preparation and Placing of Mortar and Concrete, correctly outlines the procedure for securing good results, but leaves a good deal to the discretion of the operator. As in the British Report, it is assumed that the weight of Portland cement per unit of measurement may be taken as a constant for the purpose of determining the proportions of concrete, the fact being that the density of cement varies considerably in actual practice. To draw up satisfactory rules for the proportions of concrete is a difficult task, in the performance of which the co-operation of practical experts would be of much value.

The notes in Part VI. on Details of Construction contain nothing to which exception need be taken; they do not enter into details very much, and have a strong family likeness to the recommendations published in numerous textbooks and magazine articles during recent years. The thickness of concrete outside the metal in beams and floor slabs is the same as that in the British Report, namely, 1½ in. for beams and 1 in. for slabs, the latter being a dimension that could be safely reduced. We are in thorough accord with the recommendations that concrete should not be used in imitation of other structural materials, and that surface rendering should be avoided—at any rate, on the exterior of buildings. However carefully applied, an outer coat of plastering is always likely to crack and flake off under the action of temperature changes.

Coming next to the question of Design, considered under various headings in Part VII., we find a statement of general assumptions relating to loads and internal stresses. It is admitted that the hypothetical data are not entirely borne out by experimental results. They are, however, the same as those almost universally accepted as being practically correct, and at the same time essential as the basis of formulæ on the straight-line theory, which is that accepted by the British Committee and leading authorities on the Continent.

In beams and slabs provided with an adequate bond at the junction, and together constituting tee-beams, the slab width considered as the upper flange of the beam is not to be greater than "one-fourth of the span length of the beam," and its overhang on either side of the web "shall not exceed four times the thickness of the slab." These rules are somewhat more conservative than the tentative recommendations of the British Committee.

For the design of floor slabs the American Committee have nothing to suggest better than a formula identical with one of those in the British Report. This equation is admittedly without theoretical or experimental basis. There was justification for its adoption by the Royal Institute of British Architects' Committee, that body having had practically no facilities for independent research, but something better should be forthcoming from a Committee, representing four important American societies, after three years of investigation and the expenditure of a large sum in experimental work. There are so many buildings in the United States with floor slabs suited to practical tests which could have been effected at nominal cost that one may reasonably be surprised at the perpetuation of the unsatisfactory formula now in question.

In sect. 6 the Committee state the values $M = \frac{wl^2}{12}$ throughout the length of continuous floor slabs and interior continuous beams, the value $M = \frac{wl^2}{10}$ being recommended for the end spans of continuous beams. These equations are preferable to those of the British Committee, which do not contemplate a value lower than $\frac{wl^2}{12}$ even for beams with imperfect continuity, and give the optimistic designer justification for taking $M = \frac{wl^2}{24}$ at the middle of a span assumed by him to be perfectly continuous.

We must point out at this stage the serious defect that neither set of rules takes any notice of the upward bending caused by the unequal loading of adjacent spans in slabs and beams intended to be continuous. In the absence of reinforcement near the top surface throughout the length of such members there may be serious risk of failure in cases where one span is unloaded and the others on either side are fully loaded, because the concrete in the middle portion is there left to withstand severe tensile strain without reinforcement of any kind. The oversight is a serious blemish in the American Report, and once again shows the disadvantage of excluding practical men from the work of formulating rules for practical use.

The recommendations in sect. 8 relating to shear and diagonal tension seem to be based on the experiments of Professor Talbot, but as characterised by the Committee are merely "general and tentative." They are more conservative than those of the British Committee, and properly so, because the average shearing stress of 60 lb. per square inch permitted by the latter in the case of a beam without web reinforcement represents diagonal tension of undesirably high intensity although not involving any risk of failure by shear itself. We endorse the advice of the American Committee to the effect that the average shearing stress for beams with horizontal bars only should not exceed 40 lb. per square inch for concrete of the average quality denoted. This limit gives a factor of safety of from 3 to 4, according to the quality of the concrete, while the higher limit suggests 2 to 2¾ as the value of the factor.

Under the subheading "Columns," the American Committee give general rules governing the design of columns without justifying their procedure by references

Digitized by Google

to actual data. In one place they say that transverse reinforcement in a column "has little effect upon its behaviour within the limit of elasticity," and a little way beyond they advise, for columns having both longitudinal and transverse reinforcement, stresses 45 per cent. higher than those for longitudinal reinforcement alone. This advice seems to be reasonable, but we should very much like to know whether it is put forward as a plausible conjecture or as having any substantial foundation. Another recommendation in the same section is to the effect that columns with reinforcement of bands or hoops (but, as we read it, without longitudinal bars) may be subjected to stresses 20 per cent. higher than those in columns with longitudinal reinforcement. This is a proposal which cannot be accepted as reasonable, for it implies that the transverse reinforcement previously characterised as having little effect is actually more useful than longitudinal bars. The section as a whole is unsatisfactory, and should be replaced by a series of recommendations based upon and justified by experimental results.

Part VIII. deals briefly with Working Stresses, which for concrete are based upon the average compressive strength of 2,000 lb. per square inch when tested at the age of twenty-eight days. If the concrete is of lower strength the stresses are to be reduced proportionately, and if of superior quality they may be increased up to the limit 25 per cent. The Report assumes that the compressive strength of 2,000 lb. per square inch coincides generally with the proportions of one part Portland cement to six parts of sand and aggregate. The British Report bases working stresses upon the compressive strength of 2,400 to 3,000 lb. per square inch at twenty-eight days, which is a rather high estimate for the 1:2:4 concrete apparently but not positively stated to be implied.

Assuming the 25 per cent. increase admitted by the American recommendations to be taken advantage of in accordance with the equalisation of compressive strength to agree with the British figures, the stresses permitted by the two Reports compare as follows:—

COMPARISON OF THE PROPOSED AMERICAN AND BRITISH WORKING STRESSES.

(American stresses based on concrete of not less than 2,500 lb. per square inch compressive strength.)

Nature of Stress.	Am.Soc.C.E.	R.I.B.A.
COMPRESSION.		
Bearing of surface larger than the loaded area	812·5	500
Axial, on plain column or pier	562 5	500
Axial, on column with longitudinal bars	562·5	500
Axial, on column with bands or hoops only	652·5	500
Axial, on column with longitudinal bars and bands or hoops	815·6	500
Beams	812·5	600
Beams near supports of continuous	910 0	600
SHEAR AND DIAGONAL TENSION.		
Pure shear	150·0	60
Shear combined with equal compression	...*	60
Vertical shear as the measure of diagonal tension	50·0	60
ADHESION.		
Between concrete and bars	100·0	100
Between concrete and wire	50 0	—
Reinforcement	160. 0·0	15000-17000
Ratio of coefficients of elasticity (m)	15·0	15

* Half the compressive stress allowed.

In comparing the foregoing values we find that the ratio m is taken in each case at 15, and that the American stress for steel is not far different from that stated in the British Report. The latter is not very precise as to what is meant by shear. If the term is limited to vertical shear as the measure of diagonal tension, then the American limit is distinctly preferable, and for other forms of shear is in general accord with recent experimental results. The values for adhesion may also be accepted as satisfactory.

The main points of difference are in the values of the permissible compressive stresses for concrete in columns and beams. Taking the case of a column fully reinforced with longitudinal bars and transverse bands or hoops, the American Report proposes to allow far greater latitude than that contemplated by the British Committee, and an equally noticeable difference exists in respect of the compressive stresses in the concrete for beams.

We do not say that the proposed American stresses are too high for the best class of work where the general design and the disposition of the reinforcement are beyond question and where the concrete has been proved by actual tests to possess the compressive strength of not less than 2,500 lb. per square inch at the age of twenty-eight days, which is equivalent to about 3,500 lb. per square inch at six months. But for ordinary construction with concrete of the quality vaguely denoted by the proportions of 1:2:4 any increase of working stresses beyond those of the Royal Institute of British Architects' Report is clearly unwise. As already pointed out, the main defect of the American proposals is that no data are quoted in support of the recommendations made. This is a matter which, we trust, will be rectified before the Report of the Joint Committee is issued in final shape.

We quite approve the principle that the permissible stresses should be made dependent upon the proved qualities of the concrete, for in that way only can justice be done to those who employ the best materials with an ample proportion of cement, while at the same time those seeking to reduce the cost of concrete will be compelled to reduce the working stresses in like proportion. It is obvious, however, that if the principle were generally followed, its adoption must be accompanied by rigid tests, the importance of which is not sufficiently recognised at present in architectural practice.

In an appendix to the Report formulæ are given for rectangular beams, tee-beams, web reinforcement, and columns. The equations are virtually identical with those of the British Committee, but go a step farther by including the consideration of compression reinforcement in both rectangular and tee-beams, and by giving tentative rules for the design of web reinforcement.

When compared with the Report of the French *Commission du Ciment Armé* the document prepared by the American Joint Committee makes a very poor show. We generally endorse the opinion of the minority that the Report as presented is not "in proper shape for a document to be submitted to a society composed of engineers."

There is no statement of investigations conducted, and consequently the recommendations are not traced back to any definite basis. Many sections read more like the clauses of a specification such as an engineer might prepare for the guidance of contractors than like the Report of a scientific committee. The part relating to design is of limited character, and could have been written three or four years ago much as it stands without the aid of protracted and costly investigation. Moreover, inadequate attention is devoted to recent progress and experience, thus making the recommendations on design anything but satisfactory for modern engineering requirements.

It is probable that the Report will be somewhat severely criticised by members of the influential societies concerned in its production, and we trust that the final outcome will be a Report showing clearly the nature of the work done by the Committee, presenting a well-considered series of conclusions derived therefrom and a more carefully prepared set of recommendations. Like the recently abandoned code of building regulations proposed for New York, this Report furnishes one more illustration of the fact that American regulations must not be blindly accepted as models for imitation in this country.

LOCAL GOVERNMENT REPORT—UNEMPLOYMENT.

THE thirty-eighth Annual Report of the Local Government Board on the Poor Law, the Unemployed Workmen Act, and the Old Age Pensions Act contains some very interesting statistics. Turning to that portion of the Report which relates to the Unemployed Workmen Act, we find that the number of applicants for assistance in 1908-9 was more than double the number registered in 1907-8, viz., 196,757, as compared with 90,057. The Report says this increase may to a certain extent be accounted for by the formation of fourteen new areas, the removal of the disqualification of poor relief and employment on relief works in two successive years. However this may be, the number of applications represented a rate of 11·7 per 1,000 of the population, as compared with 6·0 per 1,000 in 1907-8, which discloses a very serious condition of employment, and it is significant that 17 per cent. of those found qualified for assistance after investigation were returned as belonging to the building trade. The reports of the various inspectors contain some very suggestive remarks, and more than one of the inspectors raises the question whether relief works, and labour-yards kept open by guardians, do not tend to increase rather than diminish the numbers out of regular employment. Thus, for example, although the depression in the building trade has affected Plymouth, Devonport, and East Stonehouse, the former town shows a slight decrease in pauperism, whilst there is an increase in the two latter towns, yet at Devonport,

Digitized by Google

where the operation of Distress Committees has been restricted and the guardians have not opened a labour-yard, the number of applications has not exceeded that of the previous year, whilst at Plymouth, besides a repetition of the applications of the previous year, there was an increase in new applicants. Doubtless such considerations apply with more force to casual than to skilled labour.

In view of the fact that unemployment appears likely to increase rather than decrease, and that relief works will be maintained for a third year in succession, this Report should be studied with care by those concerned with unemployment, and also by those interested in the proposed labour exchanges.

NOTES.

Oxford-street.

ALTHOUGH from Tottenham-court-road to High Holborn, New Oxford-street has been absolutely closed to traffic for nearly three weeks, it is stated that no complaints of inconvenience have been made to the Borough Engineer of Holborn, by whom the work of reconstruction is being conducted. Some people may think this absence of protestation due to the futility of objecting to a necessary evil, but we are inclined to believe that there has in reality been little inconvenience owing to the fact that for east and west traffic an excellent by-pass is provided on the south side by the combination of High Holborn, Broad-street, and High-street, while Great Russell-street on the north side affords ready means of access between Tottenham-court-road and the Clerkenwell district. The opinion has been expressed that the entire renewal of the concrete foundation for the new asphalt involves needless cost and trouble. The fact seems to be, however, that the frequent cutting of trenches by the Post-office, water, gas, and electric-light companies, and other authorities entitled by law to dig up streets at will, has impaired the stability of the foundation as a whole. In view of that consideration, it is to be hoped that ample provision is now being made for conduits of all kinds by means of subways, so as to obviate the necessity for another new foundation in the course of the next twenty or thirty years.

Street Lighting.

POSSIBLY the upshot of the recent visit paid by a deputation from the City Corporation to several continental cities may ultimately have the effect of modifying some of the vagaries now represented by the electric-light standards discussed in our article of last week. The immediate object of the visit was to inspect various systems of street-lighting adopted abroad, and from the Report published we learn that the Committee have arrived at the conclusion that wherever possible streets should be lighted by centrally hung lamps with lowering gear, while for open spaces lamps on standards with lowering gear are recommended. Thus for streets we have a fresh method suggested for the suspension of lamps and a modified form of standard for open spaces. If adopted, these proposals will furnish incentive for renewed effort on the part of designers, and it is to be hoped with more happy results than those hitherto attained. As for the means of illumination itself, the deputation appear to have been much impressed with the marked efficiency of high-pressure gas with inverted mantles. So well satisfied are the authorities of Berlin with that method of lighting that it will be used exclusively in the future. When employed in the open air the objections attaching to gas quite disappear, and until the cost of electricity is very materially reduced, that means of illumination will have to fight very hard against the latest developments of gas-lighting.

Casualties in Building Construction.

A PAPER read to the International Association for Testing Materials by Dr. Fritz von Emperger, of Vienna, deals with accidents due to unavoidable and preventable causes, to the latter category being added mishaps in which ignorance, thoughtlessness, and carelessness play a part. As an example of the serious extent to which casualties occur, the author cites the records of the workmen's union for steel bridge and building construction in the State of Illinois, where, out of a total membership of 1,350 men, no fewer than 102 casualties took place in 1905, and 156 in 1906. These figures are sufficient to suggest the enormous number of accidents to workmen which happen every year throughout the entire world as the result of building operations. In discussing preventable accidents on reinforced concrete buildings, Dr. Emperger points out that errors in the construction of moulds and centring have been largely responsible for the failures reported, although the defective construction of columns, inadequate designs, and inferior concrete cannot be absolved from blame. An opinion stated at the end of the paper is to the effect that every country endowed with a good code of regulations with reference to reinforced concrete work has been exempt from considerable disasters in such construction. Although this view may seem unassailable, it is curiously at variance with the facts that in Great Britain, where no official rules exist for the control of building in reinforced concrete, there have been no serious failures, and that America and various Continental countries with regulations of the kind have so far held a virtual monopoly in reinforced concrete mishaps.

The Philadelphia Building Collapse.

BY the collapse of a building last month in Philadelphia seven workmen were killed, two others seriously injured, and twenty-five workmen and foot passengers more or less seriously hurt. The structure was a five-story brick and timber-framed building, and at the time of the accident was in course of reconstruction. From a report by the chief of the Bureau of Building Inspection we gather that the occurrence may have been due to one of four causes:—(1) The displacement of one of the shores by a steel girder which was being slung into the building just before the collapse; (2) the attachment of tackle to sills or the shoring to hoist this girder; (3) the removal of shoring to permit the girder to pass; and (4) the collapse of the fourth floor under the loading transmitted by tackle attached there for handling the same girder. The last of these theories is the most probable, since the floor in question was admittedly very weak and the tackle had been placed at the weakest point on the floor. Subsequent investigation by a coroner's jury led to the conclusion that the collapse was due to "the pulling out of joists, by vibration, due to concealed defects." This finding exonerates the contractors from blame, but is not very lucid as an explanation of the cause. The evidence brought forward showed the building to have been far more unstable than appeared from external examination, and suggested that the work of reconstruction was a very hazardous proceeding, although the risks were certainly not appreciated at the time when operations were started. It is really a very delicate and risky business to interfere with old buildings, and no such work should be undertaken until the most careful investigation has been made.

Effect of the Galveston Sea Wall.

IN our article of October 14, 1905, a detailed account was given of the great sea wall constructed to protect the city from a repetition of the destruction caused by the hurricane of 1900. Last month a very similar storm swept along the southern coast of Texas, killing twenty-three people and causing much damage to property. Proceeding from the Gulf of Mexico, the hurricane drove the waters of Galveston Bay against the new sea wall. Some of the waves washed over the crest and a portion of the city was flooded, but thanks to the protection offered and the levelling-up process which has been effected in the area behind, the result was merely inconvenience, instead of the wholesale devastation that would have been caused under the old order of things. Thus the important engineering work to which we refer has amply justified the anticipations of the designers, and the large population attracted by Galveston Harbour must feel renewed confidence in the defences of the sand spit upon which their city is built.

Queen-square, W.C., and Lamb's Conduits.

IT is believed that the tank or well-head in the garden of No. 20, Queen-square, to which attention has been directed by the sale of the property a few days since, appertains to the water supply of Grey Friars, Newgate-street. In later times Christ Hospital, on that site, continued to derive its supply from springs and conduits in the south-eastern parts of Bloomsbury—for instance, in Red Lion-fields, in the fields now traversed by Bedford-place, Russell-square, and in and near Lamb's Conduit-street. Fifty years ago there were in the garden of No. 30, East-street a pump and a spring, with an inscribed stone stating that it was "the head of the spring Lamb's Conduit Water." In 1577 William Lamb, citizen and clothworker, rebuilt the conduit (1497) on Snow-hill, and laid new pipes thence, at his own charges, to a conduit just beyond Great Ormond-

Digitized by Google

street, which bore his name and subsequently gave a name to Lamb's Conduit-street. After the building of the Foundling Hospital that well-head was shifted (1746) to the yard of the adjacent "Lamb" public-house, where, in 1851, J. W. Archer found beneath the pavement a short flight of steps, a bricked vault, and the covered well; his drawings of the remains in Long-yard and East-street are in the British Museum. On the gable-end of a house in Long-yard is, or was until lately, indication of a bricked-up recess with an inscription carved in the lintel, "Lamb's Conduit; the property of the City of London. . . ." Lamb's two conduits were rebuilt in 1677 from designs attributed to Wren.

Forest Fires Again.

ONCE more widespread conflagrations have broken out in the pine forests of British Columbia. Timber to the value of many hundreds of thousands of pounds has been consumed, in addition to numerous lumber mills. The serious nature of the situation will be realised when we state that according to latest reports two towns were threatened by an advancing wall of flame at least a mile wide; that Fernie, burnt up and rebuilt last year, is again surrounded by fires; that the forests about Creston are blazing fiercely, having driven the inhabitants to seek refuge elsewhere, that the woods on the side of Arrow lake are rapidly being destroyed, and that bridges on the Canadian Pacific and the Great Northern railways have been burned wholesale. The task of fighting extensive fires when fairly started is almost hopeless in dry weather such as now prevails in Canada. The worst of these outbreaks is that in a few hours the growth of many years is literally wiped out, involving heavy pecuniary losses and leaving wide gaps in the timber resources of the country.

The Abbey Pulpit at Shrewsbury.

THERE is visible at Shrewsbury so much appreciation of the value of architectural remains of the past that it is surprising that some measures have not been taken to remove the fine stone pulpit which now stands in a builder's yard opposite the Abbey Church into the precincts of that building. Probably for the time being this interesting mediæval relic is safe enough, but its position in the middle of bricks and drainpipes is very incongruous and even unseemly. All round the Abbey Church there is ample space, and the time seems to have come when an effort should be made to vest the property in this pulpit in some public body and safeguard it for all time. Here is another useful task for that invaluable body the National Trust, if local energy cannot accomplish it.

COUNCIL SCHOOL, SELLY OAK.—The infants' and girls' departments of the new school erected in Raddle Barn-lane, Selly Oak, by the King's Norton and Northfield Urban District Council, has been opened. The school has been built in three blocks, and has accommodation for 1,200 children, each block holding 400, and in addition there is a centre for the teaching of cookery and laundry work. Each department consists of a central hall, seven classrooms, two teachers' rooms, and the usual storerooms. The cost per head is 10*l.* 15*s.* The architect was Mr. J. P. Osborne, Birmingham, and Mr. Johnson, Birmingham, executed the work.

COMPETITION FOR EXTENSION TO STOKE TOWN HALL.

STOKE-UPON-TRENT, which is generally looked upon by the public as the capital of the Potteries, though in reality Hanley is the largest town, possesses a Town Hall of some considerable size, containing the municipal offices on the ground floor and a large assembly-room on the first. It is situated in Glebe-street facing the open space which surrounds the parish church, and it is bounded on either side by two streets, Tower-street and Aqueduct-street, which lead down to a canal forming the fourth boundary of the plat. The Town Hall, which is a shallow building, only fills a small portion of this site, showing short end features to Tower-street and Aqueduct-street, and it is proposed to continue the frontages on either side, filling in the space between the Town Hall and the canal with new buildings. The main requirements for this competition were very similar to those at Burslem, that is to say, a large concert hall, a small hall, and a court-room; there was to be in addition a banqueting-room on the first floor placed in direct communication with the existing assembly-room on the front of the old building. It will be then seen that the present competition has no connexion with the proposed scheme of federation, as there are to be no additions to the municipal offices proper, which remain quite adequate for a town of the size of Stoke.

The existing Town Hall is a Greek revival building with an arcaded ground story (which was originally an open market) and an upper story treated with antæ pilasters and with an Ionic portico over the main entrance in the centre of the Glebe-street front.

Mr. Leonard Stokes was the assessor, and he has placed first the design submitted by Messrs. Garratt & Simister (Birmingham); second, Messrs. Warwick & Hall (London); and third, Mr. W. Heywood (Birmingham). In the conditions issued there was one flaw which will probably lead to considerable unpleasantness, and has already led the committee appointed to look after the competition to refuse to endorse the assessor's award. The clause was as to the cost of the building. It was to cost 30,000*l.*, and in place of the usual 10 per cent. or 5 per cent. margin, it was vaguely mentioned that any design that "materially exceeded" this amount would be disqualified. It was left to the discretion of the committee as to what "materially" meant—to a cabman 6d. is a material difference, but in a building of this size 2,000*l.* is a small matter. Mr. Stokes, in his report, pointed out that he did not think that any of the designs could be carried out for the money, and with this we agree; considering that the building was only to cost 5,000*l.* more than the Burslem one, one can hardly expect that it would provide accommodation for 1,000 more in the large hall, also a banqueting hall and four additional committee-rooms. The committee, however, having obtained estimates of some sort, have adopted the course of disqualifying the first and third premiums and awarding the second premium to the second, without definitely saying whether Messrs. Warwick & Hall will be entrusted to carry out the work. The second is certainly a more economical plan, but the whole affair is most unsatisfactory.

As regards the general disposition of rooms, the three premiated designs and many others, including those submitted by Mr. Hare and Messrs. Russell & Cooper, agree pretty closely. The large hall is placed at the back of the site towards the canal, its axis parallel to the old building. The space in between is cut into equal halves by a corridor leading from the main entrance of the old building to the centre of the side of the great hall. On one side of this corridor are placed the small hall with its committee-rooms, on the other the court with its various dependencies. The banqueting-room is placed on the first floor on the other side of the existing staircase hall, which would have to be crossed in order to walk from the existing assembly-room to the banqueting-rooms. This arrangement allows each separate division to be approached from the main entrance of the old building, and also separately from the two side streets. Perhaps Messrs. Warwick & Hall's plan, which we illustrate this week, *is* the simpler and more direct of those placed first and second. On to Tower-street, the more important of the two, open the small hall and the great hall; the court on to Aqueduct-street; at the four corners of the court and small hall are grouped the committee-rooms, and two are on the first floor, served by the stairs leading to the small hall gallery; there are four moderate sized areas. The elevations are naturally irregular. We feel it far fetched to attempt, as Messrs. Lanchester & Rickards and Mr. Hare have done, a symmetrical elevation to Tower-street by dint of making the hall behind a small, narrow feature, in reproduction of the end of the old Town Hall.

Messrs. Garratt & Simister place the small assembly hall on the Aqueduct-street side, but they show no entrance from this street, and it is therefore only possible to enter it from the old building, which is a drawback. We prefer the other disposition, with the court entered from Aqueduct-street and both halls from Tower-street. Again, considering that money was a great consideration, far too many small rooms are added to the court block—double witness-rooms, barristers' and solictors' separate, and a juryroom, all in addition to the spare rooms asked for. The elevations are rather better in detail than Messrs. Warwick & Hall's, but four features, two large and two slightly smaller, are too many for this short front (in addition to the existing end of the Town Hall), and produce a bad composition.

Mr. Heywood's scheme resembles No. 2 in general plan, and No. 1 in grouping on elevation; but we could not see that he had provided the four spare committee-rooms asked for. This omission greatly simplified the problem.

Messrs. Lanchester & Rickards, while adopting the same general disposition, of parts, made their hall semi-circular, with the centre of its arc not facing the main entrance in the side street, but down the long corridor into the old building. Both side streets have an entrance into the hall, but that from Aqueduct-street would be only useful as an emergency exit. The hall would then be normally entered at the extreme corner of its arc. But worse is the effect of the elevation to Tower-street—the only elevation worth accentuating. The end feature of the old building is exactly repeated, but behind this comes the unwieldy cut-off end of the great hemi-cycle with a cupola poised on its truncated side. The elevation to the canal, where the whole of the hemi-cycle is marked by a parapet wall and the cupola appears on the top of the stage apse, is the only piece of design that recalls the authors of the great Methodist Hall.

Perhaps from the point of view of elevational treatment, Mr. J. B. Fulton's design is the most satisfactory. His plan is almost identical with the one he submitted for Burslem. The large hall lies along the Tower-street side, and the court and small hall are placed side by side on to Aqueduct-street. This latter arrangement is not good, and the main central corridor has to be joggled to one side in order to obtain the necessary width for the large hall. But the effect to Tower-street, with continuous crush space, cloak-rooms, etc., on the ground floor and an open colonnade above carrying on the cornice and pilaster order of the old building, and making the addition one simple block instead of various, odd-shaped masses, is unmistakably fine.

Messrs. Russell & Cooper's design was far inferior, both on plan and elevation, to their Burslem design, illustrated in our last issue.

Digitized by Google

There were eighty schemes sent in for this competition, and they have been on view in the Stoke Town Hall during the present week.

REINFORCED CONCRETE IN ALDWYCH: GENERAL ACCIDENT ASSURANCE BUILDING.

THE new office building of the General Accident Assurance Corporation will occupy an irregular site measuring about 126 ft. deep, with a frontage of about 112 ft. at the eastern end of Aldwych. It will be a steel frame building with self-sustaining masonry walls and fire-resisting floors, some of reinforced concrete, and some of terra-cotta tubular blocks carried on steel joists. The foundations for the entire structure are of reinforced concrete, and so also are two retaining walls, one along the street front, and the other

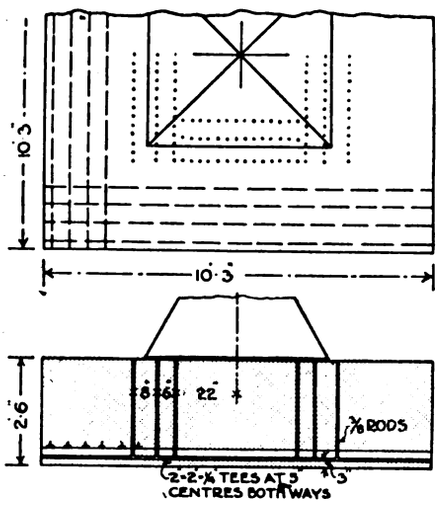


Fig. 1.

extending for part of the way across the back of the site.

In this article we confine attention to the reinforced concrete work, which is being executed by the British Fireproof Construction Company, but it should be stated that the steel framework is also in the hands of the same firm. The architect is Mr. John J. Burnet, A.R.S.A.

All the column foundations are of reinforced concrete, so also are the foundations for the western main wall, while the whole interior area between the main walls and around the column foundations is covered by a raft of reinforced concrete. Although the raft is continuous in every direction it comprises four bands crossing the site from side to side, these bands including nearly all the column foundations, and virtually constituting beams with the minimum thickness of 18 in. Between them the slabs are 16 in. thick. The reinforcement for the raft consists of small T-bars ranging in dimensions from 1½ in. by 1½ in. by ¼ in. to 2 in. by 2 in. by ¼ in.

Fig. 1 shows a typical column foundation in plan and section. This foundation is designed for the load of 284 tons, the dimensions of the other foundations varying in accordance with the loads to be supported. The reinforcement consists of T-bars, with the addition of ⅜-in. diameter vertical rods spaced as indicated on the plan.

The foundation for the west wall is illustrated by Fig. 2, wherein one section carries the wall alone and the other provides for the support of a column in addition. On the occasion of our visit to the works, the foundations were complete, including the formation of lift wells and various ducts in the basement floor. The area of the raft is nearly 1,000 sq. yds., and we were informed that the time occupied in the construction of all the foundations was only twenty-one working days. We may add that the present is a favourable time for architects to inspect the work, as a very good bird's-eye view of it can be obtained from the elevated staging along the front.

Details of the front retaining wall, the construction of which is now being started, are given in Fig. 3. In this case the reinforcement is in the form of ordinary round bars, disposed in the customary manner. It will be observed that the inner flange of the foundation is extended to meet the general foundation raft, and that the top of the wall is connected with members of the steel framework by rolled steel joists, over which is constructed a continuous decking of reinforced concrete.

Some of the floor panels will be filled in by slabs formed of 1: 6 boiler ash concrete reinforced by 1 in. by 1 in. by ⅛ in. T-bars

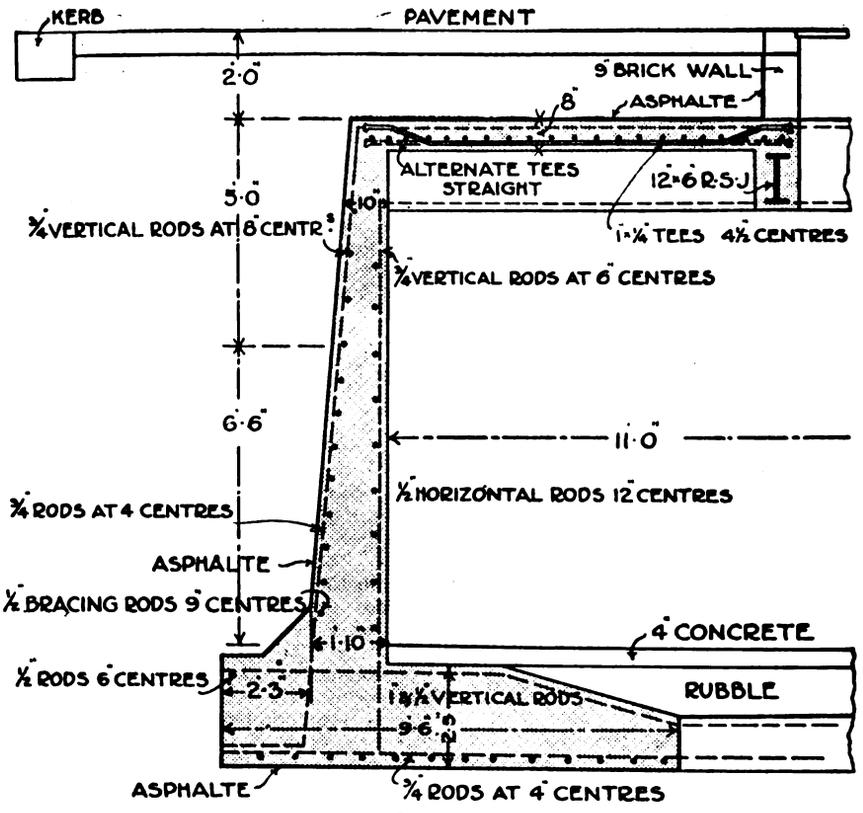


Fig. 3.

spaced 6 in. apart, the bars being curved upwards and bent over the supporting girders as illustrated in Fig. 4. The weight of the reinforced concrete floor slabs is 48 lb. per square foot for the thickness of 6½ in., and 62 lb. per square foot for the thickness of

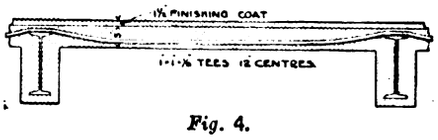


Fig. 4.

8½ in., these weights and measurements being inclusive of a 1½-in. finishing layer in each case.

Other floor panels in the building will be formed of light joists carrying hollow terra-cotta tubes by which the lower flange of every

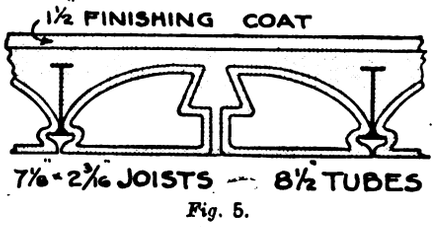


Fig. 5.

joist is adequately protected. As shown in Fig. 5, the tubes are covered by a filling of 1: 6 boiler ash concrete, and the floor is completed by a finishing coat of concrete.

The works here described constitute an interesting application of reinforced concrete in connexion with ordinary building construction, and show that the rival claims of steel and the newer material are not invariably of conflicting nature.

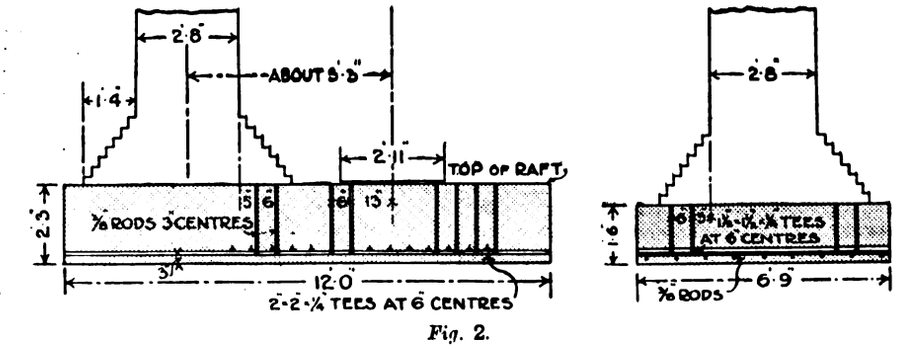


Fig. 2.

BATHS EXTENSION, ALTRINCHAM. — The Altrincham District Council have now completed the extension, at a cost of about 4,000*l.*, of the Stamford New-road Baths. The original baths were opened in 1901, and a new plunge and eight private baths have been added. The extension was designed by Mr. P. D. Lodge, architect, of Manchester.

Digitized by Google

PUBLIC BUILDINGS AT BURSLEM.

AN open competition for new public buildings has been held at Burslem, one of the federated towns in the Potteries. These buildings are not to provide municipal offices, though the present housing of certain departments would suggest that they are wanted; nothing, however, we imagine, will be done in that direction until federation takes place next March; but they are to fulfil a three-fold object—a large municipal theatre or concert hall, an assembly-room, and a series of court-rooms. There is already a Town Hall at Burslem, an old classical building with offices on the ground floor and a hall above—what precisely these will be used for with the new concert hall as proposed in this competition, and the new federated offices at some central town, remains to be seen. The old building is rather a fine block, consisting of a restricted and battered basement and a single order of Corinthian pilasters above, without attic; the worst feature is a tower at the far end, of ragged outline. The site for the new building is near the Town Hall on the other side of Wedgewood-place, on to which the end of the Town Hall without the tower looks; but, instead of having an uninterrupted view of each other, these two public buildings are separated by a Police Station and Market Hall, which jut out into Wedgewood-place, and cut off half of the front of the proposed building from the Place.

The Police Station is negligible, but the Market Hall is an old Greek Doric building of some interest but inferior detail; the actual market is held under cover on the opposite side of the market place. It would therefore seem quite probable that at some future date it might be decided to sweep away these two buildings and leave an unbroken view of this new building from Wedgewood-place, facing the Town Hall. This point, which was not raised in the conditions, had an undoubted effect upon the general treatment of the building. The large hall, the assembly-room, and the courts were the three items to be dealt with; the two latter were of about equal height, and the large hall the preponderating mass. If the Market Hall and Police Station were to be removed it would be natural to treat the building as a single whole, with the hall manifest in the middle and the assembly-room and courts balancing at either side. But if the Police Station and Market Hall are to remain, this symmetrical arrangement would immediately become futile, as a fragment of a one-story building alone would be visible from Wedgewood-place. The site was otherwise an easy one to treat, as it was bounded, besides the Place, on two other sides by streets, and on the fourth it adjoined the Post Office, from which it might be separated by an area.

The conditions were admirably general in tone, giving an idea of the requirements wanted, but not stipulating actual areas, and leaving materials and design absolutely to the discretion of the competitors. The remuneration clauses were particularly fair and clear, giving 1¼ per cent. to the first premiated in case the work was not proceeded with in the course of the next five years, and 100*l*. and 50*l*. respectively to the second and third premiums. The plans were wisely allowed to be drawn to $\frac{1}{16}$-in. scale, but the elevations were restricted to ⅛-in.; not so wise was the prohibition of any shaded drawings, as classical architecture makes but a poor show in thick black lines only.

The actual requirements included a concert hall to seat (with galleries) 2,000, with a stage; an assembly-room to seat 400; two court-rooms, one for police and the other for a borough court, and a smaller room for a children's court, with one suite of magistrates', solicitors', and other retiring-rooms to serve all three courts; finally there was to be kitchens, etc., conveniently situated for the assembly-room, which would be used on occasion for banquets.

The assessor appointed by the Institute of Architects was Mr. H. T. Hare, and out of the twenty-three sets submitted he awarded first premium to Messrs. Russell & Cooper, second to Mr. E. M. Thomas, and third to Messrs. Warwick & Hall.

The first and second were very similar in general arrangement; Messrs. Russell & Cooper, whose design we published in our last issue, placed the central hall in the middle, with its main axis at right angles to Wedgewood-place, flanked on the left by the assembly-room and on the right by the courts; outside these again there were lower buildings, encircling, and containing cloak-rooms on either side of the entrance to Wedgewood-place, and various retiring-rooms, etc., on the sides. The object of the whole building is apparent from the outside—the central hall faced by an Ionic portico in antis and standing up clean above the other buildings; the smaller assembly-room and courts evident on either side above the lower corridor and service-rooms. Advantage was taken of the slope of Wedgewood-place towards the Post Office to gain greater height for the court-room, and a mezzanine floor for the magistrates' room, which are placed under the ladies' cloak-room, which balances the gentlemen's cloak-room on the left of the entrance. The treatment of the front to Wedgewood-place is Greek in detail, and would harmonise well with the Town Hall if the two buildings could be seen at once. This design has shown the wisdom of leaving the architect a free hand as to his choice of style and allowing him to be governed by the only real restriction—the requirements of the actual position in relation to its surroundings. The drawings of this set are not striking, and a poor perspective by no means does justice to the proportion of the front.

Mr. E. M. Thomas's scheme, which we illustrate this week, as we have already remarked is similar on plan to the first, but he has put a great deal more detail into the law courts' section, which seems to us rather needlessly broken up into small parts.

Messrs. Warwick & Hall have placed their main hall to one side of the site, and we suppose, in order to make the best show possible, have put it at the upper end, looking into Wedgewood-place, whereas the law courts, being on the lower ground, appear doubly low in consequence. The result entirely depends on the permanent retention of the Police Station and Old Market Hall. Their main entrance to the hall is not from the end, but the side towards Jenkins-street, which is not so good; but they have certainly provided a more ample court space than Messrs. Russell & Cooper, whose plan is deficient in this respect. The vast bulk of the hall on to Jenkins-street gives too much importance to the elevation, which might have been simplified without any loss.

Mr. J. B. Fulton rather threw away the value of his big hall by placing it at the far side of Wedgewood-place and parallel to it, thus showing a low range of buildings along the front crowned by a low and rather ugly dome over the entrance vestibule, which separated the courts from the assembly-hall.

Messrs. Mackintosh & Neumann adopted yet another arrangement by placing the central hall in the middle of the site, parallel to Wedgewood-place, with courts in front and assembly-room behind. Their main elevation is thus given to Jenkins-street, which is misplaced; and the front to the Place is confused and wandering.

There are several designs by local architects not calling for special mention, and we understand that one or two other schemes were disqualified for infringing upon the conditions in using traces of wash on certain drawings.

HOUSE AND STUDIO, COBHAM.—Plans for the erection of a new house and studio at the corner of Anyards and Freelands roads, Cobham, for Mr. Hugh West, photographer, of Cobham, Surrey, have been approved by the Epsom Rural District Council. Mr. Drinkwater Butt is the architect.

NOTES FROM PARIS.

IT is announced that the Colonial Office will be definitely removed from the Louvre in October, and that the Pavillon de Flore, which it has occupied for so long, will be at last available for the enlargement of the Museum. It is proposed to arrange here the collection of pictures and other works of art left by MM. Chauchard and Thomy-Thierry, as also that given by M. Moreau-Nélaton, the sculptor. Sculpture, ceramic work, and applied art will be placed on the ground floor. On the first floor, on the side next the river, a long gallery will be reserved for large pictures, and on the side next the Carrousel a series of small galleries will be formed for cabinet pictures and other small objects. The second story is to be reserved for other works that may in future be presented to the Louvre.

According to a decision of the Municipal Council of Paris, a large subterranean hall is to be formed under the Place du Hâvre, in front of the courtyard of the St. Lazare railway terminus. This will contain shops and booking-offices in connexion with the different State railways and the Metropolitan railway.

In the new buildings for the Bibliothèque Nationale, built along the Rue Vivienne from the designs of M. Pascal, the old "Cabinet du Roy" is to be reconstructed, with its woodwork, its ceiling, and its original Louis Quinze furniture.

The four large decorative pictures by M. Besnard, painted for the central dome of the Petit Palais, are to be put in position next month.

The Académie des Beaux-Arts has awarded the annual Jean Leclaire prize, this year, to M. Henri Expert, pupil in the First Class in Architecture at the Ecole des Beaux-Arts.

THE HYDRATION AND HARDENING OF PORTLAND CEMENT.

M. PAUL ROHLAND has during the past few years contributed largely to the chemistry and technology of this subject, and the following is a digest of the conclusions he has reached and published to the present time. Hydration reactions, whether organic or inorganic, take place spontaneously, and their velocity is very much affected by small quantities of foreign matter and by temperature. Hardening does not always accompany hydration—quicklime, for instance, falls to powder; it is, therefore, due to some special circumstance. He believes that a solid solution is formed in all cases where hardening accompanies hydration. The hastening or slowing of hydration, whether of gypsum or of Portland cement, by salts he views as a result of a change of the solubility of the solid substance which is undergoing hydration. The substance undergoing hydration must first pass into solution before hydration takes place. Sodium carbonate and aluminium salts increase the rate of hydration; moreover, the increase produced by pairs of salts, such as sodium carbonate and aluminium chloride, acting together is considerably greater than would be expected from a summation of their individual effects. On the other hand, when two salts, such as bichromate of potash and borax, each of which taken alone produces a retarding influence, are allowed to act together the retardation is less than can be accounted for by adding together the effects due to each one separately.

These fundamentals Rohland has used to explain the action of acid, alkaline, and fermenting liquors on Portland cement. The surface layer of hardened Portland cement consists chiefly of calcium hydroxide, coagulated silicic acid, and aluminium hydroxide, crystallised calcium hydroxide, and calcium carbonate formed from the last. It is to be expected that the rapidity with which solutions attack Portland cement should vary according to the concentration of hydrogenions

Digitized by Google

in such solutions, or, in other words, in proportion to their acidity. Strong mineral acids which form soluble calcium salts readily act on Portland cement; in the case of acids which form insoluble calcium salts, such as sulphuric, sulphurous (which readily oxidises), and hydrofluoric acids, the cement becomes covered with a protecting coat.

Acetic acid attacks Portland cement considerably. The presence of organic substances retards the action of strong acids on Portland cement very materially. Solutions containing hydroxylions—in other words, alkalies, as contrasted with the acids hitherto referred to—have no effect on hardened cement, and exert a favourable effect on cement which is in the process of setting. In the presence of water the calcium silicate and aluminate in the cement are hydrolysed to calcium hydroxide, and colloidal silicic acid and alumina; owing probably to increase of hydroxylions the silicic acid and alumina become coagulated, thereby protecting the cement from further action. By addition of alkali (potash, soda, lime) the concentration of the hydroxylions is increased, the hydrolysis of the calcium compounds in the cement being thus diminished. Salts that are hydrolysed by water have an unfavourable action on cement if they consist of a strong acid and a weak base; if they consist of a weak acid and a strong base they exert a favourable influence at the beginning of the setting process, and subsequently have no effect. Alkali carbonates belong to the latter class, and present a special advantage in that they form a protecting layer of calcium carbonate.

Non-hydrolysable salts, provided that they do not react with the ingredients of the cement, have no effect on hardened cement, *e.g.*, chlorides and sulphates of sodium and potassium.

Organic liquids which contain neither hydrogen nor hydroxylions, such as shale and mineral oils, have no action on hardened cement; it must be remembered, however, that such liquids may become acid by oxidation. Oils containing fatty acids are, of course, injurious, although it has been observed that rich cement mortar—one to one—especially when it becomes covered with calcium carbonate through hardening in the air, is very resistant to these liquids. With regard to wine musts, the organic acids present are so slightly dissociated that these liquids have practically no effect on Portland cement; the same is true if the phosphoric acid and the sulphuric acid forms a protecting coat.

Owing to the presence of various acids beer attacks Portland cement; moreover, the carbon dioxide forms bicarbonate with the calcium hydroxide. Hence, unless great care is exercised, cement cannot be recommended as a material for vessels for storing beer. Water from hot springs containing sulphur should not be conducted through tubes made of cement, since these are liable to be attracted by the sulphur. Some metals, such as lead, when placed in contact with cement, exert an injurious action on the latter. Cement surfaces may be rendered less porous by saturating them with water-glass solution, hydrofluosilicic acid, fluosilicates, stearic acid, or paraffin wax dissolved in petroleum ether.

Clays and cements absorb and retain complex colouring matters, such as the aniline dyes and carmine, whilst they allow simpler compounds, such as copper sulphate, to diffuse. It is suggested that clays and cements form colloidal hydrates with water—*e.g.*, hydrates of silicon, aluminium, and iron—and that these, owing to their large surface, have high absorptive power.

P. Rohland has further examined the validity of the rule advanced by him first in 1903, and mentioned at the beginning of this digest, that the rate of hydration of calcium sulphate is increased by the addition of substances which render it more soluble, and decreased by those substances which lower its solubility. No exceptions to the rule have been discovered, but certain salts, such as sodium chloride and ammonium sulphate, are found to affect the solubility of calcium sulphate, according to their concentration, in opposite directions, and they may be made, therefore, to hasten or retard its hydration. Hydration takes place in solution only, and, as the solubility of the hemihydrate is much greater than that of the dihydrate, the solution becomes supersaturated as regards the latter, which, therefore, separates as a solid, and this process necessarily takes place more rapidly in the presence of any substance capable of increasing the solubility of the hemihydrate.

Gypsum is less soluble in dilute solutions of sodium, ammonium, and magnesium carbonates than it is in water, whereas it is more soluble in strong solutions. Hydration is retarded by dilute solutions and accelerated by strong ones.

ALMSHOUSES AT LYFORD, BERKS.

A VERY interesting group of almshouses of a humble and unpretentious type are those at Lyford, about six miles from Abingdon, in Berkshire. The buildings are of brick, and are quadrangular in form, the chapel being on the west side. The charity was originally founded in 1611 by Oliver Ashcombe, a native of Lyford, for the poor of East and West Hanney and Lyford. The revenue is now 300*l.* per annum. Each of the twenty inmates receive four shillings a week.

SIDNEY HEATH.

THE ARCHITECTURAL ASSOCIATION.

SYLLABUS OF MEETINGS.

WE have received from the Architectural Association the curriculum of the School of Architecture for the coming session, from which we extract the following syllabus of meetings:—

1909.

October 8.—Annual General Meeting: President's Address and Distribution of Prizes. Mr. Henry Tanner, F.R.I.B.A., President.

October 22.—The Architectural Association Excursion to Cheltenham and District, 1909, by Mr. F. Dare Clapham, F.R.I.B.A.

November 5.—Drainage and Sewage Disposal, by Mr. W. D. Scott-Moncrieff.

November 19.—Architecture of the Incas of Peru, by Mr. C. Reginald Enock, F.R.G.S.

November 24.—Conversazione at 8 p.m.

December 10.—Varallo, Orta, and Varese, by Mr. F. C. Eden.

1910.

January 14.—A Comparison between English and Continental Ornamental Ironwork, by Mr. J. Starkie Gardner.

February 4.—Renaissance Church Architecture in France during the XVIth Century, by Mr. W. H. Ward, A.R.I.B.A.

February 18.—The Life and Work of William Butterfield, by Mr. E. Swinfen Harris, F.R.I.B.A.

March 4.—The Mediæval House, by Mr. J. Alfred Gotch, F.R.I.B.A.

March 18.—Filippo Brunelleschi and the Renaissance, by Professor Beresford Pite, F.R.I.B.A. Nomination of Officers.

April 29.—The Architecture of Bath, by Mr. Mowbray A. Green, F.R.I.B.A. Election of Officers.

May 5.—Members' Dinner.

THE SUPERVISION OF BRICKWORK.

BY A CLERK OF WORKS.

IN the majority of buildings that have been and are being erected the greater part of the walls are brick. If the elevations are of stone or terra-cotta, these will be brick backed. Supervision in some trades and classes of work only occupies a small proportion of the whole time of the contract, such as plumbers' and slaters' work, but with brickwork it commences soon after the

Almshouses at Lyford Berks

Digitized by Google

commencement of the contract and continues often for some time after the building is covered in. At no time during that period must the vigilance of the clerk of works diminish, as it is equally as important properly to supervise the top brickwork of the building as it is to watch and check the materials and workmanship of the bricklayers in the brickwork of foundations and footings, etc.

The materials themselves will first engage the attention of the clerk of works, and too great care cannot be given to the selection of the bricks. The builders will submit samples of those they propose to use both for common brickwork and for the several kinds of facings. These last will be more particularly described in the specification, where the height four courses are to rise either laid dry or in the work may be specifically mentioned, or, if not, this point will receive urgent consideration in approving of a sample, this particular is the more important where stone dressings, etc., have to bond in with the facings, such as for instance string courses or window-sills, or mouldings of stone jambs to openings breaking out into knees near sill or head, where the thickness or height of these is designed to be the height of a certain number of courses laid. From this it will be seen that thickness of the bricks is most important for the facings, and equally so for the common bricks used for backing up and general walling purposes, as each have to bond in with the other, and variation in thickness will mean an inequality of the mortar joints, which is very undesirable. Width and length will also have to be considered. The working length of a brick is best when it is twice the width plus a mortar joint; that is obvious.

It is unwise to accept the actual sample submitted by a builder, though as regards colour and substance it may be excellent; but the clerk of works is advised to visit the brickworks and inspect the stacks, etc., for himself. By so doing he can see for himself if the sample submitted is a fair sample of the bulk as regards colour, quality, and dimensions. This last is as important to good work as the other two. As regards thickness, mention has been made of this above, and width has been incidentally spoken of also. The length calls for further attention, particularly in facings. If they are not all of one length (within the smallest of variations), difficulty will be encountered in keeping the perpends, and one of the most noticeable of bricklayer's errors is failure to keep these; and nothing looks worse. In above a small variation is mentioned as allowable; this is but reasonable, seeing that bricks are but a manufactured article of clays, all of which do not shrink uniformly, even if from the same district or even the same pit; and variation will ensue from the various degrees of temperature to which the several parts of the kilns, etc., are subjected. Still, the variation in lengths should be but small, as it is most important to keep true perpends, and, to ensure the trueness of these, the bricks, if varying greatly in their length, must be cut or filed.

Besides looking to uniformity of colour, their good quality and dimensions, trueness of shape, and straightness of arris must be thought of, too. Bricks, concave or convex on plan, on facing side are objectionable; it renders it more difficult to do true work, as it is less easy for the bricklayer to work true to the line, and also to build the wall plumb under such conditions. The same former difficulty is experienced when the bricks are hollow or rounded on bed, and the appearance is spoiled by a series of miniature switchbacks in the arrises of the bricks; particularly is this so where the mortar joints are wide and the weatherstruck joint is deeply set back, say 45 deg., or equal to the thickness of the joint.

Still, a further consideration is necessary—the output of the suggested bricks. The quality and colour, and, in fact, every desirable condition and characteristics of good bricks attain, but it would be the height of folly to approve of a brick (for a large contract) that is only manufactured in comparatively small numbers and no stock is kept to draw against. An accident in the making would mean delay that the contractor could ill afford and the architect or building owner not desire.

A few words may perhaps here be said on what would govern the selection of the bricks as regards quality and fitness for the proposed works. They should be regular in shape and size, with good straight and sharp arrises, and free from lumps, flaws, and cracks of all kinds. The lumps may be particles of free lime, which under moisture would expand and damage the work in which the bricks containing them are built; and cracks, though small at first, may extend and make bats of what were put in as whole bricks, to the detriment of bond; as also, if in the facing, they will show dark black lines when weathered in the wall, thus spoiling the appearance.

For practical tests, the sound emitted by striking two together gives a rough idea of their fitness, their soundness, and the thoroughness of burning—a clear ringing note from those well burnt and sound, and a dull note from one underburnt or cracked. A load of good bricks tipped up from the cart should yield but few bats; if large numbers result from such shooting out of carts, many more are likely to result from the several handlings on the job; the bricks are too soft, cracked, or underburnt to make good work.

The mortar and the materials from which it is made will require attention. The specification will define the proportions, and the clerk of works will be constantly on the alert to prevent an overabundance of the cheaper ingredients of the mortar. The specification will also prescribe the kinds of lime and sand to be used, and the clerk of works will note that those specified are delivered. For mortar, pit sand is preferable to river sand, as it is more sharp as a consequence of its grains being angular in shape, as against the rounded shape of those of river sand; but the former is likely to be less pure than the latter, often containing loamy or foreign matter, which will prevent that complete union of sand and lime which is essential to good mortar. Sand is occasionally unobtainable in or near the locality of the works, when the builders may propose substitutes, such as furnace slag, coke breeze, or burnt ballast to be ground in a mill. In such a case the clerk of works will obtain his architect's instructions. In order to ensure the correctness of the gauge the ballast, or whatever is used, should be ground separately first, as its bulk before and after grinding will differ. In mill-ground mortar the clerk of works will see that it is not overground. Testing mortar requires a chemical analysis, which clerks of works cannot be expected to undertake, but if the clerk of works has had previous knowledge of the same lime, he will be able to judge the correctness of the mortar on a later job. If on his prior job, where he meets this particular lime, he beds a brick on the face of a wall with the mortar made from such lime, and supports such brick until the mortar has set, and then adds another brick to the face of the last, and so on until the weight of the bricks becomes too much for the mortar to carry, he can by a similar test on a subsequent job ascertain within a fair degree of accuracy the quality of the mortar being used on that works from the knowledge he obtained from his first test with the same lime (and proportions) on the previous contract. Another point for his observation and action is that only sufficient for the day's consumption is used, and any left over should not be allowed to be knocked up and reused, and equally so with cement mortar. This last should only be mixed in small quantities, and also that which has been made up over an hour, or which has commenced to set, should not be used or knocked up again and reused. All sand used for cement mortar should be washed. It is not proposed here to make any remarks on the quality of the cement, its testing, or its storage.

Leaving the materials used by the bricklayer, and coming to the actual work, one of the chief points calling for attention is the proper flushing up of the joints. This is most essential if good solid work is to result, and when bricks have large frogs (and this is generally the case with glazed bricks), if the bed of mortar spread is not of sufficient thickness to fill same when the brick is "shoved" into its position, then the clerk of works will insist on the bricklayer filling up such frogs before the bricks are laid It will be easier for supervision if he insists on the frog side of all bricks (if only one frog) to be laid uppermost. Grouting should never be resorted to when the joints are large enough to fill up properly; but, of course, for gauged work, etc., it has to be allowed.

If the concrete foundations have been put in roughly and the top is not level, the bricklayer putting in the footings may have to lay the bricks on edge or to cut the bricks if they are to be laid flat. This would, of course, be obviated if proper supervision had been given to the concrete work.

In order to prevent the bricks soaking up the water from the mortar, and to remove any dust which would be injurious to the setting properties of the mortar, they should be soaked prior to using.

When new work joins old cutting, toothing, and bonding the former to the latter is necessary if toothings have not been left in the old for the new work to pick up into. This work should be done in cement.

Snap-headers in work not requiring them to make bond must be looked for, but it must not be forgotten that some bonds entail their use. In the case of 9-in. walls faced both sides with different facings snap-headers must be used if any other than stretcher bond is required; such walls should be liberally tied together with galvanised or tarred and sanded hoop-iron ties, and be built in cement; and if they are such that the pointing cannot be done at once, *i.e.*, while the work proceeds, the joints, being in cement, should be raked out clearly immediately, as to do so after the mortar has set is to court damage to the arrises of the bricks.

The pointing of the walls will need close supervision. If the specification states the facings to be pointed as the work proceeds, and the weather is unfavourable, the clerk of works will ask for this to be left, and if the builder has to leave the pointing perfect at completion, he will readily agree.

The clerk of works will watch that each fire opening has a separate flue and that the withes are properly tied in, and that in pargeting the flues ordinary mortar is not used, but that hair is added, and cow-dung, if specified. In the case of the flues being on an outside wall, to prevent the likelihood of a builder subsequently accidentally cutting into them when building operations are in hand on the adjoining land the outline of the flues and withes should be marked on the flank wall in white paint, as prevention is better than cure, and in such cases as these it is impossible to reparget over the disturbed part of the flue.

If any underpinning is necessary, this must be carried out in short sections not exceeding 3 ft. long, and a quick-setting cement and the hardest of bricks must be used, and the wedging up should be with stout slate.

In arches, unless of specially moulded bricks, no details will be needed from the architect, but to all arches the clerk of works will note that proper skewbacks are cut—not too straight nor too inclined. All arches should act as arches. For gauged arches the clerk of works should check the setting out and inspect the templates, and in the finished work all the joints should be of one thickness—penny joint—and be made of lime putty (shellac if for carving). The bricks should have a channel or groove cut in each side to take the cement grout, which is poured in when all the voussoirs are in position.

Digitized by Google

Gauged arches are built up from both sides, and the key brick inserted last.

The clerk of works will insist on proper protection being given to the walls from rain, frost, etc., by covering them up with weather boards, sacks, etc., care being taken that the rain is projected off the face of the walls, and that no damage is done to the executed work by the actual labour or materials employed in covering up.

As regards the setting out of the brickwork, this is no part of the clerk of works' duties; he will, of course, check the same, but by no means should he take upon himself the responsibility of any duty that properly belongs to the foreman.

It is impossible always to carry all walls up equally from bottom to top all round the building. Rolled steel joists, stone dressings, or stairs may, among other goods, by delay in delivery, necessitate a stoppage at a certain point, in which case the wall should be raked back. Toothings should be allowed to be left under such circumstances, and no one wall should be carried up more than 3 ft. above another even if raked back, and then it is advisable to pick up the "raked back" courses in cement mortar to minimise the chance of settlement.

With hollow walls careful supervision is necessary to ensure that the specified number of ties find their way into the work and the cavities are left clear of mortar droppings, shavings, etc.

The dampcourse might be mentioned as a brickwork item. The clerk of works will see that one is put to all walls requiring one. If of slates, that they are stout, laid to break joint, and properly bedded; if of asphalt, that it is of the specified thickness; and where vertical dampcourse meets horizontal that a good joint is made and angle fillets put where necessary.

The clerk of works will be called upon to measure up all variations in hidden work and to get the foreman's signature to such, and to keep detail sections of the work as carried out, where variations, additions, or omissions have been made.

In conclusion, just as a man, a carpenter by trade, would make the best clerk of works for a building where half-timbered work domes and timber construction forms the most important items in the contract, and a man, a mason by trade, be one of the best to supervise the erection of a job where the stonework is the most important feature, so should a man, a bricklayer by trade, make an excellent clerk of works for a building in which the chief architectural points are its brick gauged arches, pilasters, aprons, and dressings.

DANGEROUS STRUCTURES.

IN our issue for July 10, page 40, we gave part of a paper read by Mr. E. Willis, A.M.Inst.C.E. (Surveyor to the Urban District Council, Chiswick), before the Institution of County and Municipal Engineers, on the occasion of the annual meeting of that body in London at the end of June. The following is the second part of Mr. Willis's paper:—

Having raised some points for discussion, the author now proposes to give a few examples of dangerous structures which he has had occasion to deal with.

Overhanging Cornices.—The heavy overhanging cornices, always met with in cases of classic ornament, require to be carefully watched to ascertain whether the stone is laid on its natural bed or whether it is laid at right angles thereto. The former condition is structurally better from some points of view, but from that now under consideration it is very disadvantageous, since large pieces are liable to flake off during the winter and spring, from the action of frost having attacked the moisture in the laminations, and drop upon the pathway.

In similar stucco cornices, which in old houses are usually found to be constructed of Roman cement with tiles for the core on rough York corbels, the author has known of whole terraces of shops where this class of work was condemned owing to the frost having penetrated into same.

He has always advocated smaller projections during the time of reinstatement, and this procedure should largely eliminate further trouble, especialy as Portland cement is now more often used and is more reliable and efficient than Roman.

It is to guard against the loss of life occasioned by the periodical dropping of portions of these cornices that the author has thought it advisable to emphasise the desirability of a thorough inspection being made throughout all the older property of this character, as the ordinary house-to-house visitation of the sanitary inspector entirely overlooks the important element of danger mentioned above, and it must be admitted that this is not confined to the poorer class of property, but is often found in some of the best class of shops in the London suburbs and country towns.

Gutters.—The cast-iron gutter is another frequent source of trouble, since the heads of the screws in the case of the O.G. gutter invariably rust off, whilst the old-fashioned semicircular gutter on brackets often falls by reason of the corrosion of these latter fixings.

Party-wall Parapets and Kneelers.—The principal trouble in connexion with party-wall parapets occurs in property built by speculating builders, where, to avoid the cost of cutting facing bricks and the provision of stepped flashing, they have provided the portion of the wall above the roof with joints at angles of from 25° upwards. Whilst it must be admitted that this is not technically in conformity with the model by-laws, yet it is the regular practice adopted by many speculating builders, and it can easily be understood how the weight of the superincumbent parapet-wall acting upon a small projecting kneeler will, if once loosened, speedily cause the whole or a large quantity to slide, unless thoroughly tied in by iron or other suitable material.

Piers and Pier Caps.—The small piers of forecourt walls are another frequent source of notices under the Dangerous Structures Clause, since it is quite easy for the 9-in. or 14-in. pier, usually seen in front of suburban residences, to become dislodged by the slamming of iron gates, or the accidental damage by furniture or heavy dustbins to such an extent that a child may cause the final overthrow of same, and it is this very risk that renders it necessary for the surveyor to keep his eyes opened to the possibility of the existence of these defects where least expected.

Boundary Walls.—A somewhat peculiar case under this heading recently came under the author's notice. A boundary wall of nearly 16 ft. in height was overhanging upwards of 9 in., and as such in this instance was undoubtedly dangerous; but the lower portion of the wall was in the Metropolis, and the upper portion in his district. He accordingly served notices, and officially notified the district surveyor responsible, with the result that immediate action was taken and the whole wall rebuilt.

It is, of course, a question for the surveyor to ascertain before any notice is served, as to whether the wall concerned is actually dangerous or not. The author has seen walls overhanging to a greater extent than their own thickness, and has yet not felt justified in taking action upon same, and it is in cases of this kind where the practical experience, necessary in enforcing this clause of the Statute, becomes of such great importance.

Chimney-pots and Chimney-stacks.—It is possible that in no district would every chimney-pot or chimney-stack be found absolutely safe if same were examined, but it is also probable that in every well-supervised district the number of dangerous chimney-pots would be extremely small, and the author feels it cannot be too strongly urged upon surveyors that a periodica inspection, especially prior to the winter months, should be made with especial reference to this class of dangerous structure.

Chimney-pots are usually found defective after some slight chimney fire, insufficient to cause trouble to the occupier, but enough to render them unsafe by reason of the cement flaunching being seriously cracked, and the pot in a similar condition. When this result obtains, and a high wind arises, it is no uncommon thing, if care has not been exercised in the administration of the district, to hear of numbers of chimney-pots having fallen, and it is surprising that more accidents do not occur from this cause.

In dealing with dangerous chimney-stacks, the author has been sometimes satisfied with tie-rods, but in the case of old work entire rebuilding is usually more desirable. Even loose bricks on the top caused by the destroying action of the weather upon the mortar joints, are sufficient to give cause for anxiety, and the author recollects taking a case of this kind successfully before the court.

Bulging Walls.—The subject of bulging walls does not often arise except in the case of old property or after fires, and can usually be dealt with by means of tie-rods, which should be carried if possible at the level of the floor joists. In one case, however, the writer found a 9-in. wall supporting an improperly constructed tiled roof, overhanging an average of three inches due to the spreading of the roof, and serious damage was only averted by a number of tie-rods being taken through the roof itself, as well as additional struts being provided.

Coping-stones.—The cause of coping-stones becoming dangerous is, of course, due to natural decay, frost, or to dislodgment by external causes. It is not often that statutory notices become necessary for this class of defect, but where stone copings have been utilised on party and external walls projecting above roofs, and the bottom edge has been cut to the splay, the author has had occasion to serve notices respecting them when they have commenced to slide forward owing to the mortar or cement having perished, since the friction has been insufficient to withstand the weight of the upper stones in the case of high-pitched roofs.

Overhanging Balconies.—The same remarks to some extent as were made in connexion with heavy cornices apply to balconies, but with this exception, that in a good deal of old-class property these balconies are constructed of wood, and where same are of any length, it is often found that the wood, although insufficient to support one or two adults, would be totally inadequate for a crowd, and, as such, action sometimes becomes necessary.

It is especially advisable in the case of all public functions for these to be very carefully examined by the surveyor and, if necessary, repaired, shored up, or otherwise supported prior to the date of such function, when it might be anticipated they would be unduly crowded.

Fences and Gates.—It is a question whether these technically come within the section under consideration, but the author has on several occasions found it necessary to press for repairs where the same were becoming dangerous to passengers along the highway, and he is glad to state he has hitherto been able to get the necessary work done without undue friction.

Loose Tiles and Slates.—It is not often that the surveyor can keep a watch upon this cause of danger to the public, and, however careful he may be, many of these constantly fall at times of high wind or gales.

In looking through notes of past work, the author finds he has never had occasion to deal with this particular class of dangerous structure by notice, but in the few cases where they have been observed, repair has been effected, so that the risk to the public has been lessened, even though not entirely eliminated.

Shop Blinds and Street Signs.—Sect. 28

Digitized by Google

of the Town Police Clauses Act, 1847, as is known by all municipal surveyors, deals with the height of these structures, but beyond this in some districts apparently no special attention is paid to the fixing of same.

It has been the practice in the author's district for some time past to obtain sketches with written applications to the Council before allowing the erection of any sign of a heavy character, and this practice is found to result in distinct benefit to the public, with but little hardship to the tradesmen. In some instances the author has found the proposed methods of fixing totally inadequate, and the result of erecting these signs in the form originally proposed, had such been allowed, would have been undoubtedly sanctioning serious risks to the public.

Joint Staircases and Landings.—In the case of flats and places where many families are congregated it seems desirable to include any defects in connexion with joint or public staircases under the class of structure now being considered.

The only practical experience of the author in this respect has been in the case of old property with external wood staircases admitting to several dwellings, and in the case of defects in these he has taken action under this clause, but it also appears to him that any defect in entrances and exits to flats might be treated in a similar manner, and he would personally much appreciate any observations from the members with regard thereto as to their experience in this matter.

Flêches, Vanes, and Lightning Conductors.—As a general rule these are sufficiently safeguarded and watched by the surveyors to the owners of the premises on which they may be fixed, as in most cases where the above are adopted the owner has his own architect or surveyor, who is more or less permanently engaged by him, and should any slight defect appear, he would probably be notified thereof, or would observe same in his periodical inspections before serious damage arose. There are cases, however, where nobody accepts responsibility, and it is to these that the local authority's representative should particularly give periodical inspections and attention.

In the case of high chimneys, the sulphurous and other gases sometimes affect the materials to which, being well above the ordinary line of sight, no attention is given until some piece of mortar, brickwork, masonry, or corroded metal falls to the ground, and it therefore does behove the surveyor to bear these structures in mind, and by safeguarding the public also assist factory owners, church, or other authorities indirectly by his practical knowledge.

Fires.—The question of fires and the resulting dangerous structures, is such a wide one that the author does not propose to deal in detail with same. What he does suggest, and the principle he has personally adopted, is for all serious fires to be immediately notified to him, and for an inspection of the property to be made at once, with a view of ascertaining whether any special measures need be taken for the safety of the public in the event of walls, chimneys, roofs, or other portions of the building, being liable to fall outside of the immediate boundaries of the damaged or destroyed property.

New Buildings.—It seems somewhat strange in a paper of this kind to classify new buildings under the heading of dangerous structures, but a point of some interest actually came within the author's experience, and as such he thinks it might be interesting to his professional brethren.

A new 9-in. external wall built as a party wall, about 28 ft. in length, comprising two stories and a gable, had been erected by a speculating builder. It had been built very quickly, principally of bats and not properly bonded, between the times of the periodical inspections by the surveyor, and when seen by him he noticed the imperfections, and immediately warned the builder that it would have to be pulled down and rebuilt.

The builder, however, proceeded to roof in same, and before the notice served upon him had been complied with a strong gale arose, which, acting on the inside of the wall, it being to some extent confined by the roof and rear walls, caused upwards of 20 ft. to fall outwards. This was an instance of where a new building became a dangerous structure before it was out of the builder's hands, as some children had been playing on the ground over which it fell, and would have been killed or seriously injured had the collapse occurred a few minutes earlier.

Underpinning and Shoring.—The writer already feels his paper of sufficient length, and he therefore does not think it desirable to deal in detail with the underpinning or shoring up naturally required in some of the foregoing cases, although both are complementary to the subject of dangerous structures.

He has refrained from dealing with London practice or conditions which exist in mining districts, since there are many members more fitted to deal with these than himself, and he does not in any way wish to imply that these few notes form a complete record of the portions of buildings, etc., which may or do in fact become dangerous, but he has endeavoured to collect some of the general items which he has actually met with in practice during the last twenty years, and he trusts they may form the basis of a discussion which may be of advantage to at least some of his professional brethren.

Legal Column.

Right to Make a Tunnel.

In this case, South-Eastern Railway *v.* Associated Portland Cement Manufacturers, Ltd., the defendants were assigns of a lease of certain land on each side of the railway with the right of working chalk under the land. That lease purported to confer upon them the rights and privileges of a certain agreement made between the railway company and the lessors' predecessor in title many years before, that the lessees or their assigns, under certain conditions, should be at liberty to construct a tunnel under the line. This necessitated no interference with the traffic, nor did it involve any engineering difficulties, but the railway company questioned the legal rights of the defendants to undertake the work on the ground that the provision in the agreement was uncertain and indefinite, and that it was void as tending to a perpetuity. The hearing of the action occupied four days, and the learned judge of the Chancery Division found for the defendants. The decision turns upon some subtle legal distinctions between "exceptions" in conveyances, *i.e.*, the taking out of some part from what has been expressed to be granted, and "reservations" which relate to some new thing out of that granted, greater definiteness being required in the former than the latter. Here the provision was a reservation of an easement, and granted by the plaintiffs, the railway company themselves, and the Court held that the defendants had a legal right to exercise the easement as assignees of the agreement.

Revocation of Patents.

The Comptroller-General of Patents has given a decision under sect. 27 of the Patents and Designs Act which may be briefly referred to as illustrating the application of principles laid down in former cases noted in these pages.

The patent which it was being sought to revoke related to mills for crushing such material as quartz, and especially to the ring and rolls. The proprietor of this patent carried on business in the United States, but in consequence of the passing of the Act he appointed an agent in this country, who inserted advertisements, and an English firm was entrusted with the manufacture of the mills. In November, 1908, the first machine was completed, but many of the parts had been imported from America. A second machine was then commenced, but not completed until July, 1909, the excuse for the delay being that some improved portions under a later patent were being expected from America, and that there was no immediate demand for the machine here. For this machine the rolls and ring were imported from America, but a third machine was in process of manufacture, the rough castings for which had all been made in England. The mills were only made outside the United States as above and in Germany, but the demand in foreign countries was about two machines a year, and the two machines completed had been sold here. The Comptroller held (1) that there had been no undue preference given to foreign countries, nor had the patentee hampered himself in carrying out his obligation to manufacture here, and the manufacture, in fact, was sufficient to meet the present demand; (2) that the importation of certain material parts was explained sufficiently by the desire of the patentee not to prejudice the early sales by obtaining inferior material, and there was evidence that the machine might shortly be completely manufactured here; (3) that the price asked was a *bona-fide* price, being, in fact, the same as America and elsewhere, and was not intended to diminish the demand here. Therefore the Comptroller decided that at present the case for revocation failed, though an application could again be made should the manufacture be inadequately carried on at any future time.

Gas Companies' Liabilities.

A recent decision in the Privy Council raised some interesting points in connexion with the liability of gas companies. The defendants were the Dominion Natural Gas Company and the Toronto, Hamilton, and Buffalo Railway Company, the plaintiffs being certain workmen in the employ of the latter company or their representatives who had suffered injury from a gas explosion. The gas company, in consideration of obtaining a wayleave for one of their mains, had contracted to supply the railway company with gas at reduced rates and to furnish meters and regulators. The gas was a natural gas, which was obtained at very high pressure, and it was necessary to reduce the pressure before it was used. Part of the apparatus employed to effect this object was a safety valve. The plaintiffs were suing both companies. The railway company contended that there was no negligence on their part and that they had discharged their duty by employing competent persons—the gas company—to provide the system. The gas company alleged, however, that the servants of the railway company had interfered with the apparatus, and it was proved that they had inserted a tap before the pipe entered the regulator, and had also hammered the safety valve. The Courts in Canada had found against the gas company, and that company appealed to the Privy Council. There being no contractual obligation between the plaintiffs and the gas company the Court had to consider what duty the gas company owed to the plaintiffs, and it held on decided cases that in the case of the supply of articles dangerous in themselves a peculiar duty was imposed on those supplying them, and that in the absence of due precaution it was no defence to say the accident would not have happened but for some other agency unless the proximate cause was the conscious act of the other agency. In the case in question the jury had found that there was negligence because the safety valve was installed with an emission into the shop instead of into the open air. The true cause of the escape of gas was left in doubt, but it occurred at the safety valve, not at the tap inserted by the servants of the railway company, and the Court held that, initial negligence having been found against the gas company, they had failed to prove that the proximate cause of the accident was due to the intervention of the Railway Company's servants and that the gas company were liable.

Digitized by Google

THE BUILDER

AUGUST 28, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETING.

WEDNESDAY, SEPTEMBER 1.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members.

Illustrations.

PROPOSED ADDITIONS TO THE TOWN HALL, STOKE-UPON-TRENT.

WE illustrate this week Messrs. Warwick & Hall's design for the proposed additions to the Town Hall, Stoke-on-Trent. As we stated last week, this design was placed second by the assessor, and the second premium was awarded them by the Town Council. As in the opinion of the Council the cost of the first and third designs was excessive, these premiums were not awarded. Messrs. Warwick & Hall reported on their design as follows:—

In preparing the accompanying design, particular care has been taken in the planning of the large hall, small hall, and court, so that each one is entirely distinct, with separate entrances from the street, and yet they may be all used together or in conjunction with the existing buildings. The present entrance is thus utilised to the fullest possible extent, and the existing staircase is remodelled on a scale suitable to the new surroundings.

The committee rooms and spare rooms are so placed that they may be used in connection with every part of the building for the purpose of retiring rooms, refreshment or jury rooms, etc.

The existing buildings are not altered except in the matter of the new staircase, and the mortuary and stable buildings are untouched.

The large store in the present basement, and the means of access thereto, will remain unaltered.

The basement kitchen is connected by lifts to the serving-room on the first-floor, adjoining both the present assembly-room and the new supper-room, in both of which banquets may be served direct.

The elevations carry the horizontal lines of the existing buildings, and conform to them in general character.

DESIGN FOR BURSLEM MUNICIPAL BUILDINGS.

THE general lines of the design are dictated by the necessity for absolute economy to meet the somewhat inadequate limit of cost. The simple symmetrical grouping naturally arises out of the positions into which the large hall, small hall, and courts necessarily arrange themselves on the site, and the treatment of the external design in a rather simple manner is prompted by a desire to keep in character with the surroundings in which the buildings are to be placed.

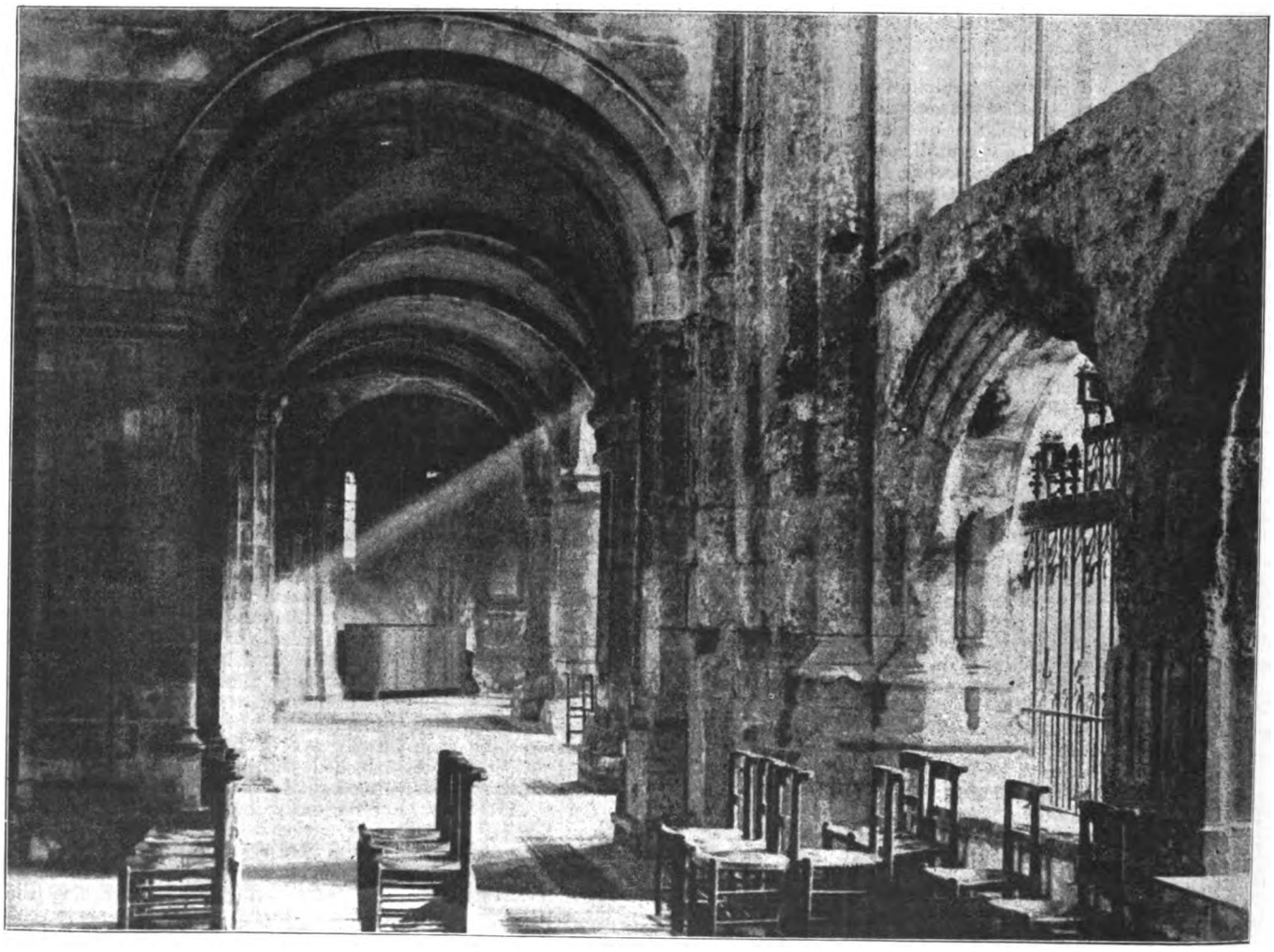
E. MONTAGUE THOMAS.

NORTH AISLE, ST. BARTHOLOMEW, SMITHFIELD.

THE illustration shows the north choir aisle of St. Bartholomew's, Smithfield. One of the later pointed arches is seen in the foreground, and beyond it the Norman arcade and the commencement of the bend of the apse.

The illustration is from a photograph by Miss A. G. Weaver, of Hampstead.

NEW CHURCH, CATCLIFFE.—At the mining village of Catcliffe, near Rotherham, the foundation-stone of a new church, to be dedicated to St. Mary, was recently laid. When completed the building will provide accommodation for 300 people. The contractors are Messrs. Thomas Roper & Sons, Ltd., of Sheffield, who are carrying out the work under the personal superintendence of the architect, Mr. J. E. Knight, of Rotherham.



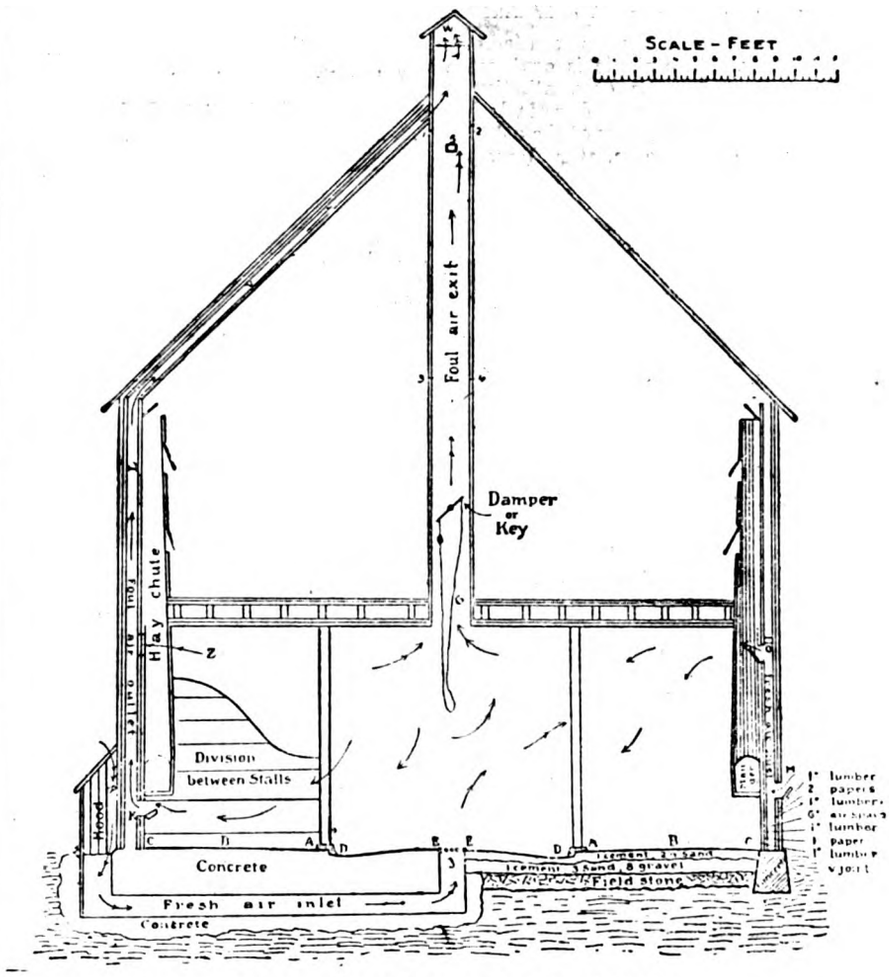
View in North Aisle, St. Bartholomew, Smithfield. From a photograph by Miss A. G. Weaver.

Digitized by Google

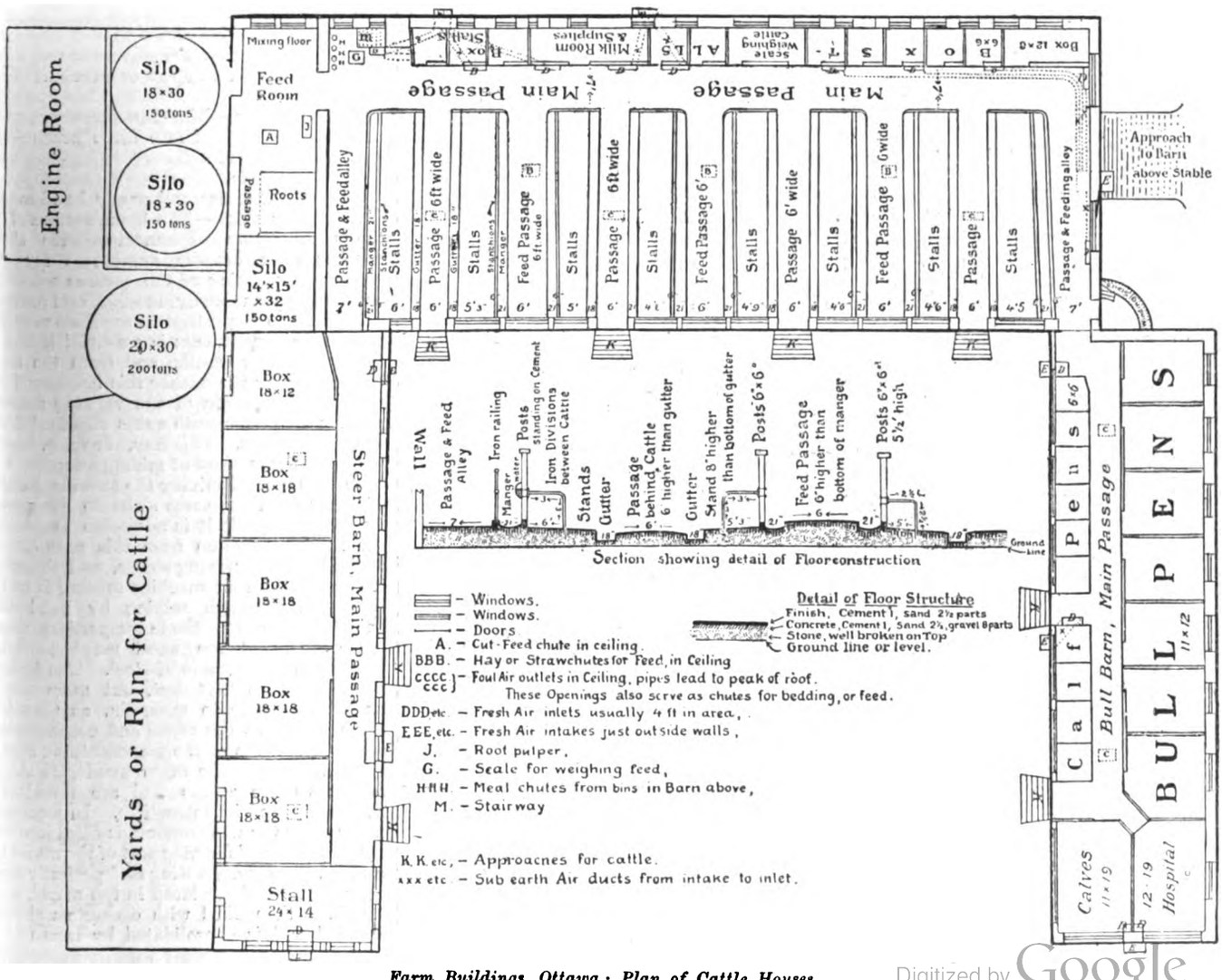
MODEL FARM BUILDINGS, OTTAWA, CANADA.

PROBABLY some amount of interest may attach to the description of a model horse-barn and a model cattle-barn which have been erected by the Canadian Government at the Central Experimental Farm at Ottawa. The particulars are given in the annual Report of the Canadian Minister of Agriculture.

The stables were built to accommodate twenty-three horses. The ground-plan explains itself for the most part, whilst the section shows wall and floor construction and the system of ventilation. The walls, starting at the outside, are built with vertical inch-dressed timber, battens over joints, two building papers; rough lumber, horizontal; 6-in. studs and air space; rough lumber, horizontal; building paper; V-joint inside finish. The ceiling or upper floor is constructed similarly, joists supported by two beams resting on stall posts. The foundation was built of concrete. The floor, a regular cement one, with the necessary pitches or inclines, etc., was built of rather unusual strength on account of its being for horses. A good depth of stone was laid on the ground, a layer of about 5 in. of concrete, one cement, three sand, eight gravel followed, and finished off with a second layer, one part cement, two and a-half parts coarse sand, and half a part crushed granite. The surface of the passages is cut by inch-deep grooves into 6-in. squares. The main passage, 12 ft. wide, is about 3 in. in the centre, descending in a convex slope to immediately behind the horses. The stand for the horses is about 4 in. higher than the gutter or lowest point of the 12-ft. passage. The stands are 9 ft. long, and vary in width from 5 ft. to 6 ft. 1 in. The horses stand on cement. Feed chutes begin at plate and end at manger. The hay chutes are slightly bell-shaped, so that



Farm Buildings, Ottawa: Section of Stables.


Engine Room
Silo 18×30 150 tons
Silo 18×30 150 tons
Silo 14'×15' ×32 150 tons
Silo 20×30 200 tons
Yards or Run for Cattle
Feed Room
Roots
Main Passage
Passage & Feedalley
Stalls
Feed Passage 6ft wide
Passage 6ft wide
Passage 6' wide
Feed Passage 6' wide
Passage & Feedingalley
Approach to Barn above Stable
Box 18×12
Box 18×18
Box 18×18
Box 18×18
Box 18×18
Stall 24×14
Steer Barn, Main Passage
Bull Barn, Main Passage
PENS
BULL PEN
Calves
Hospital
Section showing detail of Floorconstruction
Detail of Floor Structure
Finish, Cement 1, sand 2½ parts
Concrete, Cement 1, Sand 2½, gravel 8 parts
Stone, well broken on Top
Ground line or level.
= Windows.
= Windows.
= Doors.
A. = Cut-Feed chute in ceiling.
BBB. = Hay or Strawchutes for Feed, in Ceiling
CCCC CCC = Foul Air outlets in Ceiling, pipes lead to peak of roof.
These Openings also serve as chutes for bedding, or feed.
DDD etc. = Fresh Air inlets usually 4 ft in area,
EEE, etc. = Fresh Air intakes just outside walls,
J. = Root pulper,
G. = Scale for weighing feed,
HHH = Meal chutes from bins in Barn above,
M. = Stairway
K.K. etc, = Approaches for cattle.
xxx etc = Sub earth Air ducts from intake to inlet.

Farm Buildings, Ottawa: Plan of Cattle Houses.

Digitized by Google

when once hay is started it drops to mangers. This plan of feeding long hay has been found very satisfactory. The stable is equipped with two distinct systems of ventilation, the King and the Rutherford, either of which may be operated independently of the other.

Describing the cow-house, the Report states that the floor is of cement. The main passages are about 7 ft. wide. The stands vary in length, the largest being 6 ft. 4in. from gutter to stanchion bed. The main house will accommodate about ninety head of cattle, and is lighted by 450 sq. ft. of glass, practically every foot of which admits the direct rays of the sun for a longer or shorter period every sunny day. This shows about 5 sq. ft. of glass or light per head, which helps to render things bright, cheerful, and sanitary. Fresh air is admitted at the floor level by means of air-ducts.

No details as to cost are given.

ARTIFICIAL STONE FOR FOOTWAYS.

AT the annual meeting of the Incorporated Association of Municipal and County Engineers, held in London on June 24, 25, 26, Mr. Reginald Brown, A.M.Inst.C.E., Engineer and Surveyor to the Southall-Norwood Urban District Council, read a paper on this subject. After some preliminary remarks, he said that the materials in general use for the manufacture of artificial paving slabs are granite chippings and cement, but in some cases crushed York stone or crushed clinker takes the place of granite chippings.

Cement.—The best firms are very particular as to the quality of the cement used by them. They have their own specification for the cement, which follows closely on the lines of the British standard specification. The good quality of British cement is so well secured and assured from the best works that the different results obtainable under breaking and wearing tests must be attributed to other causes than the cement.

Aggregate.—The kind of granite used depends in a great measure upon the position of the works, their nearness to the quarry and the cost of carriage, but it is a *sine quâ non* that the hardest granite should be used. The specific gravity of the granite used will have some bearing upon the number of slabs to the ton, and consequently upon the cost at which the slabs can be supplied, and also upon the durability of the slabs under wear. The granite chippings used generally come from Leicestershire quarries; they are tough and hard and make excellent material, but even with these granites the specific gravity varies from 2·63 to 2·99, so that the slabs made will also vary in weight. Crushed clinker produces a stone which is not so heavy as those made with a heavier and more dense aggregate, such as granite chippings.

Size of Aggregate.—The tendency is to use granite chippings crushed to ¼-in. gauge, but as the chief aim is to obtain as dense a concrete as possible, it would be interesting to know whether this could not be attained and a stronger slab manufactured by the admixture of granite chippings so graded in size and in such proportions as would render the percentage of voids at a minimum, and by this means use a smaller quantity of cement.

Cleanness of Aggregate.—Tests have been made from time to time as to the value of eliminating the fine dust from granite chippings preparatory to making up the test cubes, and whilst it is evident that dust, as dust, should not be present, it appears that if the material is properly selected a small amount of granite dust, as *very* fine chippings, affects the strength to a very small degree so long as the dust plus the cementing material does not exceed the amount required to fill the voids in the crushed granite, and so long as the cemeting material can surround all the particles.

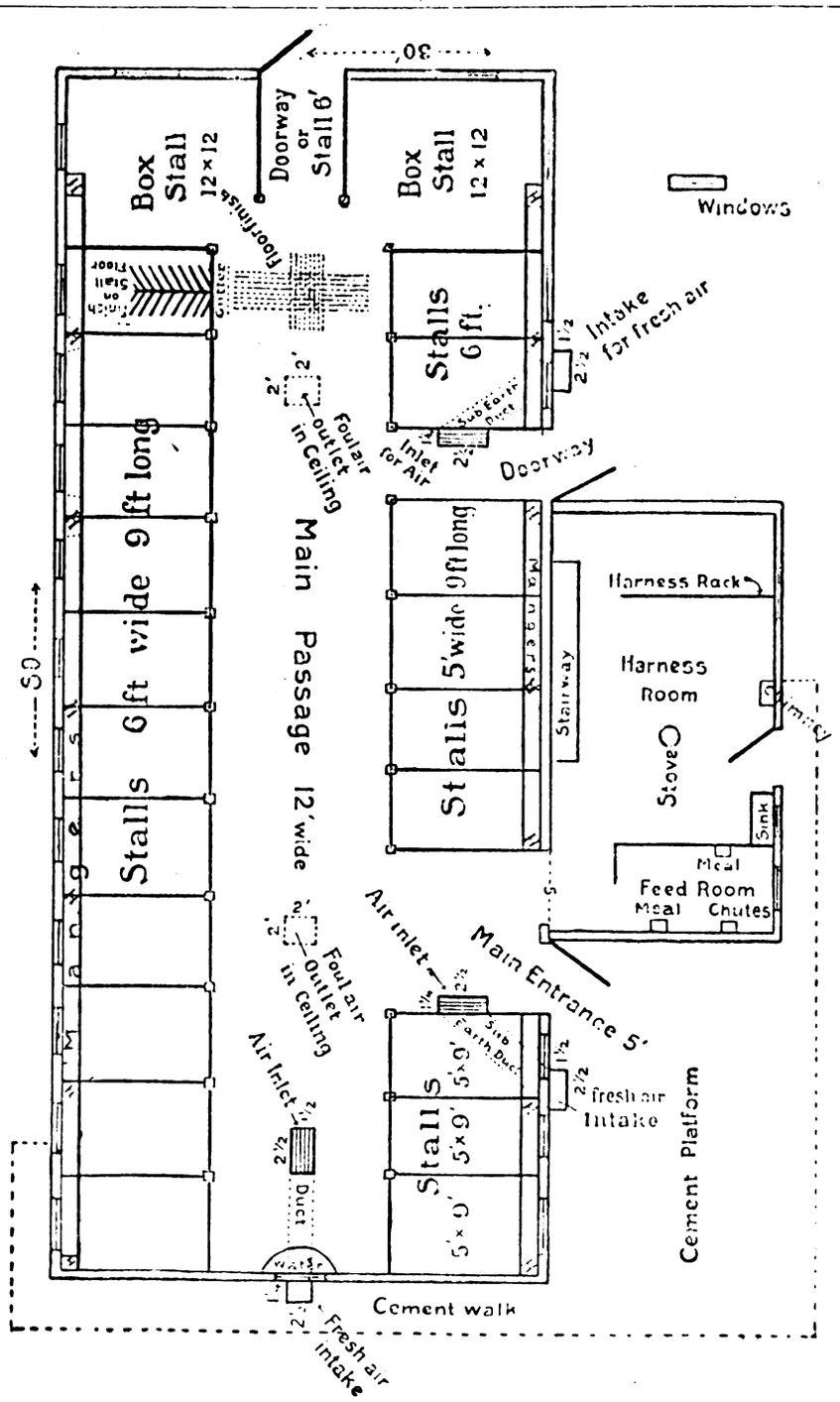
Voids.—A fairly accurate method of finding the percentage of voids in the granite chippings is to take a quantity of the aggregate, place it in a vessel of known capacity, shake down and level and add water from a vessel of known capacity. The amount of water used after taking into account that taken up by the aggregate will give the volume of the voids, and from this the percentage can be ascertained. The author has carried out several tests to ascertain the percentage of voids in granite chippings, such as is used for the manufacture of artificial stone paving, and finds that a fair figure to take is 45 to 50 per cent. by volume. As the chippings were measured loose the percentage of voids would be less in tamped or machine-made concrete.

Types of Stone.—The manufacture may be conveniently divided into three heads:—

1. Machine made.
2. Hand made.
3. Partly machine and partly hand made.

Apparatus Used.—The apparatus used in the manufacture of machine-made slabs consists of automatic appliances for the accurate measuring of the various constituents, mixing machinery, moulds, and presses.

There is no doubt that an accurate measuring of the constituents is essential if one is to get the best results, and from the tests carried out by the author this becomes very apparent by reason of the varying specific gravity of the concrete cubes obtained from the same makers. This may, of course, be due partly to the method of mixing adopted, but even with careful mixing the specific gravity of cubes from the same slabs do not agree. As far as possible it is advisable to remove the human equation from this part of the manufacture of paving stones, and therefore it is apparent that machine mixing is to be preferred, although mixing by hand will have its adherents. Some companies making stone by hand use wood moulds, whilst others use those made of steel. The former are cheaper in first cost, but more costly and troublesome to maintain, as they become ragged at the edges and consequently affect the arrises of the manufactured stone. Steel moulds on the other hand give sharp arrises to the stones and are practically permanent and indestructible. In machine-made slabs the wet concrete is filled into the moulds or mould forming part of the machine, a loose, but closely fitting and perfectly true metal plate is first placed in the mould, this mould is then filled with concrete which is levelled and is consolidated by means of a ram which commences with a pressure of 500 lb. per square inch and is increased by



Farm Buildings, Ottawa: Plan of Stables.

Digitized by Google

intensifying to about 3,500 lb. per square inch, when this operation is completed the slab and loose plate is forced out of the mould and taken to the silicating tanks, or indurating tanks, or placed in drying-sheds to mature, some firms adopting the method of keeping the slabs damp in the sheds by watering them occasionally. It is claimed that a machine-made slab is more dense and durable than a hand-made slab. When the slab is made by hand the wet concrete is placed in the mould and is "tamped" thoroughly to remove all air holes as far as possible, some firms using shaking machines to attain the same object.

Machine-made versus Hand-made Slabs.—So far as density is concerned, it appears on the face that machine-made slabs should be heavier than hand-made slabs; but this does not occur in practice to a very noticeable extent. The author has had slabs made from the same aggregate in the same proportions both by machinery and by hand, and he finds that, in some cases, the hand-made slab has been the heavier of the two. So far as the wearing qualities are concerned, the tests given later on in this paper speak for themselves.

Absorption of Water.—To test the absorption of hand-made against machine-made slabs, the author had some bars of concrete made 24 in. long by 2 in. wide and 2 in. deep, and after three months he found that the hand-made slabs contained about 6 per cent. of moisture against 4¼ per cent. in the machine-made slabs. After they had been dried and weighed the bars were steeped in water for a period of eighteen hours and then weighed again, and it was found that the hand-made slabs had absorbed slightly less moisture than they originally contained, whereas the machine-made slabs had absorbed slightly more, but the difference was so slight in the former as to be hardly noticeable, whereas in the latter the percentage was much greater.

Breaking Strength.—So far as this is concerned, the hand-made slabs were in many instances found to be quite as strong as machine-made slabs.

From this it would appear that properly made hand-made slabs are as good as machine-made slabs.

Density of Slabs.—The average weight of a cubic foot of concrete composed of three of granite chippings to one of cement may be taken to be 150 lb. and a stone at this weight will represent a specific gravity of 2·4; of this the moisture may be taken to be 5 per cent., bringing down the specific gravity of the cement and concrete to 2·28. In the above proportions the granite chippings will represent a specific gravity of 1·72, leaving the voids as 35 per cent. to 42 per cent., according to the weight of the granite used for the chippings.

Durability.—There is no doubt that the best test for durability is the actual wear in the stone when laid in a thoroughfare subjected to atmospheric influences. A considerable number of years have now elapsed since some of the artificial stones first came into use, and members of the Association have had ample opportunities of gauging the wear of such stones under ordinary cone ditions. It is, however, difficult to compar one stone with another when laid as footway paving, as they cannot be subjected to exactly similar conditions. The author has therefore tested some scores of samples of stones for their wearing qualities. The stones tested were as follows: Victoria, Aberdeen, Adamant, Empire, Non-slip, Granolite, Imperial, Thames, Excelsior, Croft, Cliffe Hill, Alexandra, Atlas, and a paving made from destructor clinker.

The manufacturers were good enough to have the cubes cut out from the acutual slabs, these cubes being as near as possible 2 in. by 2 in. by 2 in. For wearing properties the author adopted the "rubbing test" as follows:—

A small vertical gas-engine of 2½-horse-power was requisitioned for the purpose, and an emery wheel attached to an extension of the fly-wheel axle. The cubes were held in a wooden frame on the face of the emery wheel by means of an iron bar pivoted to a rigid wooden frame, extending over the stone under test with a weight depending from the further end.

By this means an equal pressure was applied throughout the tests to all the stones and the human equation eliminated. Each test consisted in allowing the engine to run for fifteen minutes at 220 revolutions per minute. The result of these tests proved that the majority of the stones on the market showed comparatively little wear, the hand-made comparing very well with the machine-made slabs. . . .

Maturity.—It goes without saying that a slab, to be suitable for footway paving, should be "mature," and the general rule is to insist upon a guarantee that the slabs shall be twelve months old before delivery on the works. It is difficult, of course, after the slabs have been delivered on the works to subject all to tests to prove their maturity.

Of late years, no doubt owing to the large number of manufacturers, a specified breaking stress has been applied and required by municipal engineers, and manufacturers are now alive to the fact, and in many instances the test is applied by the manufacturers at their own works, and a certificate issued with all consignments; but the majority of municipal engineers like to see the test applied themselves. The best manufacturers are only too willing to submit their stones to any reasonable breaking test in the presence of the engineer, as it is to their interest entirely to supply a stone which will meet with approval. The result has been that several tests have been suggested and adopted by different municipal engineers, but the author thinks it will be agreed that a general test should be adopted, so that manufacturers may know what to expect, and so that all manufacturers may be placed on the same and equal footing.

The usual thing is to select a certain number of stones out of a specified consignment, and if any or a certain proportion of these stones break under the test to be applied, the consignment is rejected.

Owing to the uncertain mixing and manufacture of slabs it is therefore advisable to adopt a reasonable breaking test, and not one which might possibly be reached in exceptional cases.

In order to ascertain the strength of a beam as compared with any load it may have to carry it is necessary to ascertain the nature and extent of the external forces at work tending to break a beam across, together with the internal forces which are resisting this tendency to rupture.

It is a well-known fact that in timber beams the upper half is in compression and the lower half in tension, and although the constituents of concrete are granular and not fibrous, it will be assumed that similar strains are set up.

When a beam is loaded uniformly the bending moment, graphically, takes the form of a parabola, the greatest moment being at the centre, and is represented by $\frac{Wl}{8}$, where W is the total load and l the span.

When the load is concentrated at the centre the bending moment, graphically, takes the form of a triangle, and the formula becomes $\frac{Wl}{4}$; hence a beam loaded uniformly will bear twice the load as when the load is central. There are many degrees between each of these extremes, and the results obtained by various manufacturers and municipal engineers may be, and no doubt are, due to the fact that the loads are not applied centrally; this could be obviated if the tests were reduced to an equivalent central load, or, better still, if the central load was generally adopted. The most severe breaking load that can be applied is therefore to concentrate the load at the centre of the slab. The load should be applied on as small an area as possible, otherwise it will take somewhat the form of a partially distributed load. If the load could be applied on a knife edge across the centre of the stone, it would be all that could be desired, but as the general rule is to use slabs as the load, it becomes necessary to apply it on a flat surface. Manufacturers could no doubt use some form of hydraulic apparatus in which the load could be applied on a knife edge and applied gradually, or the load could be applied by means of weight sliding on a long lever arm; by either of these means the actual breaking load or the test load could be applied without jerks and applied at the proper place. We have, however, to deal with the tests as they exist. Experience has shown that 4 in. is about the narrowest width that can be used under these conditions. It is therefore suggested that when slabs are used as the load the slab under test should rest on knife edges, across the width of the slab, placed 11 in. on either side of the centre of the slab, and the load applied, stone by stone, as carefully as possible, to prevent jarring. A good method is to use slabs 2 ft. 6 in. long, as the load, placed with their long axes alternately across the width and length of the slab under test, thus giving a "hand-hold" during loading.

The resistance afforded by the internal structure of the slab is given by a number of closely adhering grains. It is difficult to state the actual position of the neutral axis in any particular slab, but if it is taken along the centre of the depth, the cemented grains below the centre line is subject to tension, and the grains above the centre line is subject to compression.

On this assumption the grains on the lower face would be subject to the greatest tensile stress, but the area subjected to tension will depend upon the position of the neutral axis.

Simple concrete will fail in tension long before its failure takes place by compression, hence this stress is generally taken.

From extended experiments upon both slabs and test bars the author finds that the modulus of rupture, or the "tensile strength per unit of area of extreme fibre" of concrete as used in paving slabs, may be taken as from 770 lb. per square inch to 1,155 lb. per square inch, and at these figures the concentrated breaking loads should be from 20 cwt. to 30 cwt.

Specification.—After tests spreading over several years, the author has adopted the following specification:—

Artificial Stone Paving.—The paving to be obtained from an approved manufacturer in stones not less than 4 ft. in superficial area, unless otherwise sanctioned, and to be 2 in. thick.

The manufacturer or manufacturers must give a written guarantee to the contractor and the surveyor that the stones proposed to be supplied by him or them have been in stock at least twelve months before delivery upon the works. The stone to be made of granite chippings and Portland cement, well mixed together. Either machine-made or hand-made slabs will be accepted. The stones will be required to have both top and bottom faces equal in character and finish, the stones to be out of winding, the edges and arrises to be true and clean. When the stones are delivered on the job the surveyor will select a number of stones in the proportion of four slabs for every street, or for every 400 yds. supplied, whichever is the smaller, and a test will be applied in the following manner:—

The stone to be tested will rest on knife edges (placed 11 in. on either side of the centre of the longest dimension of the stone) and a piece of 4-in. by 3-in. timber laid flat across the centre of the stone at its narrowest dimension, and the load applied by means of similar slabs piled one on the other.

If the stones do not comply with the requirements above specified, or (on testing) any or either of the stones break at less than

Digitized by Google

20 cwt., the whole consignment will be rejected, and must be removed from the works on notice from the surveyor. The contractor must provide in his price for the necessary assistance for testing, and also for any stones broken during the tests. . .

Archæological Societies.

MEETING OF GLASGOW AND NEWCASTLE ARCHÆOLOGISTS.

On Friday and Saturday last week the members of the Newcastle Society of Antiquaries held a country meeting on the line of the Roman Wall, in conjunction with the members of the Glasgow Archæological Society. The representatives of the Glasgow Society arrived in Newcastle on Thursday evening. The party included Dr. George Neilson, Procurator-Fiscal of Glasgow (President), and Sir Archibald Lawrie. On their arrival at the Central Station, Newcastle, they were met by Mr. Robert Blair and Mr. R. Oliver Heslop, the Honorary Secretaries of the Newcastle Society, and the Rev. C. E. Adamson, who conducted them to the Castle, the headquarters of the Newcastle Society. The party was conducted over the Castle and the Black Gate by Mr. Heslop, and tea was afterwards served in the Castle. The party left the city early on Friday morning for Hexham, whence they drove to Chollerford. After visiting the remains of the Roman bridge across the Tyne at Chollerford, the station of Cilurnum, and the museum the party partook of lunch, after which the drive along the line of the Roman Wall was resumed to as far as Housesteads. The Housesteads Mile Castle inspected, the party made their way back to Hexham by way of Bardon Mill and Chesterholm. On Saturday a visit was made to the Roman remains now being excavated at Corstopitum. The party were conducted over the excavations by Professor Haverfield, of Oxford; Mr. R. H. Foster, who is in charge; and Mr. W. H. Knowles, of Newcastle, who assisted with explanations. Professor Haverfield went briefly over the ground covered during the four years, and said it was one of the most important sites hitherto found in Roman Britain, and the discoveries made were of unparalleled importance. He dealt with the recent discovery of a trough worn round the edges with semicircles. There was a dispute as to what had done this, knives, buckets, and the necks of cows being given as agencies. He was inclined to favour buckets. Another trough had been found at the back of the town, and from it they were trying to trace the watercourse which must have brought water down from the hill behind. Turning to the big building discovered at the end of last season, Professor Haverfield pointed out the masonry of which it was composed, remarking that it was better masonry and more solid than he had seen anywhere else in Roman Britain, even in Bath. They had not yet been able to fix its use, although apparently the northern part had not been finished. The building was similar to a forum, but had not the usual corridors, and, in fact, did not exactly resemble any forum, basilica, or prætorium known. From its character, however, he deduced that it was such a building that no one but a State, and probably only the war office of a State, would have put it up. This year, he added, they had not been able to open up very much ground, and the buildings found were not of first importance. They included a large hypocaust, with two apses, another granary, and several other buildings of the same character. Certain articles found, however, had been of the greatest importance, these including pottery which dated back to the 1st century A.D., the time of Agricola. The visitors subsequently went over the site, and afterwards inspected in the museum the pottery referred to and other interesting items. One of these was a mould, from which a cast has been taken, which is believed to represent a local god. Two finely preserved statuettes of Mercury and Cybele were also shown, and a piece of chain mail made of bronze and iron, the former being regarded as conclusive evidence of its Roman origin.

YORKSHIRE ARCHÆOLOGICAL SOCIETY.

On Wednesday, the 18th inst., the members of the Yorkshire Archæological Society paid a visit to some of the places of interest within that part of Yorkshire known of old as the Forest of Bowland. Driving from Chatburn Station, the party traversed a succession of country lanes to Sawley Abbey. The ruins of Sawley are not imposing; little beyond the ground plan and a few shapeless walls are now to be traced. The site was roughly cleared some sixty years ago, but it is now quite overgrown, and Mr. Sydney D. Kitson, F.R.I.B.A., who explained the history and the relics to the party, took occasion to suggest the desirability of a complete investigation. So much had, he pointed out, been learnt in recent years with regard to the plan of a Cistercian abbey that a fresh clearance of the site would assuredly be productive, and it need not be costly. The abbey was a minor star in the great group of Cistercian abbeys which form the antiquarian glory of the county. It was founded by a Yorkshireman, William de Percy, Lord of Topcliffe and Spofforth, whose relative from his castle at Mulgrave had reinstated the Benedictine Abbey of Whitby, and later, when further endowments were required, they came from Percy's daughter and her tenants the Vavasours, from land at Tadcaster and at Hunslet. Tracing in detail the history of the place, Mr. Kitson showed that its record was one of almost continuous poverty, for the place did not secure rich gifts such as those which went to Kirkstall and Fountains, and the monks themselves were dissatisfied with the site. Under Mr. Kitson's guidance the ground plan, which follows the usual type and has many interesting parallels with Kirkstall and Fountains, was studied as thoroughly as the rain would permit. Lunch was then taken at the Spread Eagle Hotel, Sawley, and subsequently the party crossed the beautiful valley of the Ribble and drove forward to the ancient hall of Bashall, near the little hamlet of Bashall Eaves. Their way took them within site of the hall of Waddington, where, during the Wars of the Roses, King Henry VI. lay for a while concealed. Without, however, stopping to inspect the building, the party drove forward to Bashall, where they were received by Colonel J. W. R. Parker, F.S.A., who gave some historical notes on the families who had owned the building. The chief interest of the building lay, however, in the fact that it afforded exceptionally interesting relics of early domestic architecture. The hall itself is of early Tudor work, and there is in the rear a large building, with a picturesque wooden gallery, which, according to tradition, was the "barrack" of the retainers of the Talbots. This is of still greater antiquity than the hall. Mr. Kitson, who spoke on the architectural interests of the place, indeed, attributed it to the latter part of the XVth century. Speaking with special reference to the hall, Mr. Kitson said that house-building in the early Tudor period was of an essentially English type. Sawley Abbey, which had just been visited, traced its origin to a foreign type and a Burgundian plan, but Bashall was a home product such as could neither have been originated nor imitated by foreign contemporaries. The fortified house, or castle, which until the end of the Wars of the Roses was a necessity in England, was a piece of military rather than of domestic architecture, and as such was naturally governed by the international rules of war, just as church architecture was governed by the ritual which obtained throughout Christendom. But after the Wars of the Roses the fortified house fell into disuse, and the English house was evolved. Relieved from the necessity of having mere slits for the admission of light the house designers revelled in large and many mullioned windows. After leaving Bashall the members were received by Colonel Parker in his historic home of Browsholme. Colonel Parker, in a short address, told some of the historical associations of the spot. A short address was also given by Mr. Kitson, who showed that Browsholme Hall had been subjected to so many alterations as to be a veritable architectural puzzle. Subsequently the party were entertained to afternoon tea by Colonel and Mrs. Parker, and before they returned to their conveyances for the homeward journey inspection was made of the many objects of interest which are preserved in the hall.—*Yorkshire Observer.*

Competition News.

STOKE-ON-TRENT TOWN HALL EXTENSION SCHEME.

We mentioned last week the result of this competition. We are now enabled to give the names of the authors of the designs placed first and third by the assessor but disqualified by the Committee. The authors of the design placed first were Messrs. Garratt & Simister, Norwich Union-chambers, Congreve-street, Birmingham; the third was by Mr. William Heywood, of the same address.

WELSH NATIONAL MUSEUM.

Dr. W. E. Hoyle, Director of the National Museum of Wales, has issued a list of conditions and instructions to architects who intend to compete for the national buildings to be reared in Cathays Park, Cardiff. He states that the Council of the National Museum is prepared to receive designs for the new museum at a cost for the completed building of 250,000*l.*, inclusive of carving, but exclusive of decorative sculpture, that may be presented later, for which positions should be provided by the architect. It is thought that about one-third of the building will be erected in the first instance, and this portion will probably have to house temporarily all the six departments. From the position of the site on the east side of the City Hall and the relation of the Law Courts, on its west side, to that building as a centre, it is thought desirable that externally the museum building should be designed in harmony with these buildings, that, so far as possible, it may be in sympathy with the general scheme adopted. All elevations must be executed in best Portland stone. The competition is open to all architects, and competitors are invited to make every provision they consider necessary for such an institution, whether such provision is included in the schedule and other papers or not. The designs will be submitted to the assessors, Sir Aston Webb, R.A., Mr. John James Burnet, A.R.S.A., and Mr. Edwin T. Hall, F.R.I.B.A., who will advise the Committee which is, in their opinion, the design most suitable for adoption, and unless some adequate reason exists to the contrary (of which the Council, with the advice of their assessors, shall be sole judge), the author of the said design will be appointed architect for the museum. The author of the design placed second by the assessors will receive a premium of 200*l.*, that placed third 150*l.*, and that placed fourth 100*l.*

POLYTECHNIC INSTITUTE, ARGENTINE REPUBLIC.

With reference to the notices on p. 312 of the *Board of Trade Journal* of February 18, and p. 429 of the issue of May 27, on the subject of an announcement inviting plans and offers for the construction of the Polyclinic Institute of José de San Martin, H.M. Consul at Buenos Ayres (Mr. A. C. Ross, C.B.), has forwarded a pamphlet containing the terms and conditions of the competition. The plans must be submitted before December 10. The pamphlet referred to may be seen by British firms interested on application at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.

BOOKS RECEIVED.

THE THEORY OF STRUCTURES. By R. J. Woods, M.E., M.Inst.C.E., with 157 illustrations. Pp. 276. (London: Edward Arnold. 10s. 6d. net.)

REINFORCED CONCRETE IN EUROPE. By A. Ladd Colby. Published by the Chemical Publishing Company, Easton, Pa. (London: Williams & Norgate. Pp. 260.)

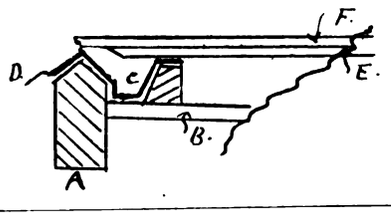
THE LEAD AND ZINC PIGMENTS. By Clifford Dyer Holley, M.S., Ph.D. Pp. 340. (New York: John Wiley & Sons; London: Chapman & Hall, Ltd. 12s. 6d. net.)

Digitized by Google

Correspondence.

SLATING.

SIR,—Replying to "Zax," I beg to say that I have executed high-pitched roofs and have not used soakers, but have provided secret gutters under the slates parallel with the hips; and before slating, the hips have been covered with lead and dropped into the gutter as shown,



lead indicated by thick line in the accompanying sketch. These gutters are on both sides of the hips, and made to discharge into the ordinary gutter. This is a very satisfactory method—A, hip; B, roof hoarding; C, gutter; D, lead; E, slate batten; F, slates.

ARGUS.

SIR,—If my advice to "Zax" does not come too late to be of service, may I tell him that in my experience slate and a half at the hips, or slates of such width as will allow each when cut to be secured by two nails, will produce a mitred hip perfect in form and perfectly secure against weather if properly executed? The employment of any "putty" or mastic bed will not only fail permanently to hold in its place a small triangular slate secure with one nail, but it will cockle up the hip, rendering the mitreing untrue, and its appearance unsightly. Soakers, I may add, are quite unnecessary.

C. J. T.

LONDON AND DISTRICT BOROUGH COUNCILS.

Brentford.—Dr. Henry Bott, the Medical Officer of Health, writes, in his annual report, that several blocks of insanitary property were reported upon during 1908 as being unfit for human habitation, and closing orders were made. Something accordingly had been done, he says, to remove a black spot from Brentford, but very much more will be required before the town can be modernised. There are scores of back-to-back houses very old and dilapidated which ought to be closed; some are built chiefly of wood, which are extremely dangerous in case of fire. The difficulty he found in dealing with any of these properties is the organised delay which is adopted. After he had inspected the houses, a letter is written to the owner, who promises to do everything required. He is so leisurely in doing this that he is pressed to make a beginning. Then he sends in a specification of what he thinks is necessary, which is always quite inadequate, and so the ball is kept rolling. Meanwhile it is hoped that this business will occupy the attention of the Medical Officer, and that he shall not worry the owners of other property as bad as this one. Although progress is thus slower than could be wished, Dr. Bott says he is determined to continue his efforts, and in the end overcome the passive resisters.

Greenwich.—Dr. E. G. Annis, the Medical Officer of Health, in his annual report, which has just been issued, makes the following remarks upon the nuisances arising from the London County Council sewers:—"This department still continues to receive complaints as to offensive smells emanating from the London County Council's main sewer as it passes through the borough. Communications have frequently passed between the two authorities. Conferences between the two authorities have been held, various promises have been made and withdrawn. Much trouble has been occasioned to this department in obtaining sites for the erection of ventilating shafts, both free and for a nominal charge, but up to the present nothing whatever has been done to abate this nuisance. Undoubtedly it must with truth be said that as far as nuisances of this sort are concerned in this borough, the London County Council, by means of their main sewerage system, are the most serious offenders. The following is an illustration of the peculiar methods at times adopted by the London County Council. This Council has had a sewer passing along Wellington-road, Charlton, for some time, and we have never received complaints with respect to any offensive smells emanating from the surface manholes of this sewer until the warm weather in the early part of the summer, when serious complaints began to be made by residents and others from this neighbourhood. The offensive emanations were readily traced to an open surface manhole in the roadway, and as the London County Council had recently taken into use their new outfall sewer, which crosses this road, having at this spot a surface ventilator in the roadway, it was thought that the smell came from the new County Council outfall sewer. I immediately wrote to the County Council officials drawing their attention to these complaints, when they very quickly replied that the smells emanated from our local sewer grating, and not from their surface ventilator, which was sealed up. This being such an unusual condition of affairs for our local sewer, an investigation was made, and it seems at the time the new outfall sewer, passing along the Wellington-road, Charlton, below this Council's sewer, which passes along the road, was constructed, a vertical connexion some 22 ft. long was made from the lower new outfall sewer up into the local Wellington-road sewer, this connexion being made entirely against the wish of this Council and their officers; thus this vertical shaft was passing a very objectionable odour from the County Council's new outfall sewer up into our local sewer, thence through our local sewer grating into the roadway; accordingly, although the smells evidently arose from the new outfall sewer, yet they emanated from our surface ventilator, and the County Council's reply to our complaint would seem to indicate that they would wish to make this Council responsible for the objectionable smells complained of. Needless to say, steps were immediately taken to satisfactorily deal with this vertical shaft. Unfortunately, it has been thought that this Council could take no action short of an action in the High Court, which doubtless would have to go to the highest Court, and thus occasion considerable expenditure; but during the year the opinion of Mr. A. MacMorran, M.A., K.C., has been taken, and as this indicates there may be another method for taking action, definite evidence upon which to base the case is now being collected. I certainly think it is a great pity that the London County Council, who profess to have the public health and the good of the public generally so much at heart, have not seen their way to do something, for even although it might turn out to be ineffectual, still the fact of having attempted something would show their willingness to act up to their profession in the matter, especially when measures, which it is thought would prove, at any rate, helpful could be adopted at a very trifling expense. It is with much regret that I have to place on record the fact that the large amounts of money expended by the County Council in providing the relief sewers through this district have not been entirely effectual. At times of sudden great rainfall, doubtless combined with certain states of the tide, we still find that the water from the sewers backs up and discharges into the yards and premises of the low-lying parts of this borough."

Ilford.—Dr. C. F. Stovin, the Medical Officer of Health, refers in his annual report to the extreme difficulty of obtaining suitable tips for the disposal of house refuse, and says the erection of a destructor is a matter of considerable urgency. During 1908 a new sewer was laid down along Fencepiece-road. This takes the drainage from several cottages that were formerly drained into cesspools, with overflows into ditches. In August there was a violent explosion at the sewage works, involving the destruction of one septic tank and some drainage to the neighbouring ones. Mr. A. J. Martin, M.Inst.C.E., was called in by the Council to report as to the cause, and gave as his opinion that it was due to the lighting back of the inflammable gases conveyed from the tanks to the boiler. He also made various suggestions to prevent a similar recurrence. The Wanstead Urban District Council's sewage works adjoin the boundary of this district in one portion, and during 1907 there were complaints of a nuisance arising from these works. During 1908 an enlargement of their contact-bed system was carried out, and, if properly managed, one would hope, Dr. Stovin writes, that there will be no recurrence of any trouble from these works.

Wimbledon.—The report of Mr. Henry Johnson, the Chief Sanitary Inspector, states that during the year the work of the department had been carried on in conjunction with property owners, agents, and builders with almost perfect harmony. Proof of this, Mr. Johnson says, was afforded by the very rare occasions on which legal proceedings had to be resorted to; 774 notices in respect of 1,038 houses were served in connexion with the abatement of nuisances under the Public Health Acts, and the remedying of contraventions of the by-laws and other statutes which are under the jurisdiction of an inspector. It was pleasing to note that it was only found necessary to serve 158 statutory notices respecting 189 houses at the instances of the sanitary authority, the experience being that, in the majority of cases owners of property are willing to carry out work when a request in the form of an ordinary letter is made. At 102 houses the drainage systems and sanitary fittings were entirely reconstructed, and repairs, in most instances of an extensive nature, were executed at sixty other houses. Every opportunity was taken to obtain, where possible, the covering with impervious material of the spaces round the back walls of dwellings, especially in the poorer streets. During the twelve months, this was carried out at 118 houses.

Woolwich.—Dr. Sidney Davies, the Medical Officer of Health, writes, in his annual report, that the fact that 3,113 notices were served under the Public Health Act, and that it was only necessary to take out a summons in one case to compel compliance with the notice, is evidence that the Public Health Department attains good results with a minimum of friction.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ADDINGHAM (Skipton).—School (4,000*l.*); architect, Mr. J. V. Edwards, Shire Hall, Wakefield.

Aintree.—Printing works (14,000*l.*); builder, Mr. H. Kelly, Walton, Liverpool.

Belfast.—Block of offices, Clyde Shipping Company; architect, Messrs. Graeme Watt & Tullock, 7A, Victoria-street, Belfast.

Birkenhead.—School, Brassey-street; builder, Mr. S. Rothwell, Birkenhead.

Boscombe.—Library; architect, Mr. C. Miles, Observer-chambers, Albert-road, Bournemouth; builder, Mr. F. Rigg, Portman-road, Bournemouth. Additions, Royal Hospital; architect, Mr. G. A. B. Livesay, Fair Vale-chambers, Christchurch-road, Bournemouth.

Bowburn.—Church; architect, Mr. J. W. Hays, Wingate.

Brimsdown.—Warehouse; architects, Messrs. C. Heathcote & Son, 110, Cannon-street, E.C.

Builth (Wells).—School (6,000*l.*); architect, Mr. C. W. Best, County Offices, Brecon.

Carrickmacross.—Church; architect, Mr. J. J. McDonnell, 27, Chichester-street, Belfast.

Coxledge.—Institute (2,000*l.*); architect, Mr. H. Gibson, Camden-street, North Shields.

Darlington.—Offices; architect, Mr. Bell, North-Eastern Railway Company, York.

Dewsbury.—Nurses' Home (6,000*l.*); Clerk to Guardians, Dewsbury.

Dover.—School; Mr. Hawke, Borough Engineer, Dover.

Earby.—Eighteen houses, Lower Croft; architects, Messrs. Warmwell & Sons, Earby.

Exeter.—Concert hall; architect, Mr. J. Cricker, Queen-street, Exeter. West of England Eye Infirmary (3,000*l.*); builders, Messrs. Stephens, Gore-street, Exeter.

Fenton (Staffs).—Fifteen houses, King-street, for Mr. James Shenton. Mission church, for Methodist New Connexion, Queen-street, Fenton.

Fishponds.—Church, St. John's; architect, Mr. E. H. Lingen Barker, Orchard-street, Bristol.

Forglen.—Extensions, public school; architects, Mr. W. L. Duncan, Hallhill House, Turiff, N.B.

Gateshead.—Hall (1,700*l.*); architect, Mr. P. Steinlet, Camden-street, North Shields.

Glasgow. — Laundry buildings (3,000*l.*); Messrs. Baikie & Hogg; architect, Mr. J. S. Hogg, 26, Frederick-street, Glasgow.

Grantham. — Secondary school (7,000*l.*); builders, Messrs. Corah & Sons, Loughborough.

Hanley Castle.—Power-station; architect, Mr. H. Berkeley, Hanley Castle, Banbury.

Helsby.—School (3,000*l.*); builders, Messrs. J. G. Davies & Co., Frodsham.

Hereford.—Additions, St. Nicholas Church; builder, Mr. E. W. Wilk, Went End Works, Hereford. Extensions, Bluecoat School; architect, Mr. W. Robinson, King-street, Hereford.

Heswall.—Lloyd's Bank premises; architects, Messrs. Grayson & Ould, James-street, Liverpool.

Launceston. — Restoration, St. Mary's Church; architect, Mr. E. H. Sedding, Plymouth.

Lochgarron.—Manse (1,750*l.*); architect, Mr. W. McKenzie, County-buildings, Dingwall, N.B.

Long Benton.—Twenty cottages; architect, Mr. H. Gibson, Camden-street, North Shields.

Longton.—Church and school; Vicar of St. John's, Longton.

Merside.—School; Mr. J. Taylor, County Surveyor, The Castle, Winchester.

Millbrook.—Restoration, old church; architects, Messrs. Cancellor & Hill, Jewry-street, Winchester.

Monton.—Secondary school (9,000*l.*); architect, Mr. H. Littler, Ribblesdale-place, Preston.

Digitized by Google

Newport (Mon.).—The Town Council has passed the following plans:—Three houses, Bryngwyn-road, and two houses, Methuen-road, Messrs. Habershon, Fawckner, & Co.; two shops, Chepstow-road, Mr. H. Budgen; additions to Sunny Bank, Dewsland-park, for Mr. W. J. Cookes, Sunny Bank; three houses, Queen-street, Mr. G. J. Stemp; additions to workshop, Ross-street, Mr. E. M. Linton. The following plans have been lodged:—Mr. W. Gardner, warehouse, Watchhouse-parade; Messrs. W. G. Hitchcox & Co., warehouse and alterations at 35, Llanarth-street; Mr. H. J. Griggs, billiard-room at Maindee Hotel, Chepstow-road; Mr. A. Swash, two houses, Oakfield-road; Messrs. E. Page & Lister, skating-rink, Stow-hill.

Oxford. — Residence (8,000*l.*); architects, Messsrs. Tollitt & Lee, St. Aldates-street, Oxford.

Romford (Essex).—Railway station buildings, Squirrells Heath; engineer, Great Eastern Railway Company, Liverpool-street, E.C.

Sabden.—Baptist chapel (6,000*l.*); architect, Mr. F. Parkinson, 9, Richmond-terrace, Blackburn.

Stanley (Perth).—School (2,000*l.*); architect, Mr. J. Duncan, Stanley.

Swanage.—School (1,700*l.*); builders, Messrs. H. & J. Hardy, Swanage.

Usk.—School (3,500*l.*); builder, Mr. H. Rees, Pontllanfraith.

Usworth.—Fifty houses (10,000*l.*); architect, Mr. S. Spain, Fawcett-street, Sunderland; builders, Messrs. Clark & Son, Ryhope.

Walkden.—Public offices; architect, Mr. J. T. Profitt, 9, Longley-road, Walkden.

Walsoken.—School; architect, Mr. H. Green, Castle Meadow, Norwich.

West Derby (Liverpool).—Lecture hall (1,500*l.*); builder, Mr. S. Webster, Bootle.

Weybridge. — Residence, Oatland Park (1,400*l.*); builder, Mr. H. J. Nicholson, Weybridge.

Whiteminster.—Residence; architect, Mr. E. Pryer, 15, Clarence-street, Gloucester.

ST. PANCRAS ELECTRICITY WORKS.

THE following paper, by Mr. S. W. Baynes, Chief Electrical Engineer, St. Pancras, was presented at the annual meeting of the Association of Municipal and County Engineers, held at the end of June, in the Town Hall, St. Pancras:—

The supply described herein was the first municipal undertaking established in the metropolis, commencing to supply in November, 1891. The original pressure at the consumers' terminals was 110 volts—three-wire system.

The design of the original scheme intended that there should be four generating-stations, the first being situate at Stanhope-street, off the Euston-road.

The original plant at this station consisted of eleven 80 kilowatt Willans triple-expansion high-speed engines, fed with steam from Babcock & Wilcox boilers, at 185 lb. working pressure. Some of these small engines have now been replaced by four, each 500 kilowatts, Willans & Robinson three-crank triple-expansion engines, coupled to Siemens continuous-sets.

In 1895 the second generating-station was started in conjunction with the dust destructor at King's-road, Camden Town. At the same time a five-wire system, distributing current at 110 volts, was inaugurated in connexion with this new station; but at a little later date the whole of the system was changed to 220-volts pressure at the consumers' terminals and 440 volts on the "outers," using three-wire distribution throughout. A few 110-volt consumers still remain, and these are supplied from the original station. This was the first undertaking in London to double the pressure of supply for lighting at the consumers' terminals, and so effect considerable economy in the amount expended on mains, only one-fourth the amount of copper being required.

In order to utilise, so far as practicable, the heat for generating steam from the dust destructor, three Lancashire boilers were installed at the low working pressure of 125 lb. per square inch. They were arranged to either use the heat from the dust destructor or to be fed with coal (at times of heavy load) in the usual way.

At a later date, however, it was found that the demands on the station were so considerable that the heat from the dust destructor was no longer of sufficient service, and its use was ultimately discontinued.

As stated, the original scheme contemplated four generating-stations to handle the load of the borough, therefore little or no provision was made for extending either of the two put down.

With the doubling of the pressure at the consumers' terminals and the opening up of two substations (one in the north and one in the southern district, operated with three-phase transmission at fifty periods, 5,200 volts) in July, 1903, the necessity for the further two generating-stations became extinct, and the intention now is to develop the King's-road works into the main generating-station, since its location is favourable to economies, due to easy access to the canal for condensing water and to the railway for obtaining coal, by means of an overhead track, now proposed to be constructed, direct into the bunkers.

It is unfortunate that in the lay-out some sixteen years ago these developments could not have been foreseen, for this station is so hemmed in with adjoining streets and the dust destructor that the only possibilities of extension have been to knock out the sides of the building and extend with a wing on the west and a wing on the east, so that the station as a whole does not present quite the convenient arrangement that it would have done had it been possible to extend in the other direction.

The present plant at the King's-road station consists of:—

One 2,000-kilowatt Willans & Robinson—Dick Kerr turbo alternator (2,800 kilowatts overloaded for three hours).
One 1,000-kilowatt Bruce Peebles motor converter.
One 1,000-kilowatt Parsons turbine coupled to two 500-kilowatt Parsons continuous-current machines.
One 1,000-kilowatt Parsons turbine coupled to two 500-kilowatt Siemens continuous-current machines.
Three Browett Lindley engines of 450 kilowatts each. Two being coupled to three-phase alternators, and the third to a continuous-current machine.
(These three machines are of the Allgemeine construction.)

The original station here consisted of:—

Three 180-kilowatt Belliss & Morcom continuous-current sets.
One 200-kilowatt Peachey continuous-current set.
Two 180-kilowatt Willans continuous-current sets.

All these engines, excepting the two Willans, have been displaced by the two 1,000-kilowatt turbines, bringing the plant up to date, the expenditure being met out of reserve fund.

The five original Lancashire boilers are still in use, with the addition of four water-tube boilers of the Babcock & Wilcox type. A further extension to the boiler-house is in contemplation, for as the works at present stand they are extremely short of boiler power, and therefore unable to handle the full load efficiently in consequence. The present four Babcock boilers are in a temporary boiler-house, where the space is much limited.

All the steam plant exhausts into suitable condensers, and the cooling water is obtained from the canal.

Each of the two substations is equipped with three motor converters of the Allgemeine type and one of Peebles-Lacour construction; the total capacity of each substation being about 1,000 kilowatts.

The whole of the high-tension plant has been in operation six years without the slightest trouble occurring.

There are three feeders running to each substation, and the capacity is so arranged that should one fail the other two can handle the full load by being slightly overloaded.

The total capital expenditure on the plant up to the financial year ended March, 1908, was:—

	£	s.	d.
On mains	235,230	4	6
On machinery	145,920	0	10
The output (units sold) year ended March, 1908	7,617,009	0	0
Revenue (units sold) year ended March, 1908	77,602	7	8
Net profit (units sold) year ended March, 1908	9,454	7	3
Combined capacity of both generating stations	8,280 kilowatts.		

General Building News.

ALL SAINTS' CHURCH, GREAT OAKLEY.

Messrs. Chancellor & Sons, of Ipswich, have been appointed to carry out an enlargement of the parish church, Great Oakley, in Essex. The church had originally a steeple constructed of flint, which, having become ruinous, was rebuilt.

NEW CHURCH, LITHERLAND, LIVERPOOL.

Lord Derby has given a site at the junction of Province and Monfa roads, in the parish of St. Philip, Litherland, for the erection of a memorial church, for which Miss Willox has given 10,000*l.* The plans and designs have been prepared by, it is stated, Mr. J. F. Doyle.

NEW CHURCH, DEVONPORT.

The foundation-stone of St. Chad's Church, Moon-street, Devonport, was recently laid. The new building will seat 350 persons. It will be of brick, with Portland stone dressing. The contract, secured by Pearn Brothers, Plymouth, is for 1,400*l.* The architect is Mr. G. Fellowes-Prynne.

PRIMITIVE METHODIST CHURCH, BROWN LEES.

The erection has been commenced of a new Primitive Methodist Church at Brown Lees. The buildings, the front and side of which are in best red pressed facing bricks, relieved with grey terra-cotta dressings, will cost about 1,600*l.* The buildings comprise the church, minister's vestry, an organ-chamber, and classrooms. The church is ventilated by means of extract air-pump ventilators on the roof, and fresh air inlets, and the classrooms and vestries by air grids; also most of the windows are made to open. The heating will be by low-pressure hot-water system, with radiator. The premises will be erected from the designs of Messrs. Elijah Jones & Jackson, architects, Hanley and Wellington (Salop). The contractor is Mr. Wm. Sherratt, of Smallthorne, Stoke-on-Trent.

GRAMMAR SCHOOL, ASHBOURNE.

The opening has just taken place of the new buildings of Queen Elizabeth's Grammar School, Ashbourne. The buildings were designed by Mr. E. M. Longsdon, Bakewell, and the builder was Mr. W. Thorley, of Noding. They have accommodation for about 130 scholars.

COUNCIL SCHOOLS, WHICKHAM.

New schools have been erected at Whickham by the Durham County Council. The schools, which have been built from the designs of Messrs. Marshall & Tweedy, architects, Newcastle, the contractor being Mr. J. A. M. Henderson, of Jarrow, consist of a mixed department for 400 children, and an infants' department for 200. The classrooms for fifty each are grouped round a central hall, and the infants have four classrooms for fifty each. There is also a cookery school. The cost has worked out at 9*l.* per head.

COUNCIL SCHOOLS, AMMANFORD.

A new Council school has been built at Ammanford. The school is a one-block structure, and will provide accommodation for 500 children. It is built of Ruabon bricks, with terra-cotta dressings, and contains nine classrooms, besides an assembly hall and master's and mistress's rooms, lavatories, porches, store rooms, and corridors. It is fitted throughout with low-pressure heating apparatus, has block floors, and glazed brick dados. The school was designed by Mr. W. Jenkins, of Llandilo, and the contractors were Messrs. Jones Brothers, Tirydail, Ammanford.

SURREY ARCHÆOLOGICAL MUSEUM.

The plans of the addition to the Surrey Archæological Society's Museum at Castle Arch, Guildford, recently came before the Guildford Town Council for approval. The building will be a single hall, one story high, 36 ft. long, by about 24 ft. wide, with main entrance from Quarry-street. The architect is Mr. Ralph Nevill, F.S.A. The building is planned so that the main roof and skylight will not be visible from the road, while the front on the road will be about the same height as the old brick wall, thus avoiding any interference with the view from the road of the present picturesque buildings. In addition to the proposal to pull down a portion of the old wall, room will have to be made at the rear for the accommodation proposed, but the old tiles are to be replaced and a slanting roof retained, so that the appearance of that part from the road will not be altered.

PAROCHIAL HALL, WALLSEND.

Premises suitable for parochial work are being built in connexion with St. Luke's, Wallsend. At present funds will not permit of more than half of the building being erected, and the portion to be carried out comprises the Parish Hall, ladies' parlour, classroom, and a spacious lobby. A kitchen, with cooking accommodation, and lavatory are provided at the rear of the building. The whole of this accommodation is on the ground plan, and the postponed portion of the scheme comprises a small hall to accommodate about 100 persons on the ground floor, and on the first floor a billiard-room for two tables, a large games-room, and lavatories, &c. The architects are Messrs. Frank Caws, Steel, & Caws, Sunderland, while the contractor for the general work is Mr. John Lant, Walker-road, and for the plumbing Mr. T. Hedderly, Wallsend.

COTTAGE HOSPITAL, FELIXSTOWE.

The foundation-stone has been laid of a new Cottage Hospital in Felixstowe. The building will contain on the ground floor matron's sitting-room and doctor's room, hall, two four-bed wards, and two private wards of one bed each, with duty-room between the large wards for proper supervision. There will also be an

Digitized by Google

operating-theatre, bathrooms, and sanitary conveniences, and store accommodation. On the first floor are nurses' sitting-room, four bedrooms, linen-room, kitchen, scullery, etc. The whole of the ground floor will be covered with the "Perfect" jointless flooring, and all internal and external angles will be rounded. Mr. H. J. Wright has prepared the plans for the work.

NEW BUILDINGS IN ABERDEEN.

The plans of the following new buildings in Aberdeen have been sanctioned:—Alterations in connexion with Ferryhill Foundry, Wellington-road, for Messrs. James Abernethy & Co., ironfounders, per Messrs. Kelly & Nicol, architects; two dwelling-houses on the east side of Abergeldie-terrace at its junction with Abergeldie-road, for Mr. A. Mason, builder, per Messrs. Cameron & Watt, architects; roller skating-rink on the south side of Sinclair-road, for Mr Harry MacMahon, photographer, per Mr. Charles Stephen, architect; alterations and additions in connexion with the Music Hall-buildings, Union-street, for the Aberdeen Music Hall Company, Ltd., per Messrs. Kelly & Nicol, architects; dwelling-house on the north side of Burnett-place, for Mr. A. B. Ferguson, butcher, per Mr. John Rust, architect; alterations in connexion with the premises Nos. 97-103, Union-street, for Messrs. Anderson & Thomson, warehousemen, per Mr. George G. Irvine, architect; alterations in connexion with the property, No. 65, Spital, for Mr. Charles Stewart, butcher, per Mr. J. Cooper, Merkland-road East; alterations in connexion with the premises, Nos. 32-34, Market-street, for Messrs. J. & A. Gibb, warehousemen, per Messrs. Kelly & Nicol, architects; two dwelling-houses on the south side of Devanha-gardens (South), for Mr. D. M'Millan, architect.

PROPOSED SHOP PREMISES, DONCASTER.

The Bridge Committee have recommended to the Council the acceptance of the plans of Mr. Brundell, architect, for the erection of two shops in the new Marshgate and Frenchgate road, on premises now occupied as an eating-house, and one shop between the new Bay Horse and Mr. Burdett's new shop at the foot of the bridge. The estimated cost is about 4,000*l.*

CLUB PREMISES, TUNBRIDGE WELLS.

The members of the Tunbridge Wells Club are now in occupation of new premises in London-road. Mr. Cecil Burns, architect, prepared the designs. Solid Austrian oak has been employed, all of which has been prepared and moulded in Messrs. Beale & Sons' workshops by their own workmen. The accommodation includes a hall, billiard, smoking, dressing, and committee rooms, porters' and steward's room, and a fitted cloakroom. All the sanitary arrangements are by Doulton. Messrs. Beale & Sons have been the builders.

CENTRAL READING-ROOM, DUNDEE.

The work of erecting the new Central Reading-room in Ward-road is expected to be begun immediately. The Joint Committee representative of the Town Council and of the Free Libraries have accepted the following tenders:—Mason work, Mr. D. K. Symington, Dundee; steelwork, Messrs. Fleming Brothers, Glasgow; joiner work, Messrs. John Stewart & Sons, Dundee; painter work, Mr. Allan Boath, Dundee; plumber work, Messrs. J. Farquharson & Son, Dundee; slater work, Mr. Charles Brand, Dundee; glazier work, Messrs. Donald & Smith, Dundee; heating, Mr. D. Keay, Dundee; fittings, Messrs. J. C. Aimer & Sons, Dundee; plaster work, Mr. Alexander Reoch, Dundee; electrical installation, Messrs. Maxwell, Son, & Co., Dundee. The tenders accepted amount to 11,217*l.* The plans of the new building have been prepared by Mr. James Thomson, the City Architect.

TRADE NEWS.

The British Uralite Company (1908), Ltd., have just shipped 200,000 tiles against one order to the Argentine, and 70,000 ft. to a West Indian port. They have arranged their plant to produce 1,000 tiles per hour.

The Children's Home for the Lancaster Union is being warmed and ventilated by means of Shorland's patent Manchester stoves, with descending smoke flues, the same being supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Sanitary and Engineering News.

NEW BRIDGE, EARLS COLNE.

The new ferro-concrete bridge, on the Hennebique system, over the river at Earls Colne, has been tested and opened for traffic. The new bridge, which is 53 ft. in length and 30 ft. wide between the parapets, replaces an old timber bridge, which had done duty for the past 120 years, but unfortunately was not equal to modern requirements, especially as regards heavy locomotive traffic. The bridge has been built from the design and under the superintendence of the County Surveyor, Mr. Percy J. Sheldon, the contractors being the Yorkshire Hennebique Contracting Company, Ltd., of Leeds; and it is not expected that the total cost will exceed 1,200*l.* Mr. W. Buck acted as clerk of the works.

WATER SUPPLY, KEITH.

In consequence of growing necessities for sanitary and trade purposes, a scarcity of water has for two or three years been experienced at Keith, especially in the high-lying parts of the town, and in December, 1906, the Burgh Surveyor, Mr. James Duncan, submitted a report to the Council on the question. Following that, Mr. Charles C. Doig, Elgin, was employed as engineer to report on the best method of increasing the supply, and the Council considered a number of proposals. There was ultimately adopted what is known as the Cairnhill and Whitewell scheme. The source of the new supply, which will be an augmentation to the existing supply, is in a group of springs in the Shenwall district of the parish of Cairnie, about five and a half miles from the burgh, and will add a supplement of 111,000 gallons per day. For the future wants of the town, provision has been made in the scheme for the utilisation of the adjacent Whitewell group of springs, which would add other 70,000 gallons per day to the supply, the plans adopted providing for the linking up of these when necessity demands it. A large reservoir will be constructed on the Cuthil lands above Seafield Park, which will be the centre of distribution for the whole town, and when it becomes necessary to take in the Whitewell springs a low-level reservoir will also be constructed at Fife-Keith, and the burgh will then be divided into a high and low level system. The cost of the scheme is estimated at between 4,000*l.* and 5,000*l.*, and by the end of September it is expected that the community will be reaping the benefit of the increased supply.

BANGOR WATER SUPPLY.

Bangor's new water supply from the new reservoir, which has been constructed at Ballysallagh, four miles from the town, was formally turned on a few weeks ago. The new reservoir covers an area of about 30 acres, and has a storage capacity of 75,000,000 gallons. A gravitation scheme has been adopted, and the total catchment area extends over about 11,000 acres, but at present the Council are only taking about three-tenths of the available supply. The water is filtered by three sand filters. The scheme was originally planned by the late Mr. L. L. Macassey, and after his death the supervision was entrusted to his son, Mr. V. W. Macassey, with Mr. F. W. M'Cullough, C.E., Engineer to the Belfast City and District Water Commissioners, as consultant; Mr. John Dalzell, C.E., was the resident engineer, and the contract was carried out by Messrs. H. & J. Martin, Ltd., contractors, Belfast. The entire cost of the undertaking was about 30,000*l.*

THE NEW SEWAGE SCHEME FOR LEEDS.

After considering the arguments of counsel and the evidence of experts for a month, Lord Robert Cecil, K.C., M.P., has decided that the Corporation of Leeds shall pay to the Hon. Edward Wood the sum of 149,644*l.* for the land they require at Templenewsam for the purposes of their sewage disposal scheme. There is thus nothing, says the *Yorkshire Post*, now to prevent the city authorities going forward with the work, and putting Leeds in a more favourable position with regard to rivers pollution than she has occupied in the past. It is estimated that the total cost of carrying out the project will be approaching a million and a quarter sterling, and when finished it will be the largest works in the kingdom for treating sewage by the bacteriological method.

Miscellaneous.

INTERNATIONAL HOUSING CONGRESS, MAY, 1910, VIENNA.

In accordance with the decision of the International Permanent Committee, the next International Housing Congress will meet in Vienna. The subjects to be discussed at the congress include:—(1) What conclusions may be drawn from past experiences on the development of parochial polity in the housing question, and in what way may these problems be solved? In answering this question it is to be shown broadly how far, in any particular country, the local authorities have looked into the polity of housing, especially with reference to (*a*) inspection of dwellings; (*b*) inclosing land (extension of the town); (*c*) land polity (acquiring land and keeping it as the property of the community); (*d*) taxation; (*e*) building by the community and the furtherance of co-operative building. The conclusions of the memorandum are to be collected as forming the principles of parochial polity in the housing question. (2) How is the credit for co-operative building to be organised? (*a*) From experiences gained in the country in question it is to be shown how great is the need for credit in co-operative building, *i.e.*, what proportion of the cost of building should the building society provide, and what is the highest rate of interest at which the co-operative building system can afford to borrow; (*b*) what are the sources of credit open to the co-operative building system; (*c*) to whom are the loans made and under what conditions; (*d*) what experience has already been gained with lending societies of various sorts, and what proposals do experts make for organising loans in future. (3) Cottage *versus* block dwellings. The experience is to be reported which has already been gained as to the respective advantages and disadvantages of cottage and of block dwelling from the technical, administrative, and social points of view. Especially is it to be shown whether any difficulties exist in letting cottages on account of the cost of building and repair, and how great is the danger of speculative enterprise if cottages are allowed to pass into private hands. (4) What measures can be recommended for diminishing the cost of erecting cottages? What are the means adopted in the country in question for lessening the cost of building cottages, with reference to (*a*) site; (*b*) construction; (*c*) materials? A distinction to be made between detached cottages and those built in rows or semi-detached. What progress has been made in the last five years in various lands in the conditions of housing? The report on this last question is intended to give a survey of the measures adopted by the Legislature and other authorities for the purpose of improving the housing of the working classes, and of the practical results of co-operative building. The memorandum is to be drawn up, not only with the object of collecting the necessary facts for dealing with the questions in the programme, but is to be the foundation of a reliable, continuous report on the progress of the conditions of the housing problem, which from congress to congress will keep one informed as to the success of improvements in all lands on this particular point. Steps have already been taken to secure expert judges from every country. The congress is expected to last four days, and will close on May 30, 1910. About 300 members are expected to attend.

GARDEN SUBURBAN CITIES, KESWICK AND BRISTOL.

A scheme is formulated for the erection at Keswick of artisans' cottages, to the number of about twenty-five, which will be let at rents of from 10*l.* to 25*l.* per annum. A site has been given by an inhabitant of Rochdale for the undertaking, which will cost about 4,000*l.* At Bristol a company is formed to purchase some 26 acres near Shirehampton Railway-station, where the area of each house plot will be about 340 sq. yds., and the rents will vary from 6*s.* to 10*s.* per week. The ground is within the limits of supply by the Bristol Waterworks Company, and electricity and gas supply is available also.

BIG RUSSIAN CANAL SCHEME.

Prince Scherbator, President of the Moscow Agricultural Society, has made application for a concession to cut a canal between Tsaritzin, on the Volga, to Kalatch, on the Don. To carry out this work he proposes to form a joint stock company, with a capital of 120,000,000r. (12,666,666*l.*). The length of the proposed canal is 80 versts (53 miles). The surface of the Don is nearly 80 ft. higher than that of the Volga, and the canal has to pass over a slight eminence. The great value of the scheme lies in this, that such a canal would join the 6,000 miles of the Volga water system with the Azov and Black Sea.

CHERBOURG STONE.

The British Consul reports that the trade in this stone has shown a slight falling off during the past few years. It had been suggested that this was attributable to German stone exported from the Rhine district taking the place of French material in the United Kingdom; but it turns out on inquiry that at the present time practically all foreign stone is being shipped to the United Kingdom in smaller quantities

Digitized by Google

than heretofore. British quarries have been particularly active during the last few years, and the preference for materials quarried in the home country is without doubt the reason for this. Cherbourg quartzite is still extensively used, and is in high esteem in France. It is extremely hard and durable, and appears to give an excellent road, whilst its bright and cleanly appearance is sure (the Consul thinks) to maintain for it popularity in the United Kingdom.

BUILDING IN SYRIA.

The annual report of the British Vice-Consul at Tripoli (Syria) says that there is a great demand in Tripoli for Portland cement and hydraulic lime. Building operations have increased to such an extent that the lime-burners cannot meet the demand. Stone for building is also getting very scarce, owing to the emigration of quarrymen, a fact which may be of interest to manufacturers of stone-making machines. The price of stone has increased 50 per cent.

ALTERATIONS TO BURLINGTON HOUSE.

In the House of Commons on Wednesday last week, Mr. Courthope asked the first Commissioner of Works what was the original cost of Burlington House, and what sums had subsequently been expended on structural and other alterations to this building.—Mr. Harcourt: The total cost of the block of buildings known as Burlington House, now occupied by the Royal Academy, the learned societies, and the Civil Service Commission, was 435,212*l.* The Trustees are responsible for the cost of all repairs to the portion occupied by the Royal Academy. There has been no charge on public funds on account of structural alterations to the portion occupied by the learned societies. Various alterations were executed for the London University at a cost of 4,051*l.*, including fittings, etc., and upon the transfer of that part of the building to the Civil Service Commission the works of adaptation cost 14,016*l.* Mr. Courthope: Are we to understand that the Government has no financial responsibility for repairs which, judging from the noise, are continually going on?—Mr Harcourt: I have said what exactly are the repairs for which we are responsible.

BUILDING IN THE UNITED STATES DURING 1908.

A report issued by the U.S. Geological Survey on the clay-working industries, contains statistics as to the cost of buildings erected last year in forty-eight large cities, the total amounting to 110 million pounds in round numbers. Large as it is, this aggregate falls short of the figures for 1907 by 12·73 per cent. The number of permits and the cost of buildings erected in each of the cities are shown in the following table:—

City.	Permits.	Value. Dols.
Atlanta	4,153	4,833,941
Baltimore	2,893	7,554,709
Boston	2,632	11,253,712
Brooklyn	10,769	45,865,240
Buffalo	2,788	6,847,000
Cambridge	425	2,153,070
Chicago	10,627	67,234,800
Cincinnati	3,553	6,428,888
Cleveland	6,674	9,896,869
Columbus	1,698	3,400,273
Dayton	1,193	3,234,280
Denver	3,117	10,098,020
Detroit	3,662	10,682,170
Fall River	399	1,140,927
Grand Rapids	1,064	2,181,759
Hartford	676	3,107,348
Indianapolis	4,013	5,895,928
Jersey City	1,367	4,490,466
Kansas City	792	1,108,472
Kansas City (Mo.)	3,840	10,562,041
Los Angeles	7,371	9,931,377
Louisville	2,909	2,914,141
Lowell	497	1,019,081
Memphis	2,519	3,300,508
Milwaukee	4,169	10,065,669
Minneapolis	5,632	10,093,915
Nashville	4,215	1,969,505
Newark	2,419	7,161,668
New Haven	919	3,091,465
New Orleans	2,457	5,744,311
New York	6,103	117,819,382
Omaha	1,526	4,590,650
Philadelphia	13,363	28,152,265
Pittsburg	4,023	13,136,387
Providence	1,286	4,034,000
Reading	571	497,700
Richmond	1,330	3,169,431
Rochester	1,302	4,975,317
St. Joseph	678	1,717,727
St. Louis	9,119	21,190,369
St. Paul	—	7,625,538
San Francisco	6,729	31,668,341
Scranton	892	2,366,405
Seattle	7,901	13,777,329
Syracuse	1,291	3,317,195
Toledo	1,065	2,081,448
Washington	5,258	10,800,096
Worcester	1,102	2,286,261
Total	163,087	546,467,390

Adding the cost of buildings in New York and Brooklyn, the total for the two cities is 163,684,622 dollars, or about 30 per cent. of the forty-eight cities included in the table. Chicago takes rank after New York, being followed at some distance by San Francisco and Philadelphia. The small city of Seattle exhibits considerable progress, attributed to low prices of material and labour, but we imagine other causes must also be credited with a share of the activity there displayed. Of the permits issued or buildings erected, 38·64 per cent. were for fire-resisting structures and 61·36 per cent. for timber construction, the average cost per building being 9,039 dollars and 2,101 dollars respectively. The following figures represent the number and average cost of brick buildings in three important cities:—

	Number of Buildings.	Cost per Building. Dols.
Chicago	8,208	6,818
Philadelphia	6,778	3,308
New York	1,884	54,705

The largest number of permits for timber buildings was issued at Seattle, the average cost for each of the 7,777 buildings authorised being 1,000 dollars. Los Angeles came next with 4,679 timber buildings, with the average value of 1,383 dollars each. Despite recent experience, San Francisco employed timber largely at the average cost of 3,641 dollars per building. Philadelphia is credited with only forty-five timber buildings, at the average cost of 1,482 dollars each, and Reading takes the place of honour in the respect of having sanctioned no timber buildings during the year.

BRICK CLAY AND THE BUDGET.

Mr. Montgomery asked the Chancellor of the Exchequer whether, in view of the facts that Mr. Justice Buckley, in the case of the Great Western Railway Company *v.* Blades, in 1901, said that within the decision in the case of the Glasgow Corporation *v.* Farie, in 1888, the same clay may be a mineral in one district and not in another, and that both these cases are cited in that of the Great Western Railway Company *v.* the Carpalla United China Clay Company, Ltd., to which the Government has referred for the general meaning of the word mineral, and that no common brick clay has, since 1888, been held to be a mineral for the purpose of receiving compensation under the Railways Clauses Consolidation Act of 1845, he would specifically declare common brick clay not to be a mineral for the purposes of the Finance Bill.—Mr. Lloyd George, in a written reply, stated there is no doubt that brick clay is a mineral in the ordinary acceptation of the term, and it is not proposed in the Finance Bill to make any exception in favour of brick clay. The cases referred to do not affect the general question. They merely decide that, for the purposes of undertakings for which land is acquired under the Railways Clauses Consolidation Act or the Waterworks Clauses Consolidation Act, brick clay forming the surface of the earth is to be treated as land to be acquired under the ordinary provisions of those Acts, and not as minerals, which are subject to special provisions.

THE WHITGIFT HOSPITAL, CROYDON.

A letter has been addressed by the Local Government Board to the Town Clerk of Croydon regarding the proposal to demolish the ancient Whitgift Almshouses in carrying out a street improvement scheme. The communication states that it appears there is a strong desire, in which the Town Council concur, that a poll should be taken before the compulsory powers are applied for which would be requisite to enable the suggested street improvement to be carried out, with the consequent demolition of the almshouses. Hence the Town Council would prefer to proceed by a Bill for a local Act, to the promotion of which the consent of the parochial electors would be necessary, rather than by means of a provisional order under the Public Health Act, 1875, to which no such consent would be required. The Board, the letter adds, do not wish to offer any objection to the procedure by the Bill, should the Council decide to follow that course.

EXCAVATIONS AT OLD SARUM.

The systematic excavation of the site of Old Sarum, which has been undertaken by the Society of Antiquaries, with the co-operation of the Wiltshire Archæological Society, is to be commenced at once, and will probably be carried on until the end of September of this year. If a sufficient research fund is forthcoming, the excavations will be continued for several years. The direction of the work is to be in the hands of Colonel Hawley, F.S.A., Mr. W. H. St. John Hope, M.A., and Mr. Mill Stephenson, F.S.A., the three delegates appointed by the Society of Antiquaries, one of whom will always be present to superintend the actual excavation. It is proposed that the whole site—the Norman castle, cathedral, and city, as well as the earlier earthworks, and whatever remains may exist on the hill of the Saxon, Roman, and pre-historic periods—shall be scientifically and exhaustively examined.

ROMAN REMAINS ON HUMBERSIDE.

A short time ago the waters of the Humber estuary changed their course, and at one point on the North Lincolnshire shore this caused the washing away of an accumulation of silt which had not previously been disturbed for a quarter of a century. At low-water mark, and resting upon the old bank, a working-man antiquary recently found a well-made vase of typical Roman grey-ware. It was unusually globular in shape, and amongst the mud inside were six silver coins and a silver ring. The coins are remarkable for their excellent state of preservation, five of them being in mint condition. All except one (Valens), which is an inch in diameter, are of the usual size of Roman silver coins, viz., about as large as a sixpenny piece. These have been examined by Mr. C. W. Fennell, and are referable to Valens (A.D. 328-378), Valentianus (A.D. 321-375), Julianus II. (331-363), Constantius II. (317-361), and Gratianus (359-383). The ring is also as good as new, and is of solid silver. It has a solid square bezel, upon which is inscribed a crude representation of the dove and olive branch, indicating Christian influence. The specimens are now in the Hull Museum.

Capital and Labour.

STATE OF EMPLOYMENT IN THE BUILDING TRADES.

Employment in July remained slack generally except with painters, who continued fairly well employed. It showed little general change compared with a month ago and a year ago. The percentage of trade union carpenters and joiners unemployed at the end of June was 10·0 as compared with 10·4 a month ago and 11·1 a year ago; and for plumbers, at the same dates, the percentages were 14·6, 14·1, and 11·9 respectively. These percentages were usually exceeded in London, the northern counties, Scotland, and Ireland. Returns received from bricklayers, masons, and labourers' unions show a decline compared with a month ago. For London the trade union returns show that 11·8 per cent. of carpenters and joiners were unemployed at the end of July, as compared with 13·5 a month ago and 15·6 a year ago; the corresponding percentages for plumbers were 20·0, 17·5, and 13·4. Returns received from 664 firms employing 39,335 workpeople at the end of July show that there was an increase of 4·0 per cent. in the total number employed by them as compared with a month ago, and a decrease of 8·7 per cent. as compared with a year ago. The increase compared with a month ago was chiefly in the London district, while the decrease compared with a year ago was most marked in the Lancashire and Cheshire district.—*Board of Trade Labour Gazette.*

Patents.

APPLICATIONS PUBLISHED.*

15,628 of 1908.—The Coslett Anti-Rust Syndicate, Ltd., and Thomas Watts Coslett: Treatment of iron or steel for preventing oxidation or rusting.

16,853 of 1908.—Crow, Harvey, & Co., Ltd., and Alfred Paton Costigane: Machines for straightening bars and tubes.

16,865 of 1908.—Henry Adolphus Tristram: Stair treads and like surfaces of wood.

17,242 of 1908.—David Armstrong: Adjustable fire-blower or screen for increasing the air draught in chimneys of dwelling-houses, and to prevent smoky chimneys.

18,412 of 1908.—Robert Johnson, John William Johnson, and George Johnson: Method of shaft sinking and lining by ferro-concrete tubing.

24,576 of 1908.—John Marson Lamb: Bricks or blocks for building purposes.

27,902 of 1908.—Sigmund von Medvecsky: Process of producing a fireproof concrete compound.

889 of 1909.—Hugo Sack: Rolling of bars or girders of I-section, and apparatus therefor.

3,858 of 1909.—William Calway: Building of concrete, cement, and like walls

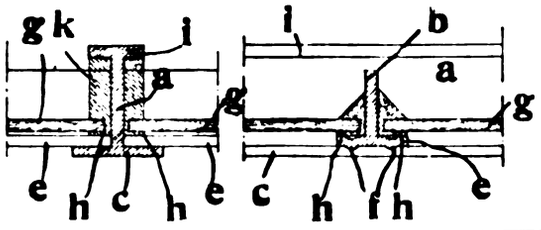
5,585 of 1909.—Hugo Schulte-Steinberg: Process of moulding bricks.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

5,826 of 1909.—Frederick Rings (communicated by Emil Preiss): Walls.

6,005 of 1909.—Alfred Emanuel Lindau: Bar for reinforcing concrete.

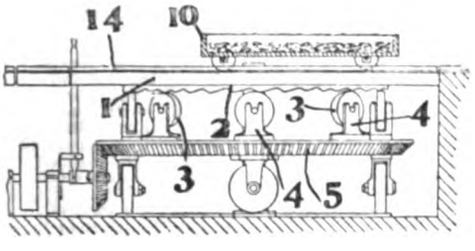


10,824 of 1909.—William Henry Baxter: Screens employed for screening or grading crushed or broken stone or ore, or like material.

12,328 of 1909.—William Thomas Edward Barker and Joseph Blanchet Rowell: Chimney and ventilating shaft tops.

SELECTED PATENTS.

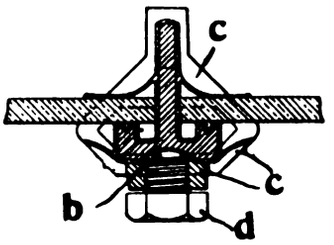
7,153 of 1908.—William Brebner: Manufacture of concrete blocks or slabs. This relates to a mould-shaking apparatus for artificial stone blocks, wherein the shaking table 1 is vibrated vertically by means of wheels 3 mounted in bearings 4 on a rotating wheel 5, coacting with a serrated circular track 2 fixed to the underside of the table. The track 2 and



wheel 3 may alternatively be mounted on the wheel 5 and table 1 respectively. Two such tables are employed side by side, and the moulds 10 are moved across both tables on rails 14. The serrations of the track 2 may be of different contours to produce different effects, and the track may be composed of sections, the contours of the serration of the sections being, if desired, periodically varied.

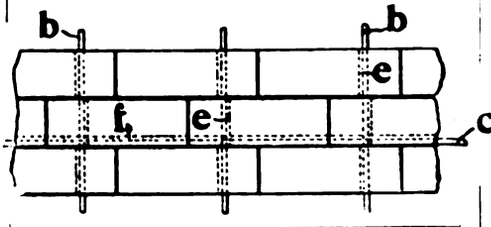
7,463 of 1908.—Francis Dring: Machinery or apparatus for the manufacture of artificial stone, concrete, or other building blocks. This relates to moulds having hinged sides *a*, which are closed by the action of a vertically moving frame b^1 carrying extensions *b* engaging ribs on the mould sides, and consists in providing detachable face-plates *c* with bosses c^1, so that they may be secured to the mould sides, without being in full surface contact therewith, by means of screwed pins *h*. The mould sides are forced together and held rigidly at the end projections *f*, which fit into corresponding depressions in the flanges *e*, to prevent relative movement of the parts. In glazing, the glass *g* is laid on a layer of putty or other cement *h*, another layer of putty *k* being used to fill the space between the glass and the upper flange *i*.

7,522 of 1908.—Henry Hope & Sons, Ltd., and John Arthur Hope: Glazed roofs. This relates to the shoes which secure the lead-covered glazing bars to the purlins. In order to prevent relative movement between the



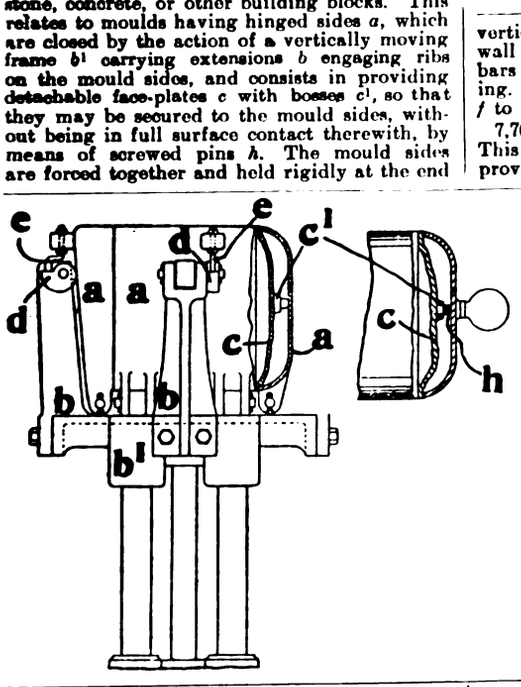
shoe and the glazing bar without inserting screws, etc., through the lead cover the bar is recessed at *b* and the end of a set-screw d, engaging a threaded hole in the shoe, enters the recess.

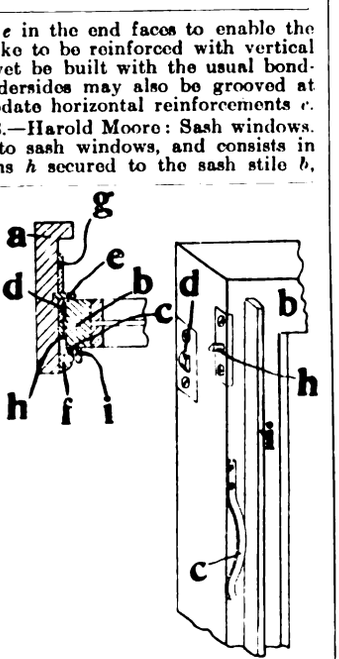
7,590 of 1908.—Charles Marius Jean Roch and L. G. Mouchel & Partners, Ltd.: Building of walls and other like structures of bricks, tiles, and slabs. This relates to bricks for walls and other constituent parts of buildings, tanks, chimneys, and piers, which are formed with



vertical slots *e* in the end faces to enable the wall or the like to be reinforced with vertical bars *b*, and yet be built with the usual bonding. The undersides may also be grooved at *f* to accommodate horizontal reinforcements *c*.

7,765 of 1908.—Harold Moore: Sash windows. This relates to sash windows, and consists in providing pins *h* secured to the sash stile *b*,

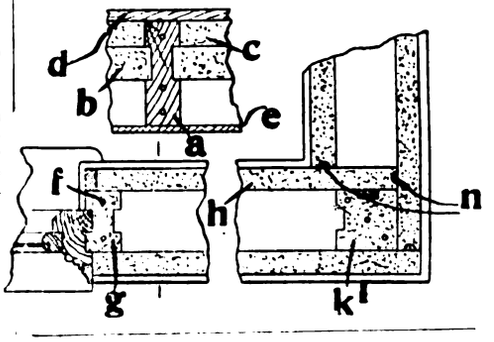




of the vertical movement of the frame b^1 by the engagement of eccentric wheels or cams *d* on the extensions *b*, with adjustable projecting pins *e* on the sides.

7,521 of 1908.—The Firm of David Hirsch: Iron-frame windows. This relates to window frames which are constructed of I-section bars *a*, the central webs of which are perforated to receive inverted T-section crossbars *b*, the flanges *e* of which rest upon the flanges *e* of the bars *a*. The flanges *e* are provided with which pins are pressed into engagement with racks *j* on the frame *a* adjacent to the parting-bead *e* by band springs *c* attached either to the face of the sash stile or to the stop bead *f*. To raise or lower a sash, it is pulled forward against the action of the springs *c*, so that the pin *h* is clear of the rack teeth, the sash then being free to move vertically. Rollers *d* may be provided on the sashes to reduce friction, and a strip *i* may be secured to the face of the sash tile to reduce draught.

8,245 of 1908.—George Edward Clare: Reinforcing concrete walls, floors, fencing, and the like. This relates to concrete structures of the slab and grooved-post type. Concrete walls are formed of grooved posts or studs k^1, and cement slabs *h*, which may be slid down in the grooves *g* for single walls or nailed to the faces of the posts for double walls. The posts are reinforced by twisted, square, flat, or round rods *f*, or by two rods twisted together, and the slabs by wire netting; the slabs are tongued and grooved on the top and bottom edges and have grooves *n* on the vertical edges to receive cement grouting. Window and door



frames may be fitted into the grooves *g*. In constructing floors the slabs *b*, supported by wooden or concrete joists *a*, carry a cement filling *c*; the lower face is covered by slabs *e*, and the upper face by boards *d*.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

August 7.—By SALTER, SIMPSON, & SONS (at Norwich).

Little Frensham, Norfolk.—Old Hall Farm, 294 a. 2 r. 39 p., f.	£7,100
The Lower Farm, 210 a. 3 r. 19 p., f. and c.	3,700
Cottage and arable land, 21 a. 1 r. 29 p., f.	530
The Post Office and 2 r. 38 p., f.	150
Four cottages and enclosures, 2 a. 3 r. 31 p., f.	530
The Crown Inn and 3 a. 3 r. 12 p., f.	525

August 10.—By COOKE BROS. & ROBERTS (at Newtown).

Newtown, Montgomery.—Woodside, f.	650

August 12.—By R. W. DENYER & Co. (at Maidstone).

Goudhurst, Kent.—Hop, fruit, and pasture land, 22 a. 3 r. 15 p., f.	300
Two cottages and pasture land, 12 a. 1 r. 0 p., f.	340
Cranbrook, Kent.—Two cottages and 1 a. 0 r. 16 p., f.	135
Maidstone, Kent.—8 to 16 (even), Allen-st., f., w.r. 80*l.* 12*s.*	845
East Peckham, Kent.—Yew Tree-cottages, f., y. and w.r. 23*l.*	205
The Forge and house adjoining, f., q.r. 16*l.*	210
Rose Villa, f., q.r. 15*l.*	350
Walnut Cottage, f., q.r. 5*l.*	200
Burnt House, f., q.r. 12*l.*	185
Nettlestead, Kent.—Nightingale-cottages, f., w.r. 13*l.*	200
Lenham, Kent.—West-st., two cottages, f., w.r. 16*l.* 18*s.*	200

WITTON & LAING (at Chudleigh).

Chudleigh, Devon.—Culver House and Culver Cottage, 8 a. 0 r. 16 p., f.	2,000
Herridge Orchard, 3 a. 0 r. 27 p., f.	470
New Exeter-st., five cottages, f.	565
Burgages Farm, 8 a. 2 r. 11 p., f.	995
Pasture and arable land, 8 a. 0 r. 30 p., f.	860

By DICKINSON, RIGGALL, & DAVY (at Brigg).

Goxhill, Lincs.—Two farms, 86 a. 0 r. 17 p., f.	2,640
Bottesford, Lincs.—Freehold farm, 28 a. 0 r. 15 p.	1,010

August 16.—By OFFIN & RUMSEY.

Rayleigh, Essex.—Enclosure of pasture land, 18 a. 1 r. 8 p., f.	1,325
Canewdon, Essex.—Norpitts Farm, 370 a. 2 r. 17 p., f.	2,500
Great Burstead, Essex.—New Lodge and 42 a. 3 r. 14 p., f.	1,985
Three enclosures of pasture land, 6 a. 0 r. 27 p., f.	440
Six cottages and two enclosures of land, f.	825

August 18.—By BALLS & BALLS (at Braintree).

Finchingfield, Essex.—Sculpins Farm, 186 a. 3 r. 17 p., f.	1,900

By GEORGE S. ANDREWS (at Wells-next-Sea).

Wells-next-Sea, Norfolk.—The Buttlands, four houses, f.	750
Freeman-st., seven cottages and shop, f.	430
Staithe-st., residence and shop, f.	950

August 19.—By NEWBON, SHEPHARD, & EDWARDS.

Holloway.—13 and 15, Archibald-rd., u.t. 58 yrs., g.r. 15*l.*, y. and e.r. 84*l.*	630
63, Hilldrop-cres., u.t. 44 yrs., g.r. 9*l.*, e.r. 55*l.*	255
Barnsbury.—2, Matilda-st., u.t. 31½ yrs., g.r. 1*l.* 3*s.*, y.r. 34*l.*	200

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xvi.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 1.—**New Cross, S.E.**—The Council of the Metropolitan Borough of Deptford invite designs for a Branch Library at New Cross. Premiums of 50*l.*, 25*l.*, and 10 guineas. Limited to architects practising in the City or County of London. Conditions from Mr. Vivian Orchard, Town Clerk, Town Hall, New Cross-road, S.E. For further particulars see advertisement in our issue of June 12.

SEPTEMBER 28.—**Lyminge.**—SEWAGE DISPOSAL.—The Elham R.D.C. invite schemes and estimates for the disposal of the sewage of Lyminge Parish. Mr. R. Lonergan, Clerk, 11, Cheriton-place, Folkestone.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

* NO DATE.—**Cardiff.**—NATIONAL MUSEUM.—Competitive designs are invited for the erection of a new National Museum at Cardiff. Three premiums are offered. See advertisement in this issue for further particulars.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

* NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. See advertisement in this issue for further particulars.

NO DATE.—**Eltham, Kent.**—PARISH HALL.—The Committee invite designs for a Parish Hall. Particulars may be obtained from Mr. G. Nelson Prior, Hon. Secretary, Walcombe, Lassa-road, Eltham. For particulars see advertisement in our issue of August 21.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

AUGUST 30. — **Widnes.** — SCHOOL WORKS.—The Widnes Education Committee invite tenders for:—(*a*) The removal of the gallery in the boys' department of the St. Bede's R.C. School, Widnes; (*b*) the alterations to the windows of the West Bank Council School, Widnes. Plans, etc., may be seen at the Education Office, Town Hall, Widnes.

AUGUST 31.—**Barton-upon-Humber.**—WALL, ETC.—The Barton-upon-Humber U.D.C. invite tenders for the construction of a retaining wall and clough door in the butts drain, where it joins the Barton Haven, for the purpose of a sluice. Plans, etc., are deposited at the office of Mr. D. Houghton, the Surveyor to the Council.

AUGUST 31.—**Coity.**—WALL.—For erection of a boundary wall, 400 yds. in length, or thereabouts, at Spencer-road, Coity, near Bridgend. For particulars apply to Mr. S. David, Bryn Garw, Coity, near Bridgend.

AUGUST 31. — **Plymouth.** — ALTERATIONS AND REPAIRS.—The Guardians of the Poor of the Town of Plymouth invite tenders for certain alterations and repairs required at 36, Looe-street. Drawings, etc., may be seen at the offices of the architect, Mr. F. A. Wiblin, 92, Old Town-street, Plymouth.

AUGUST 31.—**Sandbach-Heath.**—SCHOOL WORKS.—Alterations to Sandbach-Heath Church of England Schools. Plans can be seen, and bill of quantities obtained, on application to Messrs. Alfred Price & Son, architects and surveyors, Sandbach, on payment of 10s. 6d.

AUGUST 31.—**Tavistock.**—HOUSE.—Erection and completion of a small detached house at Marytavy, Tavistock, for Mr. J. Collins. Plans, etc., may be seen by appointment at Palmer House, Marytavy, or the offices of Mr. Morley B. Collins, architect, Clinton-road, Redruth.

SEPTEMBER 1.—**Llwynypia.**—PREMISES.—Erection and completion of business premises at Llwynypia for Mr. E. J. Stockwell, butcher, Tonypandy. Mr. R. S. Griffiths, M.S.A., architect and surveyor, Tonypandy.

SEPTEMBER 1.—**London.**—SKITTLE ALLEY, ETC.—The Metropolitan Asylums Board invite tenders for constructing a new skittle alley and iron shelter at the Northern Convalescent Fever Hospital, Winchmorehill, N., in accordance with drawing, etc., prepared by Mr W. T. Hatch, M.Inst.C.E., M.Inst.M.E., Engineer-in-Chief. The drawing, etc., may be inspected at the office of the Board, Embankment, E.C., and can then be obtained upon payment of a deposit of 1*l.*

SEPTEMBER 1. — **Londonderry.** — HALL. — For a pavilion music-hall at Strand-road for Mr. John Mulholland. Plans, etc., to be seen at the offices of Mr. J. P. M'Grath, C.E., architect, 6, Castle-street, Londonderry.

SEPTEMBER 1. — **Londonderry.** — REBUILDING.—For rebuilding stores at Chamberlain-street, Londonderry, for Mr. John M'Geady. Plans, etc., to be seen at the offices of Mr. J. P. M'Grath, architect, 6, Castle-street, Londonderry.

SEPTEMBER 2. — **Golcar.**—HOUSES.—Works, except masons', required in the erection of four dwelling-houses in Longcroft-road, Golcar. Plans may be seen, and quantities obtained, at office of Mr. Arthur Shaw, architect, Golcar.

SEPTEMBER 2.—**Wincanton.**—HOSPITAL BUILDINGS.—Wincanton District Isolation Hospital Committee invite tenders for new hospital buildings, to be erected on a site at Wincanton, together with roads, drains, fences, etc. Plans, etc., may be seen at office of Mr. Arthur J. Pictor, A.R.I.B.A., Bruton, Somerset, when bills of quantities may also be obtained by payment of a deposit of 1*l.* 1s.

SEPTEMBER 3.—**Crooksling, Brittas.**—SANATORIUM.—The Dublin Joint Hospital Board invite tenders for the erection of sanatorium buildings of wood and iron at Crooksling, Brittas. Plans, etc., may be examined, and full particulars may be obtained, on application to the offices of the Board, Municipal Buildings, Cork Hill, Dublin.

SEPTEMBER 3. — **Gelli.** — TEMPORARY IRON SCHOOL BUILDING.—Rhondda U.D.C. invite tenders for the provision and erection of a temporary iron school building in the playground of the Gelli Boys' School. Full particulars, etc., may be obtained upon application to Mr. Jacob Rees, architect, Hillside Cottage, Pentre, Rhondda, at which address the design may also be seen.

SEPTEMBER 4.—**Cwmbach.**—ALTERING, ETC., CHAPEL.—Altering and renovating "Bryn Sion" Chapel Cwmbach, near Aberdare. Plans, etc., may be seen either at office of Mr. T. Roderick, architect, Clifton-street, Aberdare, or with Mr. W. James, 5, Rose-row, Cwmbach.

SEPTEMBER 4.—**Ely, Cardiff.**—ADDITIONS, ETC., TO WORKHOUSE.—The Guardians of Cardiff Union invite tenders for making additions and alterations at Ely Workhouse, according to plans, etc., prepared by their Architect, Mr. Edwin Seward, F.R.I.B.A., Queen's-chambers, Cardiff, from whom bills of quantities, etc., may be obtained on payment of 1*l.* 1s.

SEPTEMBER 4. — **Llwynypia.** — ALTERATIONS, ETC. — Tenders are invited for alterations and additions to No. 13, Llwynypia-road, Llwynypia, for Mr. J. J. Reinecke. Plans, etc., to be seen at office of Mr. R. S. Griffiths, M.S.A., architect and surveyor, Tonypandy.

SEPTEMBER 6.—**Derby.**—ALTERATIONS AT WORKHOUSE.—The Board of Guardians invite tenders from Derby builders for making certain alterations at the Union Workhouse and for the erection of a small ward thereat. Plans may be seen, and specification, etc., obtained, from Mr. F. C. Coulthurst, architect, 4 Albert-street, Derby, on payment of a deposit of 1*l.* 1s.

SEPTEMBER 6. — **Pontlottyn.** — ALTERATIONS, ETC.—Alterations and extensions, including the building of a new schoolroom and classroom, to the Primitive Methodist Chapel, Pontlottyn. Plans, etc., may be seen with Mr. Tippett, Trevor Villa, Pontlottyn, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff.

SEPTEMBER 6. — **Pontypool.** — ALTERATIONS, ETC. — Alterations and additions to the Monmouthshire Reformatory, Little Mill, Pontypool. The plans, etc., can be inspected at the Reformatory, and at the office of the architect, Mr. W. H. D. Caple, F.R.I.B.A., of 2, Church-street, Cardiff.

* SEPTEMBER 6.—**Royston.**—SCHOOL.—The Hertfordshire Education Committee invite tenders for erection of a school at Royston. See advertisement in this issue for further particulars.

SEPTEMBER 7. — **Colbren.** — CHAPEL.—Erection and completion of a new Welsh Baptist Chapel at Colbren, near Seven Sisters, *vid* Neath. Plans, etc., may be seen with Mr. R. Jeffreys, Penygraig Farm Colbren, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff.

SEPTEMBER 8. — **Brechin.**—POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the erection of a new Post-office, Brechin. Drawings, etc., may be seen on application to the Postmaster, Brechin. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Parliament-square, Edinburgh, on payment of 1*l.* 1s.

* SEPTEMBER 8. — **Brentwood.** — COOKERY, ETC., CENTRE.—The Essex Education Committee (Billericay District Advisory Sub-Committee) invite tenders for a cookery and woodwork centre at Brentwood. See advertisement in this issue for further particulars.

SEPTEMBER 9. — **Hartlepool.**—ALTERATIONS TO PUMP WELL.—The Guardians invite tenders for alterations to pump well at the Workhouse, and from engineers for fitting up two pumps and supply necessary fittings. Plan, etc., may be seen at the office of the Architect to the Board, 8, Fountain-terrace, West Hartlepool.

SEPTEMBER 10. — **Stanley, etc.** — SCHOOL WORKS.—The West Riding Education Committee invite whole or separate tenders for the following works:—Stanley, Outwood Provided School, alterations and asphalting (joiner and asphalter); Bolton-on-Dearne, Goldthorpe Provided School, new heating apparatus and heating chamber (builder and heating engineer). Plans may be seen, and specifications with quantities obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

SEPTEMBER 11. — **Coleraine.** — ORANGE HALL.—Erection of a new orange hall at Coleraine for the Building Committee. Plans, etc., can be seen at the office of Mr. S. J. M'Faddon, C.E., architect, Queen-street, Coleraine.

SEPTEMBER 13.—**Birmingham.**—MATRON'S HOUSE.—The Guardians invite tenders for the erection of a matron's house at their Infirmary, Dudley-road. Plans can be seen, and particulars obtained from the architect's, Mr. W. H. Ward, Paradise-street, Birmingham.

SEPTEMBER 14. — **Hartlepool.** — SCHOOL WORKS.—The C.C. of Durham invite tenders for extensions to the Hartlepool Henry Smith School in accordance with plans prepared by Mr. James Garry, architect, West Hartlepool, at whose offices the plans and specification may be seen. Bills of quantities may be obtained from Mr. J. A. L. Robson, Secretary for Higher Education, Shire Hall, Durham.

SEPTEMBER 20.—**Cambridge.**—ADDITIONS TO PUMPING STATION.—Erection of additions to the Sewage Pumping Station, Riverside, Cambridge, according to plans, etc., prepared by the Borough Surveyor. A copy of the plans, etc., may be seen at the office of the Borough Surveyor, Guildhall.

* SEPTEMBER 22. — **Blackpool.** — LIBRARY, ETC.—The Blackpool B.C. invite tenders for new Central Library and new Art Gallery, Blackpool. See advertisement in this issue for further particulars.

NO DATE.—**Aberfan.**—COTTAGES.—Tenders wanted for two small cottages. Apply Mr. Collis, Belle Vue Cottage, Aberfan.

NO DATE.—**Chesterfield.**—BUILDINGS.—New buildings at Chesterfield for the Territorial Force Association. Name and address to Mr. W. H. Wagstaff, A.M.Inst.C.E., architect and surveyor, Chesterfield.

NO DATE.—**Ilkley.**—COTTAGE.—Erection and completion of cottage, King's-road, Ilkley. Quantities and all particulars may be obtained from the architects, Messrs. Garside & Pennington, Pontefract and Castleford.

NO DATE.—**Leeds.**—ASSEMBLY HALL, ETC.—Assembly hall and club premises in Cross Stamford-street, Leeds, for the Amalgamated Jewish Tailors' and Pressers' Trade Union. Names to Mr. Joseph J. Wood, A.R.I.B.A., 10, Park-row, Leeds.

NO DATE. — **Llwynypia.** — ALTERATIONS.—Alterations, etc., to general offices at Llwynypia, Glam., for Messrs. the Glamorgan Coal Company, Ltd. Plans may be seen, and bills of quantities obtained, at the offices of Mr. Edgar G. C. Down, A.R.I.B.A., architect and surveyor, 31, High-street, Cardiff, on deposit of 2*l.* 2s.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 7. — **Haine.** — DEEPENING WELL. — For deepening the well at the Isolation Hospital at Haine, near Ramsgate, the driving of additional adits, and the lowering of the pumping plant, for the Joint Hospital Board. Form of tender, etc., can be obtained at the office of Mr. H. Bertram Langham, Architect, Bank-chambers, High-street, Broadstairs.

SEPTEMBER 10.—**Felixstowe and Walton.**—ELECTRICITY METERS.—The U.D.C. of Felixstowe and Walton invite tenders for electricity meters. Specifications, etc., may be obtained at the offices of the Consulting Engineer, Mr. Reginald P. Wilson, 66, Victoria-street, Westminster, S.W., on payment of a sum of 1*l.* 1s.

Digitized by Google

ENGINEERING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 15.—**Newcastle-upon-Tyne.**—CLINKER GRINDING PLANT IN CONNEXION WITH WALKER REFUSE DESTRUCTOR.—Tenders are invited for the supply and erection of a small steel frame structure, together with plant. Copy of the general conditions, specification, etc., may be obtained, and the drawings inspected, at the City Engineer's office, Town Hall, Newcastle-upon-Tyne, on payment of the sum of 2*l.* 2s. to the City Treasurer, Town Hall, Newcastle-upon-Tyne. Prints of any of the three plans may be obtained on payment of 2s. 6d. each to the City Treasurer, which sum will not be returned.

SEPTEMBER 20.—**Lincoln Waterworks.**—BRIDGES.—The Lincoln Corporation invite tenders for the construction of a steel bridge, consisting of a river span of 262 ft. and five spans of 66 ft., with all necessary foundations and piers for supporting same, and a line of 21-in. welded steel pipes carried across bridge. Specification, etc., may be obtained at the office of the Engineer, Mr. Neil McK. Barron, Waterworks Engineer, Lincoln, upon production of a receipt from the City Accountant for 5*l.* 5s.

SEPTEMBER 20.—**Pontllanfraith.**—BRIDGE WORKS.—Monmouth Main Roads and Bridges Committee invite tenders for the pulling down of the existing bridge at Pontllanfraith and the erection of a steel structure. Plans, etc., may be seen at the office of Mr. William Tanner, F.S.I., County Surveyor, and a copy of the quantities obtained on payment of 1*l.* 1s.

SEPTEMBER 22.—**Leith Harbour and Docks.**—CONSTRUCTION OF GRAVING DOCK.—The Commissioners for the Harbour and Docks of Leith invite tenders for the construction of a graving dock and relative works at the north-west corner of the Imperial Dock, in conformity with drawings, etc., which may be seen at the office of the Engineer, Mr. Peter Whyte, M.Inst.C.E., Superintendent of the Harbour and Docks, Tower-place, Leith. Forms of tender, etc., may be obtained from the Engineer on payment of 3*l.* 3s.

MISCELLANEOUS.

AUGUST 31.—**Margate.**—TURF.—Tenders are invited for the supply and delivery of 8,000 sq. yds. of good turf for the park and greens in the Borough, and of an additional 2,000 yds. at the option of the Council. Samples of turf must be sent to the Head Gardener, Dane Park, Margate. Mr. Edward Brooke, Town Clerk, Town Clerk's Office, 13, Grosvenor-place, Margate.

AUGUST 31. — **Portsmouth.**—FURNITURE.—Tenders are invited for the supply of artices of furniture for the police offices in the Town Hall and the Fratton-road Police-station. Full particulars can be obtained at the Chief Constable's office at the Town Hall.

SEPTEMBER 3. — **Broadwoodwidger.** — STEAM ROLLING.—The R.D.C. of Broadwoodwidger, Devon, invite tenders for steam rolling the main and district roads. For further particulars apply to Mr. S. Werren, surveyor, Kennacott, Yeolmbridge, near Launceston.

SEPTEMBER 4. — **Gellygaer.** — STREET LANTERNS. — Gellygaer U.D.C. invite tenders for the supply of 150 or more street lanterns for their district. Particulars, etc., obtained upon application to the Council's Surveyor, Mr. Jas. P. Jones, F.I.S.E., Council Offices, Hengoed, *vid* Cardiff.

SEPTEMBER 7. — **Carnarvon.** — FIRE ESCAPES.—Tenders are invited for supplying alternative fire exits in connexion with certain wards at the Workhouse, in accordance with plans, etc., drawn out by Mr. Rowland Lloyd Jones, M.S.A., Carnarvon, copy of which may be had on application.

SEPTEMBER 9. — **Edinburgh.** — FIRE ESCAPE.—The Corporation of Edinburgh invite tenders for the supply of a horse-drawn gas-power extended turn table fire escape and water tower. Further particulars may be obtained from the Firemaster, Fire Brigade Headquarters, Edinburgh

SEPTEMBER 9. — **Salford.** — MOTOR FIRE ENGINES.—Tenders are invited for the supply of one or two petrol motor fire engines and hose tenders combined; and also tenders for the supply of a petrol motor ambulance van, complete. Full particulars may be obtained on application to the Chief Officer, Central Fire Station, The Crescent, Salford.

SEPTEMBER 13. — **Stansted.** — SCAVENGING.—The Stansted P.C. invite tenders for scavenging a portion of the Parish. For further particulars apply to Mr. E. T. Watts, Surveyor, Thorley, Bishop's Stortford.

SEPTEMBER 16.—**Newbury.**—FENCING.—Tenders are invited from local builders and ironmongers for the provision and fixing of about 700 yds. of fencing and entrance gates for the new cemetery. Specifications, etc., may be seen at office of Mr. S. J. L. Vincent, A.M.Inst.C.E., Borough Surveyor, Mansion House-street.

NO DATE.—**Newbury.**—GAS FITTINGS.—Tenders are invited from local gasfitters for keeping in order the gas fittings in Corn Exchange, Municipal Buildings, etc. Specifications may be seen at office of Mr. S. J. L. Vincent, A.M.Inst.C.E., Borough Surveyor, Mansion House-street.

PAINTING, etc.

AUGUST 30.—**Blackrock.**—PAINTING.—The U.D.C. of Blackrock invite tenders for the following work:—(1) Painting the railings in front of Town Hall, the windows and doors of Town Hall, Technical School, and Library; (2) painting inside woodwork of motor house; (3) painting No. 2 fire escape. Specifications can be seen at office of Mr. R. Finlay Heron, Town Clerk, Town Hall, Blackrock, Co. Dublin.

AUGUST 30.—**Weymouth, etc.**—CLEANING AND REPAINTING.—Great Western Railway Directors invite tenders for cleaning and repainting stations, etc., at the following places:—Contract No. 34, stations at Weymouth, Portland, and Easton; contract No. 35, stations at Bridport (West Bay), Grimstone, Dorchester, Broadway, Portesham, and Abbotsbury; contract No. 36, stations at Bampton, Bridgwater, Somerton, and Langport, East; contract No. 37, Locomotive Department buildings at Weymouth and Bridport; contract No. 38, Locomotive Department buildings at Bridgwater, Taunton, and Exeter. Specifications may be seen, and forms of tender, etc., obtained, at the office of the Engineer at Taunton between the hours of 10 a.m. and 4 p.m.

SEPTEMBER 1.—**Dartford.**—CLEANING AND PAINTING.—The Metropolitan Asylums Board invite tenders for cleaning and painting works and repairs at Gore Farm Convalescent Fever Hospital, near Dartford, Kent, in accordance with drawings, etc., prepared by Mr. W. T. Hatch, M.Inst.C.E., M.Inst.M.E., Engineer-in-Chief. The drawings, etc., may be inspected at the office of the Board, Embankment, E.C., and can then be obtained upon payment of a deposit of 1*l.*

SEPTEMBER 2.—**Dowlais and Blaina.**—DECORATING, ETC.—Decorating, etc., at the Wimborne Hotel, Dowlais, and the Queen's Hotel, Blaina. Particulars at the office of Mr. C. M. Davies, 112, High-street, Merthyr.

SEPTEMBER 7. — **Haine.** — PAINTING.—For painting the outside of the Isle of Thanet Isolation Hospital at Haine, near Ramsgate, for the Joint Hospital Board. Form of tender, etc., can be obtained at the office of the Board's Architect, Mr. H. Bertram Langham, Bank-chambers, High-street, Broadstairs.

SEPTEMBER 7. — **Lydiard Millicent.** — MORTUARY, ETC.—A mortuary, disinfecting chamber, and laundry at the Isolation Hospital, Stone-lane, Lydiard Millicent, for the Cricklade and Wootton Bassett R.D.C. Plans, etc., may be seen on application at the office of the architect, Mr. R. J. Beswick, 10, Victoria-road, Swindon.

✱ SEPTEMBER 9.—**Mile End, E.**—PAINTING, ETC.—The Guardians of the Mile End Old Town invite tenders for cleaning, painting, distempering, etc., the wards, corridors, kitchens, and offices of the Infirmary in Bancroft-road. See advertisement in this issue for further particuars.

SEPTEMBER 20. — **Halifax.**—PAINTING.—The Health Committee of the Halifax Corporation invite tenders for the outside painting of three houses, and the inside and outside painting of sheds, stables, and mortuary, situate at the Scavenging Depôt, Lister-lane and Hall-street. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 1*l.*

NO DATE. — **Shotton Colliery.** — PAINTING.—Tenders wanted for the repainting and decorating of Shotton Colliery Literary and Social Institute. Specification and particulars on application to Mr. Frederick Wilson, accountant, Shotton, Castle Eden.

ROADS, SANITARY, AND WATER WORKS.

AUGUST 28.—**Adel, Leeds.**—EXTENSION OF LAWNSWOOD CEMETERY.—Names to Mr. W. S. Braithwaite, architect and surveyor, 6, South-parade, Leeds.

AUGUST 30. — **Plymouth.** — MAKING-UP. — For making-up and completing streets and lanes. Plans, etc., may be seen at offices of Mr. James Paton, Borough Engineer, Municipal Offices, Plymouth.

AUGUST 30.—**Ponthir.**—ROAD WIDENING.—Widening, re-forming, and ballasting, etc., of Station-road, Ponthir, near Newport, for the Pontypool R.D.C. Plans, etc., can be seen at the office of the Engineer, Mr. D. J. Lougher, Bank-chambers, Pontypool.

AUGUST 30.—**Stone.**—SEWERS.—Stone R.D.C. invite tenders for about 1,000 yds. of sewers, 9 in. and 6 in. diameter, with lamp-eyes and manholes. Also for the construction of outfall works for same, at Stallington-lane, Blythe Bridge. Drawings, etc., can be seen on application to Mr. J. J. Chapman, Surveyor, Stone.

AUGUST 30. — **Wallsend.** — ASPHALTING. — The Wallsend Corporation invite tenders for asphalting the paths at the Richardson Dees Park, Wallsend. Particulars may be obtained on application to Mr. George Hollings, Borough Surveyor, Town Hall, Wallsend.

AUGUST 31. — **Abertridwr.** — STREET WORKS.—Caerphilly U.D.C. invite tenders for the paving, asphalt'ic tar paving, gravel footways, kerbing, channelling, sewering, etc., of the following private streets, viz.:—(1) Part Caerphilly-road and part High-street, Abertridwr; (2) Han-road, Abertridwr. Plans, etc., may be seen, and form of tender obtained, at the Council Offices, Caerphilly, upon depositing the sum of 1*l.* 1s.

AUGUST 31.—**North Ormesby.**—ROAD WORKS.—Ormesby U.D.C. invite tenders for the draining, levelling, paving, and making of back Beaumont-road and back Edward-street, North Ormesby. Plans, etc., can be seen on application to Mr. W. G. Harrison, Surveyor, at the Council Offices, High-street, North Ormesby.

AUGUST 31. — **Yardley.**—SEWERS.—Yardley R.D.C. Invite tenders for the provision and construction of certain surface-water sewers, together with the construction of manholes, etc. Plans, etc., may be seen on application to the Engineer and Surveyor, Mr. Arthur W. Smith, at the Council House, Sparkhill, near Birmingham. Specification, bill of quantities, etc., may be obtained on payment of 3*l.* 3s. to Mr. Francis Ladbury Thompson, Clerk of the Council, Council House, Sparkhill, near Birmingham.

SEPTEMBER 3. — **Llanarmon.** — CULVERT. — The Llansilin R.D.C. invite tenders for the construction of a brick arched culvert (115 ft. in length) over the stream running through the village of Llanarmon D.C. Plans, etc., may be seen, by appointment, at office of Mr. E. Vaughan-Edmunds, M.I.Mun.E., Surveyor, Llanrhaiadr.

SEPTEMBER 4. — **Gellygaer.** — CULVERTING, ETC. — Gellygaer U.D.C. invite tenders for (1) the construction of about 130 yds. of culverting at Cwmfelin, Bedlinog; (2) the erection of a retaining and fence wall for road-widening purposes at Oakland-street, Bedlinog. Plans, etc., can be seen, and bills of quantities obtained, upon application being made to the Council's Surveyor, Mr. Jas. J. Jones, Council Offices, Hengoed, *vid* Cardiff.

SEPTEMBER 4.—**Glasgow.**—PAVING.—The Corporation invite offers for the paving of Roslea-drive, from Meadowpark-street to Cumbernauld-road, with tar macadam. Specifications, etc., may be had on application at the Office of Public Works, City Chambers, 64, Cochrane-street.

SEPTEMBER 6. — **Cheadle.** — STREET WORKS.—The U.D.C. of Cheadle and Gatley invite tenders for the sewering, levelling, metalling, flagging, channelling, and making good Hill Top-avenue, Mellor-street, and Woodfield-road, Cheadle Hulme, in accordance with the plans, etc., to be obtained on application to Mr. E. Sykes, A.M.Inst.C.E., at the Council Offices, Cheadle, near Manchester, on the deposit of 1*l.* 1s.

SEPTEMBER 8. — **Belvedere.** — STREET WORKS. — The U.D.C. of Erith invite tenders for making-up Lessness Park-road, Belvedere. Plans may be seen, and specification, etc., obtained, at the Surveyor's office, Bexley-road, Erith, upon payment of 1*l.*

SEPTEMBER 8. — **Holmfirth.** — SEWERS.—Holmfirth U.D.C. invite tenders for the construction of sewers, with all the necessary manholes, etc. Plans, etc., may be seen at the Council's Offices, 49, Huddersfield-road, Holmfirth. Bills of quantities, etc., may be had on application to the engineers, Messrs. Joshua Barrowclough & Son, Holmfirth, on payment of 1*l.* 1s. for each of the two contracts.

✱ SEPTEMBER 8. — **London.** — URINALS. — The Commissioners of H.M. Works, etc., invite tenders for supply of urinals for a period of three years. See advertisement in this issue for further particulars.

SEPTEMBER 10.—**Chart Sutton.**—SANITARY WORK.—The Managers of Chart Sutton Schools invite tenders for sanitary work to be done. Plans, etc., can be seen by applying at the Vicarage.

SEPTEMBER 10. — **Gravesend.** — MAKING-UP, ETC.—Making-up, paving, and channelling Denton-street, situate partly within the Borough of Gravesend and partly within the Rural District of Strood. Plans, etc., can be seen, and forms of tender obtained, at the office of the Borough Surveyor, Mr. F. T. Grant, Town Hall, Gravesend, or at the office of the District Surveyor, Mr. L. Randerson, Blendon Villa, Meopham, from whom forms of tender may also be had.

SEPTEMBER 11. — **Lanark.** — WATER WORKS: LOCHLYOCK EXTENSION.—Contract No. 2:—Pipelaying.—The T.C. of Lanark invite tenders for cutting trenches for and laying and jointing about seven miles of 9-in. cast-iron pipes and other work connected therewith. Plans may be seen, and copies of the specification, etc., may be obtained, at the office of the Engineer, Mr. M. Ratcliffe Barnett, M.Inst.C.E., 124, St. Vincent-street, Glasgow, on payment of 1*l.* 1s.

✱ SEPTEMBER 13. — **Ayr.**—DRAINAGE.—The Secretary of State for War invites tenders for the reconstruction of drainage at Ayr Barracks, in the Scottish Command. See advertisement in this issue for further particulars.

✱ SEPTEMBER 14.—**Bromley.**—STREET IMPROVEMENT.—The Bromley B.C. invite tenders for sewering, levelling, paving, metalling, channelling, and making good Prospect-place. See advertisement in this issue for further particulars.

SEPTEMBER 15. — **Newsham and Blyth.** — ROAD AND FOOTPATHS.—North-Eastern Railway Directors invite tenders for the construction of a road and footpaths between Newsham and Blyth, together with a subway and a footbridge. Plans, etc., can be seen at the office of the company's Engineer, Mr. Charles A. Harrison, Forth Banks, Newcastle-on-Tyne, where schedules of quantities may be obtained on personal application.

SEPTEMBER 20.—**Bermondsey.**—REPAVING.—The B.C. invite tenders for the repaving of Parish-street and portions of Great Maze Pond with creosoted wood blocks. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. R. J. Angel, M.Inst.C.E., Borough Surveyor.

SEPTEMBER 29.—**Wood Green.**—WORKS OF PRIVATE STREET IMPROVEMENT.—The U.D.C. invite tenders for works of private street improvement in Brabant-road, Ellenborough-road (Sec. II.), Windermere-road (Sec. II.), and Sandford-avenue. The plans, etc., may be seen, and bills of quantities obtained, on application to the Surveyor at the Town Hall, Wood Green, upon payment to Mr. Wm. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1*l.* 1s.

STONES, MATERIAL, AND STORES.

AUGUST 31-SEPTEMBER 6. — **Royton.** — STONE. — The U.D.C. of Royton invite tenders for the supply of solid rock or grit setts, kerbs, flags, and rubble stone. Specification, etc., may be obtained from Mr. Thos. Bleasdale, Clerk to the Council, Town Hall, Royton, near Oldham.

SEPTEMBER 1.—**Dublin.**—MATERIAL.—Great Southern and Western Railway Company (Ireland) Directors invite tenders for the supply of material. The specifications for the rails, fishplates, and chairs are upon separate forms, and a charge of 5s., which is not returnable, will be made for each specification. Mr. Robert Crawford, Secretary, Kingsbridge Terminus, Dublin.

SEPTEMBER 1. — **London.** — STORES.—The Metropolitan Asylums Board invite tenders for the supply of builders', engineers', smiths', plumbers', and gasfitters' ironmongery and miscellaneous stores and electrical accessories. Forms of tender can be obtained at the office of the Board, Embankment, London, E.C.

SEPTEMBER 2. — **East Barnet.** — GRANITE AND GRAVEL.—East Barnet Valley U.D.C. invite tenders for supply of broken granite, gravel, hoggin, stoneware pipes, etc. Further particulars, etc., can be obtained on application to Mr. Henry York, C.E., Surveyor to the Council.

SEPTEMBER 3. — **Houghton-le-Spring.** — ROAD MATERIALS.—The U.D.C. of Houghton-le-Spring invite tenders for the supply of road materials. Further particulars, with form of tender, may be obtained from the Surveyor, Mr. John W. Holbrook.

SEPTEMBER 6.—**Bromley.**—MATERIALS FOR ROADS.—The Bromley R.D.C. invite tenders for the supply of road materials. Forms of tender may be obtained at the offices of the Council, Park House, Bromley, Kent.

SEPTEMBER 6. — **Faversham.** — GRANITE, ETC.—The Corporation of Faversham invite tenders for the supply of 300 tons (more or less) of granite or basalt, and of 45 tons (more or less) of granite or basalt chippings. No special form of tender will be provided. Mr. Allan Tassell, Town Clerk, Faversham.

Digitized by Google

STONES, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 7.—**Bedford.**—BROKEN GRANITE, ETC.—The Corporation invite tenders for the supply of about 2,500 tons of broken granite, 620 tons of ironstone slag, and 500 tons of ironstone slag tar macadam for road-making. Forms of tender, etc., can be obtained on application. Mr. Hedley Baxter, Town Clerk, Town Hall, Bedford.

SEPTEMBER 7.—**Glamorgan.**—SUPPLIES.—The Committee of Visitors of the Glamorgan County Asylum invite tenders for the supply and delivery of builders' materials. Forms of tender, etc., may be obtained on application to the Clerk and Steward.

SEPTEMBER 7. — **Leatherhead.** — MATERIALS.—The U.D.C. of Leatherhead invite tenders for the supply of material and labour. Specification, etc., can be obtained at the office of Mr. J. E. Smales, Surveyor, Council Offices, Leatherhead.

SEPTEMBER 8.—**Bollington.**—GRANITE.—Bollington U.D.C. invite tenders for the supply of about 300 tons of Welsh granite macadam. Particulars may be obtained from Mr. Samuel Knight, Clerk, Council Offices, Bollington, near Macclesfield.

SEPTEMBER 10.—**Wakefield.**—MATERIALS.—Surveyor's materials for West Riding Lunatic Asylums at Menston, near Leeds; Storthes Hall, Kirkburton, near Huddersfield; Wadsley Bridge, near Sheffield; and Wakefield. Forms of tender and other particulars may be obtained on application to the Clerk to Asylums Committee, Room No. 30, County Hall, Wakefield.

SEPTEMBER 16.—**Bradford.**—STORES.—The Gas Committee of the Bradford Corporation invite tenders for the supply of stores. Form of tender may be had on application to Mr. Chas. Wood, Gas Engineer, Town Hall, and samples may be seen at Mill-street Gasworks.

SEPTEMBER 16.—**Haverfordwest.**—FIRE BRIGADE MATERIALS.—The Fire Brigade Committee invite tenders for 120 ft. of leather hose, 475 ft. of canvas hose, and one gun-metal breeching. Also six hooks and leather slings for hose carriers and two gun-metal adaptors. Further particulars may be obtained from Mr. W. Bevan, Borough Surveyor Council Chambers, Haverfordwest.

SEPTEMBER 20.—**Dorchester.**—ROAD MATERIAL.—Tenders are invited for supply and delivery of road material. Forms of tender, etc., may be obtained from Mr. Percival T. Harrison, A.M.Inst.C.E., Borough Engineer, Guildhall Chambers, Dorchester.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*OVERSEER (PUBLIC WORKS DEPARTMENT)	Hong Kong P.W. Depart.	240*l.*, etc., per annum	Aug. 31
*ASSISTANT OVERSEERS (PUBLIC WKS. DEPARTMENT)	Hong Kong P.W. Depart.	165*l.*, etc., per annum	do.
*FOREMEN OF WORKS	Uganda Protectorate	200*l.* per annum, etc.	Sept. 6
*SANITARY INSPECTORS (TWO)	Bermondsey Borough Council	130*l.* per annum	Sept. 14

Auction Sale.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BLDRS' AND CONTRACTORS' PLANT AND MACHINERY—At Central Wks., Belvedere-rd.	Fuller, Horsey, Sons & Cassell	Sept. 14

PRICES CURRENT OF MATERIALS.

**** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	,, delivered
Flettons	1 4 6	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing..	5 0 0	" " "
Best Blue Pressed Staffordshire ...	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depot	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Paseled, delivered on road waggons, Paddington Depôt, Nine Elms Depot, or Pimlico Wharf	2 2½	" "

STONE (*continued*).

	s. d.	
Ancaster in blocks	1 10	per ft. cube deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000, at rly. depôt.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "

TILES (*continued*).

	s. d.	
Best "Rosemary" brand plain tiles	48 0	per 1000 at rly. dep.
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard.					
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	£	s.	d.	£	s.	d.
	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—						
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft.					
	4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	At per standard.					
White Sea: first yellow deals, 3 in. by 11 in.	£	s.	d.	£	s.	d.
	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
" " 3 in. by 9 in.	13	10	0	14	0	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
" " 3 in. by 9 in.	12	10	0	13	10	0
Battens	10	0	0	11	0	0

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3474. SEPTEMBER 4, 1909.

Contents.

	PAGE
Toledo	255
A Plea for the Further Suppression of Smoke	258
Notes	259
The Influence on Architecture of Modern Methods of Construction	261
Timber Bridge over the Wey, Guildford	265
Notes from Paris	265
Correspondence:—	
The Effect of Painting Hot-Water Radiators	265
Meetings	266
Ordnance Survey	266
Fifty Years Ago	266
Illustrations:—	
Additions to Town Hall, Stoke-upon-Trent	266
The Conductivity, Porosity, and Permeability of Refractory and Building Bricks, etc.	267
The Latest Issue of "Archæologia"	268
Crypt, Chillon Castle	269
Concrete: Its Aggregates and Mixing	269
Legal Column	271
London and District Borough Councils	272
Projected New Buildings in the Provinces	272
Competition News	272
General Building News	272
Miscellaneous	273
Patents	273
Some Recent Sales	273
List of Competitions, Contracts, etc., Open	274
Prices Current	276
Tenders	277

Illustrations.

Competition Designs for Additions to the Town Hall, Stoke-upon-Trent:—

Design placed First. By Messrs. Garratt & Simister.

1. Perspective View.
2. Plans.

Design placed Third. By Mr. William Haywood.

1. Perspective View.
2. Plans.

Illustrations in Text.

Toledo:—	PAGE
The Cathedral	256
The Puerta del Sol	257
Foot-bridge over the Wey, Guildford. Messrs. Clemence & Moon, Architects	265
Design for Additions to Town Hall, Stoke-upon-Trent. By Messrs. Garratt & Simister. Detail Elevation	267
Crypt, Chillon Castle. From a photograph by Mr. H. Stuart Thompson	269

Toledo.

PUBLIC interest in the fate of Toledo Cathedral has been aroused of late by reports in the daily papers that the vaulting of the central portion threatened collapse, and by the photographs published in a recent number of the *Graphic*. These rumours are fortunately, however, somewhat exaggerated and unfounded.

The original construction of this immense five-aisled church was evidently as defective as was often the case with XIIIth-century buildings elsewhere. The original design of the vaulting of both nave and transepts follows a very depressed pointed curvature, little more, in fact, than a semicircle; and as a consequence of the spreading of the main supports owing to defective foundations or site, a serious deformation of the arch-ribs and of the vaulting generally has been produced. These deformations, which are specially noticeable in the nave and in the south transept, give an unfortunate look of insecurity to the interior. In places attempts have been made to strengthen the vaulting-ribs by tying them into their places with numerous iron straps on their undersides, and with bolts passing through the masonry of the vault. In some cases the vaulting-ribs must have been originally built detached from the vaulting in the earlier style of such construction, and this has allowed of their shifting in a dangerous manner. For the present the iron straps and bolts which have been from time to time applied are apparently considered sufficient, but any further movement in the structure will certainly involve a more radical "restoration" of the whole vaulting over the central aisles of the church.

One portion of the cathedral seems to be considered in a somewhat dangerous condition—this is the "puerta de los leones," or south transept front. The "puerta de los leones" is a singularly designed feature of the church, and it has evidently been reconstructed at different periods, possibly on account of defective foundations. As originally built in the XVth century, it consisted of a great archway of deeply-recessed mouldings covered with early flamboyant carving, the great lintel being supported in the middle with the usual "trumeau." Towards the interior the doorway is flanked on either side by a niche containing a sarcophagus, that on the north having been reconstructed in the "plateresque" style, in combination with an elaborately decorated gallery containing an organ which fills up the inner space of the south transept front. The exterior façade is of the XVth century up to the top of the main arch, but above that level an XVIIIth-century imitation of Gothic detail covers the wall. The original design of this entrance is usually attributed to a German, known as Juan Allemann.

The "puerta de los leones" is now boarded up for fear of falling masonry, although the appearances outside are not very alarming. Within the church at this point a serious crack extending from side to side of the central vaulting seems the most suggestive evidence of impending ruin. It is to be hoped that this settlement, which must have been in progress for ages, has at last reached its limit, or little can be done without more or less rebuilding this portion of the church at some future date. The site on which the cathedral is built is highly unsatisfactory as a foundation; the city crowns a rocky hill of which the strata have evidently a tendency to slip.

Some recent Press notices have gone so far as to state that the superb stall work of the "Coro" and other portions of furniture beneath the central crossing of the cathedral have already been removed, anticipating an accident in event of an earthquake. This is, however, quite incorrect; no immediate cause for alarm seems to be felt by the clergy, who continue to conduct their services as in times past, and all cause for apprehension of immediate danger seems to have been removed by timely measures and repairs to this central portion.

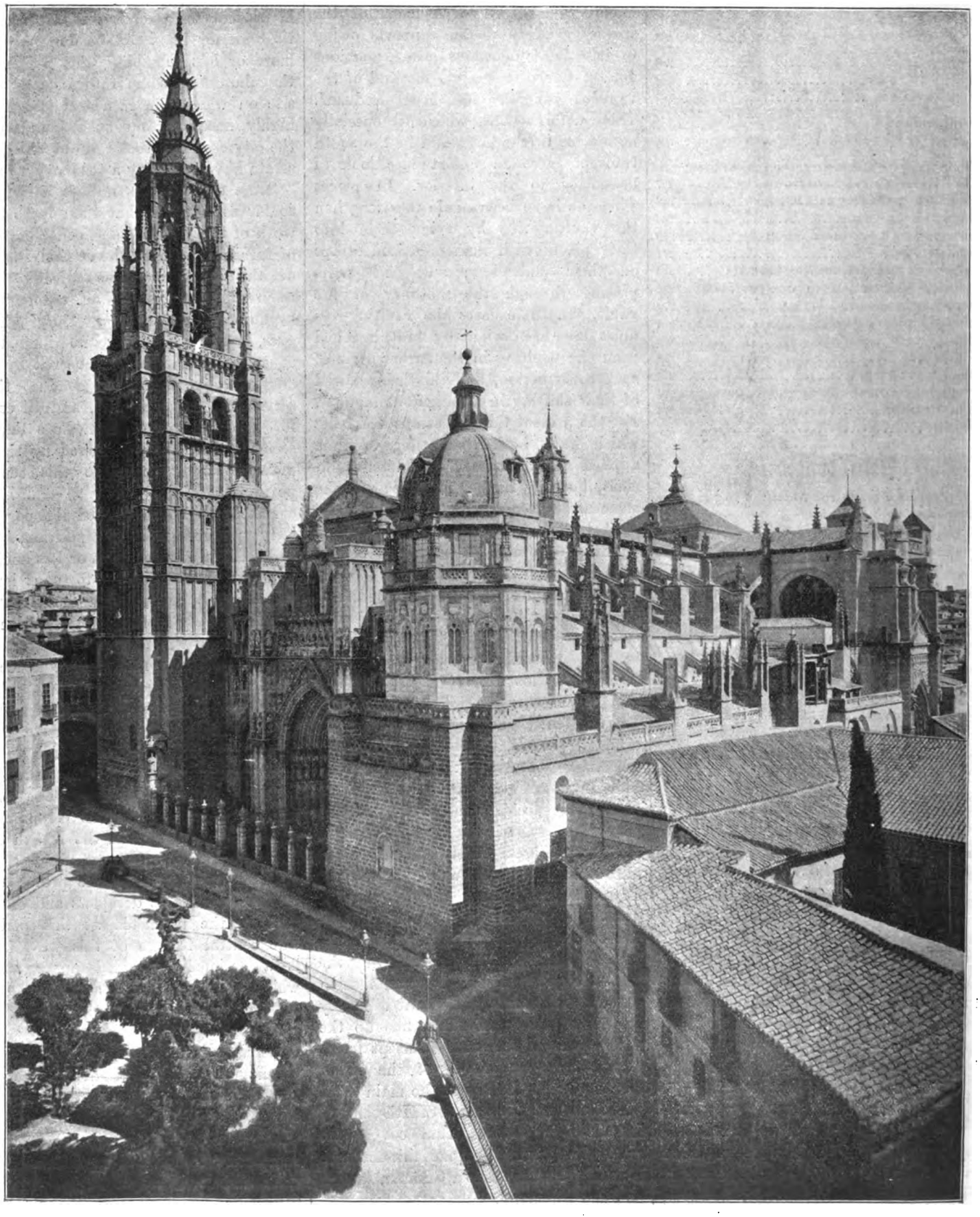
Externally Toledo Cathedral is particularly picturesque. Its position, embedded in a mass of more or less ancient buildings intersected by tortuous lanes, prevents any general view of its mass—which is very considerable—but, notwithstanding this, a great impression of its size is obtained in consequence of the innumerable side views and "bits," which are always presenting themselves to the visitor. The west end stands in a small, irregular "plaza," which affords a charming setting for the unfinished outlines of the building. The west front displays the curious Germanisms of the Spanish style of the XIVth and XVth centuries, features due, as is generally supposed, to the presence of actual Germans as designers and craftsmen in the peninsula at this period. The central feature of this west front is a curiously designed upper story, which seems to be a sort of *replica* of the famous triangular porch at Ratisbon.

Berruguete, Herrera, Churriguera are the names of the principal architects of the classical Renaissance in Spain. "I cannot indeed forgive these men by whom the exterior of this church was completely modernised or concealed by their additions," says George Edmund Street in his book on the "Gothic Architecture in Spain." We of a later age may perhaps afford to be a little

Digitized by Google

more indulgent to the authors of a style so repugnant to the sensitiveness of an enthusiast of the "Gothic Revival." Street, in his sweeping condemnation of anything connected with the "classic" styles, seems to have forgotten that much of the work so offensive to him is merely the completion of what had been left unfinished at some earlier period. The large south-western tower of the cathedral was, for instance, unfinished till the XVIIth century, when the elegant octagonal dome was designed as its termination by an architect, apparently of Greek origin, named George Theotocopoulo. The additions or works of completion so much deplored by Street are certainly sufficiently out of harmony with the genuine Gothic work, but they have some degree of interest when compared with our own "Gothic" buildings designed by Wren or Horace Walpole. The Spanish work is indeed somewhat more true to the ancient principles of construction than "Tom Tower," Oxford, or the west front of Westminster Abbey. This survival of a more genuine feeling for mediæval types of design and workmanship may be noticed in many of the great Spanish buildings of the XVIth-XVIIIth centuries; in England it may be paralleled with the lingering of mediæval details in farm buildings in out-of-the-way districts.

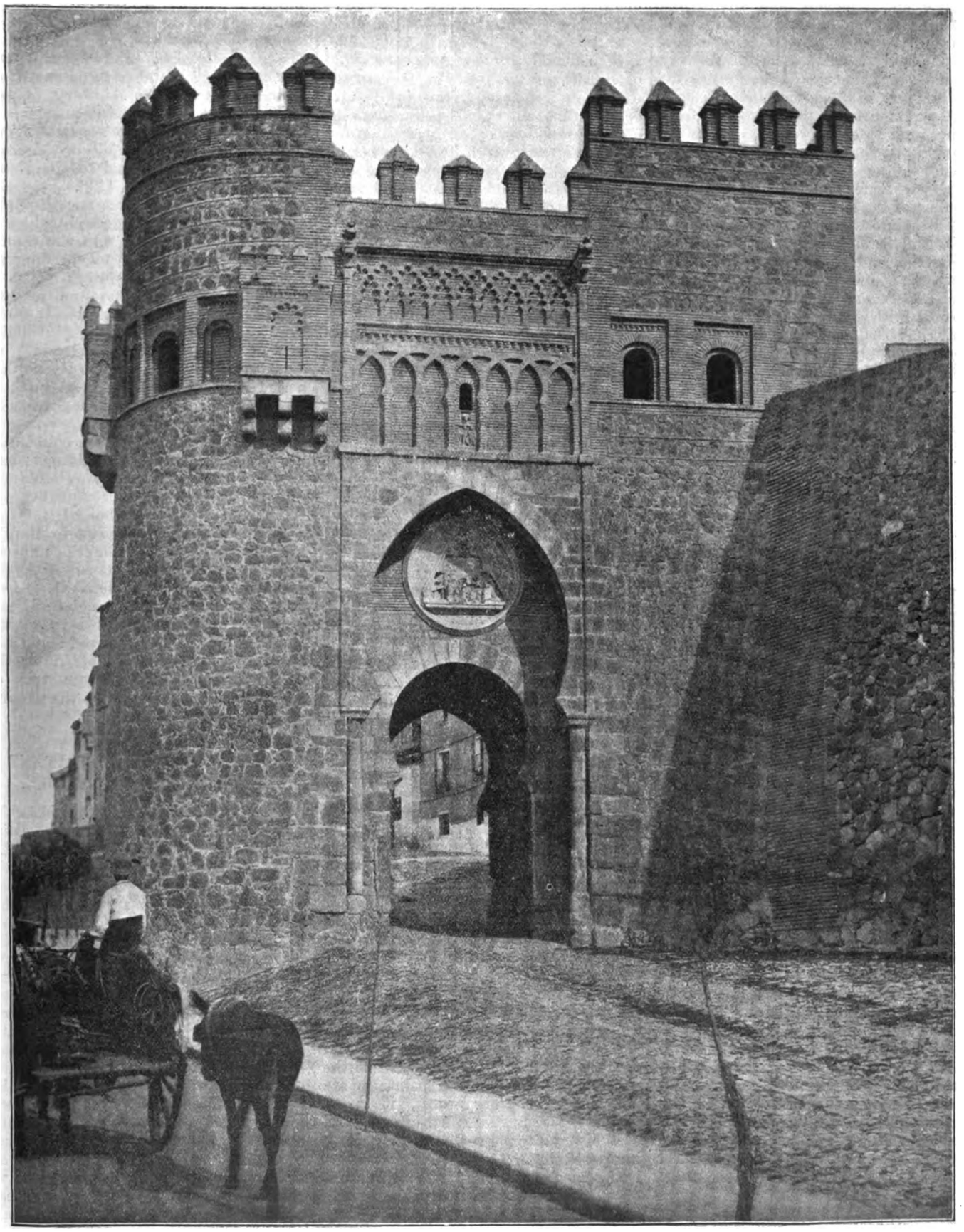
One of the most interesting references to Toledo Cathedral in Street's book is his description and diagrams of the design and construction of the vaulting



The Cathedral, Toledo.

Digitized by Google

over the ambulatory which encircles the east end of the choir. As originally planned, the choir was intended to be encircled by nine large chapels and eight smaller chapels or recesses filled by doorways in some cases. This arrangement, which seems to have become a favourite one with Spanish architects, appears to have originated in such imitations of early French buildings as the Cathedral of Santiago, with its five large chapels and intermediate doorways around the chevet. This plan was adopted in order to avoid the difficulty in carrying the ordinary square vaulting of an aisle round a semicircular or polygonal apse, due to the difference in the curvature of the ribs, etc. By treating each large chapel as equal in width to the corresponding arch of the choir arcade the intervening space of the ambulatory was easily covered with a square vault. The intermediate triangular space between each small chapel and the pier of the choir arcade resulting from this disposition is not difficult to provide with a vault of three ribs, one starting from the pier of the choir, and the other two carried up from the wall shafts at the angles of the large chapels. In this way the distorted effect sometimes noticeable in vaulting constructed round a chevet



The Puerta del Sol, Toledo.

Digitized by Google

is avoided, and the construction is both sounder and more pleasing to the eye.

The ingenious planning of the lead work and guttering in the external covering to the immense area covered by Toledo Cathedral affords a special theme for architectural study. Most of the Spanish cathedrals are remarkable for their immense width. Toledo is close upon 200 ft. in width and nearly 350 ft. long, and the rainfall on this area of 70,000 ft. has to be provided for in the mediæval manner with lead gutters and gurgoyles, and any defect in the system would mean rapid destruction of the shell of masonry beneath which has to be protected. A very common arrangement of the gutters for the purpose of giving more rapid course to the rain-water is to carry them from upper roofs through or on the top of the flying buttresses to a convenient gurgoyle spouting into some neighbouring street or lane, and thus prevent the flooding of the lower roofs. Snow enters but little into the calculations of builders in Central Spain, although in the northern mountains and Galicia the winters are much the same as in the rest of Europe. Such enormous square areas as are covered with roofing in the cathedrals and converted mosques of the South would certainly have never come into existence but for this freedom from water in its more penetrating form.

Toledo Cathedral more than most other buildings of its type impresses the visitor with the fact that it was built primarily for internal use and display. The mediæval city crowded within its natural defences of precipitous cliffs, around which the River Tagus has cut in the course of ages a mighty fosse, afforded no area on which to display the usual external proportions of a Gothic cathedral. The irregular nature of the rocky hill on which the city is built also prevents the building from being distinguishable at a distance amongst the masses of crowded dwellings and lesser monuments which rise in picturesque confusion around and above it. The cathedral has consequently grown into existence as a vast interior, out of which lead many smaller—but only comparatively smaller — churches. These smaller churches, sacristies, etc., are almost completely without architectural exteriors, and, as already remarked, very little of the cathedral seems to have been completed externally till the days of the classic revival so much reviled by Street.

The general design of the interior—attributed to a certain Pedro Pérez, who seems to have superintended the work during the fifty years, 1225-1275—is of a mediocre, uninteresting character, allowing of but little criticism. Founded upon French models of the period, it does not display any particular originality. The nave, choir, and transepts, with their double aisles, seem all to have been completed from one design, and the original construction has been preserved intact in spite of the extensive alterations to the exterior of the cathedral occasioned by the addition of immense chapels on different sides. The general effect of the interior is somewhat heavy and low in proportion as compared with the soaring character of contemporary French work; the piers of the nave arcade, with their attached vaulting shafts, are needlessly massive, and the small importance of the triforium and clearstory adds to these defects. The window tracery is of the usual beautiful geometrical style which the Spaniards seem to have appreciated almost till the last days of the *moyen age*—a style which lends itself to the splendours of Flemish glass with which almost all the windows of the cathedral are glazed—but the mason-craft is of a very ordinary description.

The centre of attraction in a great Spanish church is always the high altar with its invariably gorgeous "retablo" or reredos in the "Capilla Mayor," or choir. In Toledo the crowning feature of the interior is certainly the magnificent and enormous mass of sculpture and tabernacle work which towers up behind the high altar to almost the full height of the church, and closes in the three eastern bays of the choir apse. This prodigious piece of wood-carving is attributed to the combined efforts of half a dozen artists, several of whom are said to have been Germans or Dutchmen. Its five stories of compartments are filled with figure sculpture of a type somewhat later than the Gothic tabernacle work enshrining it, but the single figures of saints half life-size at the sides are of the finest mediæval character. The whole retablo is gilded and, as Street says, "of extreme richness and perfect quietness combined, the usual result of the ample use of gold." Street does not, however, lay stress upon a very curious use of gilding in this connexion. Spanish church interiors are singularly devoid of mural paintings, although the architectural features of capitals, cornices, bosses, etc., are frequently treated in polychrome decoration. In the case of the "Capilla Mayor" at Toledo the tiers of magnificent tombs, which rise one above another on either side of the retablo, are decorated in all the splendour of coloured heraldry, and in addition the jointing of the stonework throughout the choir is also gilded. In other words, the masonry appears as if set with a broad mortar joint of gold! Such a treatment is perhaps almost unique, and certainly belongs to the period of the retablo, 1498-1504. Was the designer of such a decoration aware of the gilded streak in the lead jointing of certain Greek temples, or was the gold-leaf used thus lavishly at Toledo the first fruits of plunder offered by the Spanish conquerors of America, who are sometimes said to have soothed their consciences by gilding these immense "retablos" in other Spanish churches? Whatever may have originated this singular mode of decoration, it is certainly highly decorative, and on the whole satisfactory in a case like the present, where no mural paintings are attempted—in other words, it is an excellent setting for mediæval sculpture.

Every visitor to Spain is greatly impressed by the magnificent wrought-iron screens which still remain in front of the altars of the "Capilla Mayor," as well as of the side chapels in every cathedral. At Toledo the screens of the "coro" and of the "Capilla Mayor" are stupendous examples of the class, over 30 ft. in height; that in front of the high altar forming also a rood-screen with a colossal crucifix above it. The effect of the richly-decorated sanctuary seen through this screen, with the remarkable treatment of gilded masonry above described, is perhaps unique in Christendom—it seems the *nec plus ultra* of sumptuous ecclesiastical art. The extreme minuteness of detail, the wealth of imagination displayed in endless combination of mouldings and variety of sculptured forms in leafage, with the addition of whole armies of saintly and angelic figures which meet the eye at every turn, form a *tout ensemble* which has never been surpassed probably in the whole history of art. This remarkable sanctuary stands in a condition of singular preservation; we seem to see it almost untouched since the days when Cardinal Ximenes set about its completion in 1498.

It is of interest to remark that this same Cardinal Ximenes, Archbishop of Toledo, who is credited with the magnificence of his cathedral choir in the pure style of XVth-century Gothic, seems to have built about the same time the very beautiful foundling hospital of Santa Cruz, also in Toledo, a delightful building in the early "plateresque" or "goldsmith's style." Evidently at that period it was considered appropriate to continue the pointed style for religious monuments, whilst the new-fangled paganism of the Renaissance could only be permitted in secular buildings; and this, it must remembered, was often the full development of the classic taste in Italy in both classes of buildings.

Few mediæval monuments in Europe can compare, or can have compared even in their palmy days, with the splendid interior of Toledo Cathedral. Long may it remain a precious souvenir of the absolutely extinct arts of the Middle Ages, and be preserved in its still comparatively unrestored state for the admiration of future ages, in spite of rumoured collapse and threatening earthquakes.

A PLEA FOR THE FURTHER SUPPRESSION OF SMOKE.

THE time has surely arrived for the inhabitants of large residential towns to call upon the legislature for better protection of the atmosphere from pollution with coal smoke. Cheap electricity, cheap gas, and solid smokeless fuel in various forms are now available for domestic heating and for factory purposes, and neither crass selfishness on the part of manufacturers nor foolish apathy on the part of many householders should prevent the more intelligent portion of the community from insisting upon more drastic action being taken to suppress the smoke nuisance. For a little while longer the discharge of smoke into the atmosphere must, perhaps, be permitted in certain cases, but if the importation of smoke-producing coal into London were at once prohibited no industry would be ruined, save that of the chimney sweep, and no householder need suffer from lack of heat more than in the past. The coal-merchant would have to become a

Digitized by Google

purveyor of smokeless fuel. Already the poorest classes are extensively using gas and broken coke in place of coal; already the wealthier classes are extensively using electric radiators and gas-fires in offices and bedrooms; already the three metropolitan gas companies have 700,000 gas-cookers being used by their customers; already electric motors and gas-engines are being extensively and profitably used for power purposes; and we know no reason why the unprogressive should be allowed to continue to poison the atmosphere and befoul the property of the general community. If any man wishes to generate coal smoke for his individual gain or pleasure let him be compelled to confine the smoke to his own premises and not be permitted to discharge it into the public air store.

Pollution of the waters of the Thames with soot or tarry compounds is forbidden; pollution of the atmosphere with these same matters is permitted. Why? Pollution of the atmosphere is more prejudicial to the health of the community than pollution of the river. In neither case can pollution be entirely stopped, but in both cases heavy penalties can be inflicted for unnecessary pollution. Yet from houses innumerable unnecessary pollution of the air is carried on with impunity.

It has been said that it is impracticable to forbid householders to use smoke-producing coal, for it is the cheapest fuel and makes the most cheerful fire, and all attempts which have been made to prevent its use have failed. These facts may have been sufficient excuse for the universal use of bituminous coal during the Victorian era, but the introduction of such smokeless fuels as "coalite," "carbo," and other forms of inflammable coke, and the adaptation of electricity and gas to all the purposes for which bituminous coal was formerly used, make it desirable that we should now reconsider the position. The new solid smokeless fuels burn in an open grate freely and with a certain amount of flame, but in the opinion of some people a fire fed with bituminous coal remains the most satisfactory. The question which the community has to decide is whether those who wish to pollute the atmosphere with coal smoke, for the sake of a little increased personal satisfaction or a slight monetary economy, shall be permitted to do so at the expense of those who are willing to make some small sacrifice for the commonweal, or who do not agree that a smoking fire is the only satisfactory agent for heating a room.

We are well aware that ever since bituminous coal became a popular fuel there have been individuals who have recognised the barbarity of fouling the atmosphere with smoke, and who have endeavoured to bring about an abatement of the nuisance, and that in recent years some have set a good example by abandoning the use of smoke-producing fuel in their own residences; but we do not know whether the smoke-reformers yet have the goodwill of the majority. It is merely a matter of education. Future generations will look back with amazement to the time when men lived in an atmosphere rendered murky and sulphurous by their own handiwork.

The strenuous work of the Coal Smoke Abatement Society and of kindred associations has resulted in a great diminution in the quantity of soot emitted from factory chimneys, for these societies have repeatedly induced a lethargic Local Authority to take action against an offender and secure an abatement of a smoke nuisance. Further progress has been effected by encouraging the use of grates designed to burn coal without producing so much smoke as would be formed by burning the coal in a grate of common construction, but the smoke emitted even from houses fitted with the best of modern open grates is still very objectionable when ordinary house coal is burned.

The Smoke Abatement associations have also done good work in continually clamouring for reform and never allowing the evil wrought by coal smoke to be forgotten. The London County Council has also assisted in effecting an abatement of the nuisance, and we observe with satisfaction that the Council appears disposed to take more vigorous action in the immediate future. But the circle of smoking fires already extends beyond the confines of the county of London and seems destined to widen until it touches the sea. London has already lost its right of way to the fresh air, and is being choked by an ever widening belt of smoke.

Houses, factories, and steamboats are not the only offenders. Black smoke continues to be poured forth from many railway locomotives, and if there is no prospect of electricity being used on these in place of steam it will be necessary to consider whether it is not practicable to insist upon the use of some form of smokeless fuel under locomotive boilers.

The time is ripe for a great popular movement in favour of the suppression of smoke. As an initial step a Committee composed of representatives of all the learned and technical societies, and all the medical and sanitary societies, might be formed to consider the matter and to approach Parliament when the Committee had agreed upon the clauses to be inserted in a new Smoke Suppression Bill. But the work must not be left to a select few. Public support is necessary.

Every householder can personally further the good cause during the approaching winter by using smokeless fuel as a substitute for smoke-producing fuel where and when possible. If a considerable section of the community will voluntarily abstain from producing smoke it will become evident that it is not impracticable to enforce abstention on the part of others, and it will be more easy to induce the legislature to take action to bring about the desired reform.

RECONSTRUCTION OF GLASGOW ROYAL INFIRMARY.—The plans in connexion with the Royal Infirmary, which were recently passed at Glasgow Dean of Guild Court, are for the second instalment of the main building, now in course of erection. The portion already erected comprises about two-thirds of the surgical block, the remaining third being embraced in the portion now about to be proceeded with. In addition to this it comprises the central block, which contains the administrative department and department for special diseases. Mr. James Miller, A.R.S.A., Glasgow, is the architect for the building.

NOTES.

Housing and Town Planning Bill.

IN opposing the now rejected clause providing for a quinquennial register of somewhat formidable and distinctly inquisitorial character, Mr. Burns paid a just tribute on Monday last to the valuable work done by medical officers of health and sanitary inspectors in this country. Notwithstanding the strict official discipline prevailing in Continental cities, the fact is that places like Paris and Berlin, for example, are not by any means good models for imitation in respect of sanitation. People who pay flying visits to the Continent are naturally impressed by things seen in the main thoroughfares and open spaces through which they are personally conducted by various tourist agencies. But the same people learn practically nothing of the evil-smelling back streets and the still more odorous tenements occupied by the lower classes. Mr. Burns, who has evidently spent some time in exploring the slums of Paris and Berlin, was quite right in advising the House not to take the procedure of those cities as examples worthy of following in sanitary work. So far as externals are concerned, however, we have still a good deal to learn from Continental nations, or, if not ignorant in this respect, we have at any rate ample scope for the practical application of our knowledge.

The Budget and Building.

AN architect sends us the elevation and plans of a large and important country house of considerable originality of design, and writes:—"The drawings were finally approved by my client and I hoped they would have materialised some time since, but the appearance of the Government Socialistic Budget has finally decided my client to abandon the work. Thus several thousands of pounds are withheld from the building industry." This may serve as one reply to the letter of our correspondent "Alpha" some weeks ago.

Loads upon Rocks and Soils.

IN the *Journal* of the Royal Institute of British Architects a letter from the Honorary Secretaries to the Science Committee invites members to send notes furnished by actual experience as to the safe loads that can be imposed on different kinds of rock and earth. We have no doubt that most architects could furnish particulars of the kind, but whether the data so rendered available would do much to advance scientific knowledge is a matter very much open to question. Members of the profession rarely find it necessary to make trial borings of elaborate character, or to enter upon close calculations of the bearing power of the strata upon which buildings are erected. Of course we fully admit that they always take care to obtain sufficient information to obviate the risk of inconvenient or disastrous settlement, but we consider the actual factors of safety generally prevailing are so ample as to make notes of the precise kind desired by the Science Committee somewhat rare. In important engineering structures, such, for instance, as bridges where enormous

Digitized by Google

loads have to be carried on piers of relatively small dimensions, exact data are always necessary. Consequently an appeal to members of the Institution of Civil Engineers would doubtless be productive of results such as those now desired. We hope, however, that the present invitation will meet with a general response, and particularly that those architects who are also civil engineers or whose practice is akin to engineering will place at the disposal of the Institute all the available data in their possession.

The Daylight Saving Bill.

THE Select Committee appointed to report on the Daylight Saving Bill have reported adversely to the Bill. In other times legislation such as that proposed by this Bill would have been treated as a joke, and have merely furnished material for the comic papers, but nowadays it is never safe to predict what measure is too fantastic to find a place on the Statute Book. When the Select Committee of 1908, which favoured the Bill, reported against the adoption of central-European time, the question was rendered wholly impracticable with no possible attendant advantages. The establishment of a universal time on the Continent and here would have had something to recommend it, but the suggestion of two different times in the year was a practical impossibility. If people desire to get up a little earlier in the summer months they can well do so without requiring legislation to assist them, and (which is equally important) without the risk of their being called upon to work longer hours in consequence.

Motor Traffic and Public Health.

THE annual Report of Dr. Fremantle, the Medical Officer of Health for Hertfordshire, deals at some length with the physiological aspects of modern highway traffic. The "nerve tension" induced by swiftly moving vehicles is more or less harmful, its intensity varying with the temperament of the subject. It is said to be far higher in women than in men, and in persons of moderate intelligence than in those of much or very little. Still more evident than mental influences are the material factors of noise, smell, and dust. The first two annoyances are being reduced year by year, and will probably reach an almost irreducible minimum before long. Dust is a product of unsuitable roads, and its prevention is clearly a task for highway authorities. Cohesive road-binding material has been largely used with excellent results in recent years, and in course of time will be almost universal on main thoroughfares. Even then there must always be a fair proportion of dust on the surface, and the builders and drivers of motor vehicles should be required to avoid unnecessary disturbance of the layer, the former by modifying the form of car bodies and increasing their clearance above the road, and the latter by considerate driving. The element of danger to children using the road as a playground and to flurried or absent-minded adults is one that will become less as the risk is more fully realised. In the meantime drivers must recognise their responsibilities and drive with the utmost care, thinking less of permissible speed limits than of the public welfare.

Fire Prevention in France.

ONE excellent result of the Conference of the French Fire Service Association at Caen was the decision to establish a fire prevention Council after the model of the British Fire Prevention Committee. A special Commission of some thirty members, under the chairmanship of M. Lépine, the chief of the Paris police force, was appointed to consider details of the project, and it is announced that the representatives of various Government departments will be invited to participate in the movement. The organisation and general scope of the British Committee could scarcely be improved upon as a basis for the proposed French Council, but we gather that the intention is to devote even more attention to the popularisation of fire prevention than has been done in this country. The idea is a good one, for however much architects may succeed in reducing the spread of fires by the use of incombustible and non-flammable materials, the public always have it in their power to originate fires by careless or thoughtless habits.

The Doom of Dera Ghazi Khan.

AFTER a protracted conflict with the River Indus, the Indian Government now appear to think that the Punjaub town, Dera Ghazi Khan, is doomed to destruction by the untamable waters of the river. Founded in the XVth century by the chief Ghazi Khan, the town now has nearly 25,000 inhabitants. After disastrous floods in 1878, a masonry embankment was constructed by the Government, but four years later its northern end began to suffer from erosion, and was converted into a groyne. In 1896 additional defences were built, only to be washed away by flood in the succeeding year. In 1901 timber works similar to those employed with success on the Mississippi and Missouri were commenced, but partly washed away before completion. Last year an attempt was made to save the town by cutting a relief channel for flood waters, an endeavour which recent experience has shown to be of no avail. Arrangements have been made for removal of the inhabitants to Choratta, about ten miles from the town, thus giving some justification to the prophecy that Dera Ghazi Khan would some day be re-established near the tomb of its founder at Choratta.

Chancellors and Architects.

AT the Consistory Court at Norwich Mr. Chancellor North has had before him an application by the vicar and churchwardens of Attleborough for a faculty to do certain repairs to the church at a cost amounting to approximately 250*l.*, the chief item being 160*l.* for repairing the tower and bell chamber. Mr. William Gaymer, a member of the Restoration Committee, attended and opposed the application on the ground that no properly qualified architect had been employed. At a vestry meeting there were, he said, fifteen in favour of the plans, and eight, with himself, dissented, because the work which would have to be done to the beautiful old Norman tower was of a very delicate nature. That being so, he and his supporters thought the services of a competent architect ought to be secured before the building was touched. Although he was defeated on this point at the vestry meeting, he was convinced that a vast majority of the parishioners agreed with his view, and he handed in a letter from one of the most influential residents (Captain Kennedy) in support of it. The learned Chancellor said he entirely agreed with Mr. Gaymer. He thought a competent architect ought to be employed, and unless that was done he would not grant a faculty. This is in pleasing contrast to the behaviour of some other Chancellors in the past—notably in the far more important case of the restoration of St. Alban's Abbey, when the Chancellor, after admitting that he could not understand any drawing of the proposed work, scoffed at the ideas of those who wanted an architect appointed, and gave the work up to the tender mercies of a building amateur. One may hope that such a course of proceeding would hardly be possible now.

Mr. Seward and the Cardiff Corporation.

FROM a rather vaguely expressed paragraph in the *Glamorgan County Times* we gather that Mr. Edwin Seward has succeeded in preventing the City Council of Cardiff from obtaining legal standing for ignoring the pecuniary obligations of the preceding Council towards him. Many years ago, when Cardiff had not arrived at the dignity of being a City, Mr. Seward's design for a museum and library for Cardiff was selected in an open competition, and he was appointed architect to the then Corporation for carrying out the proposed building. Subsequently, partly on his suggestions, it came about that the Cardiff Museum was to be recognised as a national institution for Wales, and he was instructed to prepare designs for the museum as a national building. It appears that the City Council under the new *régime* not only propose to throw him over as architect, but have declined to consider themselves bound to pay him for the large amount of work he had done. According to the Glamorgan paper, they endeavoured to get a clause inserted in a Bill in Parliament, dealing in part with the national museum, to the effect that existing liabilities and obligations should not be transferred to the new Council. Mr. Seward has succeeded, before a Committee of the House of Commons, in preventing the adoption of this measure; whether he has yet obtained any more solid satisfaction we have not learned. Why the City Corporation should wish to get rid of Mr. Seward as architect we do not understand; it is at the best a very ungenerous action, after all he has done for the cause; and they are not very likely to get a better architect elsewhere.

The Carron Company.

THE Carron Company—iron-masters, iron-founders, coal-masters, ship-owners, etc.—which was founded in 1759, has celebrated its 150th anniversary by a

Digitized by Google

small illustrated pamphlet of the history of the firm, which is full of interest both in its letterpress and its illustrations. We wonder how many naval historians are aware that the class of guns known as "Carronades," and evidently regarded at the time as a formidable part of a ship's armament, were so called because they were designed and cast by the Carron Company. An illustration of this piece of ordnance is given. The pamphlet contains some notices as to eminent people who visited the works at different times, among others one Robert Burns, who, coming on a Sunday, was refused admission, and revenged himself by a sarcastic stanza scratched on the window of a neighbouring inn. The impressions of a French visitor, M. Faujas de St. Fond, French Royal Commissioner of Mines, who visited the works in 1784, are given at length, and are very interesting and exceedingly complimentary to the activity and energy of the firm at that early date. The first set of complete castings for James Watt's steam-engine was made at the Carron Works, and also the engines for the first steamship built in the United Kingdom, which were built at a cost of 393*l.* 10s. 10d. Before steam-vessels were in use, however, the Carron Company carried passengers in their own sailing sloops, which (according to a poster of March 5, 1779) were fitted out in the most complete manner for defence, and well provided with small arms, and "sail regularly, without waiting for the convoy"; no small recommendation in those fighting times. A company which can show a record of a century and a half, with a larger business than ever at the end of it, has a right to be proud of its history, and their pamphlet has much more than a passing interest. We shall preserve our copy as a historical document; and wish the company another century and a half of success.

THE INFLUENCE ON ARCHITECTURE OF MODERN METHODS OF CONSTRUCTION.

By Horace Cubitt, A.R.I.B.A.*

A retrospect of past ages of architectural evolution, of the ebb and flow of the tide of constructional and artistic achievement, forces the conclusion that in the choice of methods of construction and in the architecture largely dependent on such methods two factors have had predominant influence. It is evident that the materials used have had their effect in determining the form of construction to be adopted and imposing a limit to its possibilities, but of even greater importance in fixing the scope of constructional enterprise has been the human element, the *ego* of all those who have put their hands to structural work.

It must be admitted that without the presence of the faculties of enterprise and inventiveness in the dwellers on the soil the simple existence of materials is of little import. Less recognised, however, is the fact that men may have possessed full power to accomplish building achievements of the greatest magnitude, the suitable materials may have been ready to hand, and yet we find, from purely temperamental reasons, a less enterprising course to have been adopted. We have as an instance the Hellenic Greeks, whose buildings from the constructional standpoint are indicative of an intense conservatism. Yet who shall say that the Greeks, craftsmen of supreme excellence, possessed of a serene and vigorous intellect, master builders as they were in the world of speculative thought, could not, had they so desired, have erected structures of a magnitude rivalling the works of the Gothic builders of nearly twenty centuries later? Both vigour in thought and skill in masonry were present, but as a counterbalancing influence there was the belief that architectural excellence could only be attained by the following of recognised rules which rendered practically impossible the erection of buildings of exceptional height. Again, it is hardly conceivable that the Greeks, with their scientific knowledge, were ignorant of such a simple but most important constructional fact as the principle of the arch; yet we find no arch construction in the buildings of the Hellenic period. The vast edifices of imperial Rome may have been rendered possible of erection largely by the use of concrete, but had it not been for the existence of the virile, inconquerable Roman spirit it is certain that we should have seen no Coliseum, no Caracallan Baths, no massive, many-arched aqueducts linking up the thirsty cities with the far distant hills.

Enough has been said to illustrate the truth of the statement that the spirit of enterprise and the outlook on life current at any given period has had even more influence on the form of construction adopted than the use of any particular materials, important although these may have been in fixing the limits of practical construction. It is to be noted also that in the epochs of great structural development the temperament which brings forth novel methods of construction often at the same time likewise produces a logical and æsthetic treatment of the new forms.

Influence of Construction.

Upon the construction adopted depends very largely the type of architectural design. A disseverance, even in language, of architecture from construction is undesirable without due explanation. It is the thin end of the wedge which has already produced such a cleavage as to have occasioned the engineering design with its "added architecture," of which the Tower Bridge stands as a type, but of which, fortunately, both architects and engineers are becoming rather ashamed. In this attempt to consider the influence on architecture of certain phases of construction the standpoint desired to be taken up is one analogous to that of a person who, for instance, is discussing the influence on plant growth of certain kinds of cellular formation. No one would suppose in such a case that the cellular formation was in itself anything more than one of the bases of plant life, and neither should it be considered that construction can be dealt with as an entity, but simply as an all important branch of the art of building.

There is also the question of the true significance of the word construction. As at the present day applied throughout building work the term is used in rather a restrictive sense as embracing only the carcase work of a structure. Such a narrowing down is not justified when the derivation of the word is considered, and in dealing with the influence of methods of construction the word will be used in its wide significance as indicating the method of drawing together all the multitudinous materials which go to form a modern building.

Changes in Construction.

We are to-day situate at the beginning of an era in which there is but little doubt that the methods of construction are undergoing a change of no small importance. Within the last fifty years scientific knowledge and the numerous industries dependent upon such knowledge have progressed at such a pace as to render a decade of our time equivalent in enterprise to many a preceding century. When men's methods of life and thought are so rapidly changing it can hardly happen that the construction of buildings, linked up as it is with all phases of domestic and commercial life, will be in any respects immutable. Increase in scientific knowledge makes for progress in two ways—first, by creating a form of temperament which accepts with readiness the idea of change, so long as it means real advancement; and, secondly, by enabling the direct influence of science to be brought more and more to bear on architectural work. We see that science has already given us two new building materials, steel and concrete-steel, as regards the use and possibilities of which we are at present merely feeling our way, and who shall venture to prophesy that the next fifty years will not see further new building materials of similar importance brought to our use by modern science? It is perhaps improbable, but is not this the age of the materialisation of improbabilities?

Given as we have an outlook on life vastly different from that of our grandfathers, and materials never before used in the construction of buildings throughout the world's history, it cannot be expected that in the erection of our buildings we shall be allowed to deny ourselves architectural progress. The future with its possibilities and yet just as real attendant dangers is a burning question to architects. For it is unquestionable that if architects fail to adapt themselves to circumstances all but the decorative veneer of building work will come to be carried out by engineers to the disastrous decline of much that is great in architecture.

But that architects are realising the responsibilities of their position is apparent on all sides. Few will be content to sell their birthright as chief builders for the mess of pottage of mere decorative work. But artistic success will hardly be the portion of those who are without faith in the future of modern constructive work. Optimism is justified of her children, and if we of the XXth century are to produce living architecture we must have hope in such forms of design as the exigencies of the age compel us to select and adopt.

The Question of Tradition in Art.

In a discussion of modern developments in architecture we are bound at the outset to face the question of to what extent architectural tradition should be followed: But we have a clearer insight in such matters than was the case twenty years ago. Living scholars have seen the science of history raised from the study of unessentials and lifted out of the mire of war and massacre, of revolt and raid, of priestly plottings and palace intrigues, and placed in its rightful position as the science of research concerning the life and thought of all orders of the community throughout past ages. In these days of rational criticism and analysis the history of architecture, in a somewhat similar manner, is now beginning to be dealt with less superficially. We are now beginning to realise that it is not so much the outward forms of the historic styles which constitute true architecture as the intangible spirit which has inspired such forms—a spirit not to be reincarnated by any slavish copyism, as the works of many of our mediævalists of the last century stand to testify. Renaissance architecture may possibly, however, be thought to illustrate the contrary, but the men to whom we are indebted for the early and most notable examples of stately building in this style received their education in the age of a great literary revival, and drew their first breath and lived their whole lives in an atmosphere permeated by classic tradition. Also we know that the architects of the early Renaissance studied not so much the exact details as the general principles underlying the best of the old Roman work.

So, with the echoes of the hard-fought Battle of the Styles in our ears, we are yet in spirit far remote from those days when

*This is an essay which was submitted by its author for the Institute of Architects' Essay Prize, when it obtained the second place and a prize of ten guineas.

Digitized by Google

all followers of architecture took upon themselves to believe (most presumptuously, we now think) that art could be satisfactorily manifest only in their own favourite historic style. To remember that even then there were internecine wars, that followers of mediæval ideals were divided among themselves as to whether absolute copyism of old forms was the only road towards perfection, or whether a little individuality might be allowed! We are now far removed from such fanaticism. Year by year augments the ranks of those who have no narrow conception of art and who consider that in the architecture of the future we shall not go far astray if we bring to bear upon the complex building problems presented for solution all knowledge derivable from the work of past centuries, provided only that we do not allow such knowledge to hinder us in satisfactorily supplying the needs of modern life. The "art nouveau" ideal that we should affect wilful blindness towards all that the past can teach us is undisguised anarchism, and is naturally and deservedly discredited.

Whether we shall at length evolve a style voicing in brick, stone, steel, or other more modern materials the spirit of the XXth century is for the future to show. But here again may we not be allowed a little optimism? Surely it is not still considered architectural madness to hope that in time we may succeed in following the lead of every historic age and at length produce a matured style?

It may suffice for the present that we are so far advanced as openly to admit of construction having its great and legitimate influence on architecture. A century or so ago in all buildings of importance the construction had little, if any, influence on the design. Once the appearance of the proposed building had been pronounced satisfactory construction was then called in only for the purpose of putting into substance the draughtsman's conception in any such manner as might be the least unsatisfactory. Let this illustration of the trend of modern thought and practice go to hearten us in our work. We have at least burst the bonds of rigid and unreal formalism, and natural growth is now possible.

The Trend of Modern Construction.

In considering the progressive tendencies which exist in modern construction we enter upon a very wide field. It will hardly be sufficient to deal only with what has actually come into structural form. In fairness to our subject, and in order to obtain a well-considered and broad-minded view, it is necessary to treat not only of the actualities, but also of the fast materialising potentialities of modern construction. Interesting as may be the influence on architecture of our present construction, this is likely to be entirely overshadowed by that of the immediate future, concerning much of which we are already in a position to speculate with a fair degree of certainty.

All who are acquainted with the evolution of Gothic architecture deem of great value, as one of the most noteworthy characteristics of the style, the systematic concentration of loads on comparatively small areas of support. Constructionally this is the very essence of the most highly developed Gothic work. It has been questioned whether the piers were reduced in width for reasons of architectural effect or whether the growth of this pier construction was dependent on practical considerations. Some authorities have argued that the desire to provide large stained-glass windows was responsible for the construction of comparatively small piers. Others have contended that economy of construction determined the size of the piers, and the space between was naturally utilised for the display of painted glass.

Whatever the true reason we have now at the present time a very similar tendency for continuous walling to be superseded by piers united by thin panel walls. With us, of course, the reason is purely utilitarian—a grouping of the material in piers in points where it is wanted to carry loads, and a reduction in the thickness of the walling in places where it has to carry only its own weight; the result possibly being a net reduction in the total amount of the walling. The building regulations throughout the country at present, however, operate in confining this scientific form of construction to buildings erected by bodies such as railway and dock companies which possess statutory powers, and are on this account outside the jurisdiction of local authorities. But we are at the very verge of a striking departure in the character of our building laws. The London County Council propose in the ensuing session of Parliament to promote a Bill to render lawful the erection of steel frame and reinforced concrete buildings—to legalise pier and panel wall construction, in fact—and provincial towns will, no doubt, shortly follow the lead of the metropolis.

Across the Atlantic we find that a pier treatment of architecture is already in existence, and in addition we have a "bean stalk" growth of building which is characteristically American. But the erection of buildings of such enormous height in this country is contrary to the whole current of both architectural and popular opinion. The business classes, who exercise financially a control not to be disregarded, appear to be adverse to any great increase in the height of buildings. Thus, although we may have isolated instances, as now at Liverpool, it does not seem probable that we shall in any way be forced to follow the example of our American *confrères* and vie with them in attempting to attain the clouds.

While in this instance the cold blast of utilitarianism does not appear directed against our cherished notions of the limits to be adhered to in the direction of pleasing buildings, yet this restlessness and desire for progress at all costs, associated, necessarily it may be, with modern commercialism, does in another instance seriously react on our ideals of architecture.

Modern Conditions.

Until recently the building art has had as its pride the practical certainty that a finished work was not merely for the use and interest of a passing generation, but that future centuries would appreciate and carefully maintain any such record of the past. Such a feeling has been doubtless no small consolation to those who have found in the multiplicity of problems connected with the erection of a building of great magnitude a burden almost too great to be upheld. While in buildings of a public character there is not at present any noticeable desire to adopt the use of materials and methods of construction other than those which are calculated to produce a monumental result, in commercial buildings in large towns it is unquestionable that we as a matter of custom no longer build for more than two, three, or perhaps four generations. The standards of sanitation and of suitable arrangement and planning are so rapidly being altered, business methods are becoming to be so revolutionised in the course of a few decades, that from a purely economic standpoint there is no need to erect a building of the most enduring materials if it is to be used for commercial purposes. Probably in eighty or a hundred years, possibly in a much shorter period, its internal arrangements will have become obsolete, the character of the locality in which it is situated will have changed so utterly, the building will have become so unsuited for its requirements and out of keeping with its surroundings that the most reasonable course to adopt will be to demolish and to rebuild. This modern tendency will hardly result in the good of architecture, however satisfactory it may prove to be from the point of view of the architectural practitioner and all connected with the building trade.

But the question must be faced. Architecture has ever to adapt itself to changing conditions. If, in the case of commercial buildings, architects, elsewhere the artists of the ages, have merely to act as glorified scene-shifters, to fix up a suitable stage architecture until the curtain of half a century or so shall have rung down, they must perforce accept such a position and design accordingly. In matters of construction the influence of such changed conditions is already being felt. Materials, such as steel, are being used which in all probability have a distinctly limited life, and also the character of the more ordinary building materials is not such as will enable them to stand the test of time. But the purpose, the erection of semi-temporary buildings, is achieved. No reason exists for deploring the absence of qualities which under the special circumstances are not required. Economy of material is one of the world-recognised axioms of architectural work; and economy in the characteristics of such materials may also in certain cases be similarly desirable.

While the construction is adapting itself to circumstances, should not the same be said of the architecture? If the construction of a building is such that it cannot reasonably be expected to last more than a hundred years, it is hardly consonant with the canons of art that its external appearance should, by mental comparison with that of other buildings, invite the impression that it has been built to stand for four or five centuries. It is surely desirable that our architecture should at least make some attempt to tell its own story.

We have of necessity to accept the fact that commercial buildings are no longer likely to be represented in the historic architecture of the future. In this we must submit to the inevitable. But in our public buildings and all other buildings which do not come under the compelling power of crass commercialism it will be for us to see that in these at least we retain the characteristics of enduring architecture. It may be thought that the plea for the use of none but the best and most monumental walling materials—to wit, stonework, or perhaps brick and stone combined—and also generally for good workmanship and materials throughout, may be based on the assumption that such a course constitutes the truest economy. So great, however, is the effect of compound interest spread over a long period of years that it can be shown by figures to be more economical to erect a cheap building. If the difference in cost between a hundred years' building and one constructed to last at least double this period be placed out at compound interest, at the end of ninety or a hundred years a sum of money will have accumulated sufficient to cover the whole cost of pulling down and rebuilding, and a substantial balance will yet remain. This can be shown to hold good despite the fact that the cost of repairs to the cheaper building will be considerably more than that occasioned where a building is erected in a thoroughly substantial manner and with the very best materials. The argument that good building is the truest economy proves to be thus but a broken reed. Anyone who is sceptical on this point should work out an example with the help of the ordinary interest tables, bearing in mind the fact that the first cost of an economical building will probably be from 70 per cent. to 75 per cent. that of one of a highly substantial character.

Utilitarianism contested solely on its own ground again appears to triumph, but fortunately, however, the decision rests on a higher plane. In the various classes of public and ecclesiastical buildings the elements of strength and solidity, of stubborn resistance to the wearing effect of time, are factors which it is impossible to discount, and which in the eyes of all cultivated persons justly takes absolute precedence of all other considerations. In the higher class of domestic buildings the same applies with equal force, particularly where such

Digitized by Google

buildings are erected in connexion with property which has been owned by several generations of the same family and is thus of peculiar interest to the present holders. It is fortunate that, even outside architectural circles, there is a strong feeling in favour of the erection of buildings of a monumental character; and in the strength of this spirit depends the future of architecture, in the significance, that is to say, which the term has hitherto held throughout history.

New Materials.

Most intimately connected with modern constructive tendencies are of necessity the new materials which during the past half-century have come into existence, or which now for the first time are being utilised in building work. The use of steel and reinforced concrete has been already incidentally mentioned. Steel as a building material has met with considerable criticism owing to its two undesirable characteristics—the liability of loss of substance due to intermittent oxidation, unless very great precautions are taken, and the unfortunate ease with which unprotected steelwork will collapse utterly under the temperature occasioned by an ordinary fire. As regards the first, it is certain that steelwork as a building material does not possess the enduring characteristics of brick, stone, or even of timber. Buildings which have been so long in existence as to have become of historic interest in most cases have had at some period to undergo either absolute or comparative neglect. Where steel occupies chief place in the construction of the supports and enclosures of a building it is probable that with the greatest care the life of such building cannot be measured in terms of centuries. It is certain that neglect even for a short score of years will result in incipient failure or possibly actual collapse. If it were not for the modern tendency to erect buildings constructed of set purpose to last only for a period of years, steel would hardly have attained its present position as a building material. But buildings of this nature being now largely prevalent a material more suitable for use in such structures hardly exists. For facility of erection and for economy of space occupied by supports steel is at present without a serious rival.

With regard to the behaviour of steel when subjected to fire, if a proper protection of concrete, plaster, terra-cotta, or brickwork be provided there is little risk of failure, and such protection should be considered essential in the case of all stanchions and joists. Statements are sometimes made concerning the artistic effect which may be produced by leaving the metal open to view and burnishing or otherwise decoratively treating the surface. Those who advocate this course doubtless consider that such exposure of constructional members is in accordance with sound artistic principles. But where a heavy load rests on a girder, as in the case of a shop front, steel by itself in such a position is no legitimate constructional material at all. It would be as reasonable in high latitudes to use a bres summer of ice. Such an ice bressummer might do its duty for a good number of years until one summer an extra rise in temperature would occasion its collapse. An unencased steel joist will be quite satisfactory until that not infrequent concomitant of our modern civilisation, a fire, occurs. Then it will be of no more value for carrying a load than the analogous beam of ice.

The exposing of steelwork violates an important principle of modern building science. If it is desired to let the constructional lines be visible, the casing may follow the form of the steel members, and there appears to be no reason why, by means of plaster or other similar fire-resisting treatment, a truthful and satisfactory result should not be thus obtained.

Advocates of reinforced concrete contend that in these two characteristics of durability and resistance to fire in which steel is deficient their combination of materials will withstand criticism. Undoubtedly our existing experience goes to prove the strength of such a contention. Instances are before us of metal embedded in concrete which has been found after very many years to be bright and free from all appreciable signs of rust. It certainly does appear that reinforced concrete, if designed with an ample factor of safety and executed with the best materials and in the soundest manner, is likely to take rank with stone, brick, and plain concrete as one of the most durable building materials. But so very much depends upon the high quality of the materials and the excellence of the workmanship, in addition to the competency of the designer. As regards the resistance of the material under fire, we have some little experience derived from recent conflagrations in the United States, and comparison under such conditions with buildings of the more customary forms of construction has resulted very favourably for reinforced concrete. While the use of the material is at present chiefly restricted to bridges, viaducts, grain silos, and, less occasionally, to buildings of the warehouse type it is probable that in the course of time it will be put to much more general use. If under the test of time its durability comes to receive general acceptance it will probably be used in many large stone-faced buildings to take the place of the present brick backing, although an efficient method of bonding to masonry has yet to be devised. It is possible that a thickness of stone amounting to little more than a veneer, if well secured, might be found to be satisfactory. But a stone treatment very different to that to which we are now accustomed would then be necessary. With but a veneer of stone all heavily-moulded cornices, string-courses, and other architectural features of this nature would be out of keeping with the thinness of the facing material. Probably in buildings of such a proposed character as to render desirable a light decorative treatment opportunity will be taken to use, externally as well as internally, the old Byzantine material, vitrified mosaic, applied direct to the face of the concrete by means of Portland cement. The well-known London example of such a material—the façade of Pagani's Restaurant, Great Portland-street, though erected some ten years ago, shows not a sign of failure in any part. Thus, although the use of glass mosaic is considered by many to be injudicious in our English climate, it would appear that with the best materials and workmanship, and with the use of the more sober shades of colour, a satisfactory and permanent result may be obtained. The selection or discovery of a sound and pleasing facing for reinforced concrete is one whose determination in a satisfactory manner will have a great influence on the future of the material.

Closely connected with these two new main structural materials is the development of the plastic and decorative arts in the form of ordinary terra-cotta and of materials similar in main composition but with an external glaze or skin of any required colour.

With steel frame construction in general use for the less permanent commercial buildings there would be a wide field for such materials as terra-cotta to act as a protection to the steelwork and to form the panel walls between the cased stanchions. Unfortunately, in our existing buildings bad terra-cotta of crude and blatant colour, of vulgar and meretricious design, is largely prevalent. This tends to give the material a bad name, which is in no way justified when the fine and restrained work of several master users of terra-cotta is brought to mind. Whether for external work we shall see in general use very highly-coloured ware of this nature is, however, much open to question. Although variations in colour may be a satisfactory means of obtaining pleasing architectural effect, the use of bright flaring colours in our English climate is entirely another matter. Some persons contend that in this often dull and gloomy atmosphere vivid colouring in our buildings would tend to give a cheerful and pleasant tone to life. Nature in her colour effects aims, however, at a different goal, else should we possess the glories of tropical colour vegetation as a contrast and counterpoise to our more restrained harmonies of sea and sky. The incongruity of such colour blending would, doubtless, be apparent even to those who are advocates of the erection of bright-colour buildings.

In the interiors of our buildings there is much to be said for the use of glazed and enamelled ware of all colourings. From a practical standpoint there are many positions in modern buildings where such cleanly and impervious materials are of great value. Gregariousness rather than the old-time domesticity appears the tendency of the day, and in the increasingly used places of public resort, such as concert-halls, restaurants, hotel lounges, and also in the entrances and staircases of residential flats, there is a great field for the use of such materials. Here, again, as in the case of ordinary terra-cotta, the standard of taste is deplorably low, but glimpses may often be obtained of high decorative possibilities, and, as in the somewhat similar art of colour printing, every year shows improvements in technique. It should be for architects to see that the art of design does not lag behind.

Not a few other though minor materials have recently come into being, some of possibly genuine importance, but no small number are of a purely ephemeral character, and owe their continued existence to the help of the plausible advertisement. But on the two great new structural materials, steel and reinforced concrete, and on the several forms of the plastic arts, it is certain that a great amount of our future architecture will depend.

The Confluence of Art and Science.

It has from all time been the fortune of the art of building to obtain its impulse and life in a manner equalled by no other pursuit from the mingling streams of art and science. Here, as in no other instance, do the salt waters of science derive much vivifying influence from the ever-fresh springs of art. The tendency of the age is clearly towards a still closer connexion between art and science in all that is best in architecture. While art must always remain pre-eminent in all work which appeals to the higher sensibilities, science, present at one time only in the guise of experience, now claims fuller recognition. Without the help of science to determine the stresses to which materials will in any instance be subjected, and the limiting stresses per unit of area which they severally can withstand, architects would be groping in constructional gloom, and the work of dealing with the highest problems of modern building would be in the hands of engineers. The age is gone in which rough rules based on experience were found sufficient. The question of cost occupies to-day such a predominant position that we can rarely allow a factor of safety greater than absolutely necessary; and, even if this were not so, all our construction is fast forsaking the beaten paths where precedent prevails. Were we able to proceed with our constructional problems without the assistance obtained from scientific research it would yet be very illogical that in this case architecture should refuse the proferred help of science, while readily accepting its assistance in many other directions, as, for instance, in the manufacture of the great majority of modern building materials.

The advancement of the position of science in relation to the erection of buildings cannot fail to prove an influence of great moment both particularly in the construction and generally throughout the design. A tendency towards the elimination in the construction of all that is not essential and an exact adjustment of the several parts in accordance with the calculated stresses must make for the purification of architecture. In this we are perhaps likely to find a remedy for

Digitized by Google

diseases of long standing, for insincerity in construction, for formalism fatal to all true progress, for ostentation often descending to vulgarity. In the coming architecture this closer connexion with science demands its legitimate influence on the design.

In our domestic buildings of the XVIIth and XVIIIth centuries the charm of picturesqueness, apart from such elements as may be due to situation and surroundings, owes its existence to the unstudied manner in which the design and erection of such buildings was effected. The comparative absence of a set and regular scheme either in plan or elevation produces a charm difficult perhaps of analysis, but none the less real. We, however, are compelled to worship at other altars. Attempts with all the modern paraphernalia of working drawings, specification, and quantities, and the rest, carefully to produce the unstudied effect of our historic domestic architecture, must sound the depths of hypocrisy and pretence. It is customary nowadays to sneer at the sham mediævalism of Horace Walpole and his contemporary admirers, but it were well if first we should face the question whether we ourselves have not a touch of the same malady.

Instead of endeavouring to disguise the exact and scientific manner in which modern structures are erected, rather should we accept the limitations of our position, and offer no hindrance to the legitimate influence which our methods of designing and planning and our mode of construction must have on the formation of our buildings. Unstudied picturesqueness is out of the question. There must undoubtedly be a tendency towards regularity of planning and probably towards a still greater use of rectilinear and geometric forms. A building designed purely from an engineering standpoint structurally becomes on plan a regular and ordered series of rectangles. It is a rhythmic conception of joist and stanchion, stanchion and joist, of a design determined by recognised rules applicable to the materials adopted. All this we may say may be very good engineering, but to the artistic temperament it is cold, hard, and lifeless. Here, however, stretches the domain of architecture. Not that the completed engineering design should be "made architecture" by the naive addition of decorative features, but that the engineering conception, the plain construction, in other words, should be altered, moulded, adapted, and withal beautified in any manner which may be appropriate, having regard to the end in view—the production of architecture. While attempting to evolve a logical and artistic treatment of our building problems there is much that we can learn from the two most pure constructional building styles, the Greek and the Gothic. From the Greeks we, who are going back to the old form of lintel and support, should be able to learn much in the way of simplicity and restraint, combined yet with the highest form of art, in dealing with questions arising in the use of these age-tried elements of architecture. As regards the architectural solution of great constructional problems, and more particularly the possibilities of effective pier treatment, we have at hand rich mines of knowledge, lying for the most part unworked and indifferently prospected, in the mighty buildings of mediæval Europe.

Possibly in this greater utilisation of engineering science to meet the needs of architecture ground may be recovered which, from the view of art, has latterly borne but barren fruit. The great Roman builders cared little whether they were called upon to build a temple to the Goddess of Fortune, a group of vast vaulted halls for the purpose of public baths, an aqueduct, a wide-spanning bridge, or an arch to commemorate the triumphal return of some victorious general. All came within the scope of their profession. The craftsmen of the Middle Ages were not only engaged on the masonry of towering cathedrals, abbey minsters, and of the less pretentious village churches and domestic buildings, but also put their hands to the ruder work of castle fortifications and the erection of bridges, many of which latter still remain as examples, we should now say, of Gothic engineering.

Many of the great architects of the Italian Renaissance won fame not only throughout the allied decorative arts, but in the robust science of military engineering. It does not speak well for the fibre of our architects of the XVIIIth and early XIXth centuries that at such a time of great constructional enterprise architects, and with them architecture, should have been so easily dispossessed of all rights of control over the erection of structures of what are now termed engineering type. The result is seen in every town of importance and throughout the extent of all our railway systems. Even if the structures erected by engineers are not, as some most decidedly are, blots upon the landscape, it rarely happens that so satisfactory and monumental a result has been achieved as would have resulted if the designer, in addition to sound engineering knowledge, had also possessed an appreciation of proportion and other like elementary principles of art.

If in the future scientific knowledge may come to be as much in request for the conduct of building work as for that of engineering, no reason will exist for continuing a distinction between these phases of constructive enterprise, and the unwarranted assumption that the quickening power of art is only in one case desirable may be swept away. The possibility that, as an incident in this greater mingling of art and science, art may recover some of her lost possessions should go to relieve the minds of those who find it difficult to adjust their outlook to the force of circumstance, and who view with not a little uneasiness the intrusion of mathematical and experimental science into the realm of architecture.

Recent Architectural Developments.

Critical analysis of the achievements of the hour is ever a temptation of fortune, and all the greater when intangible influences rather than actual facts are under consideration. In this opening decade of a century fraught with astounding possibilities in the field of science it is difficult to say to what extent architecture at this very moment has been influenced by the rapidly changing conditions of life. The architecture of yesterday we can criticise and discuss, on that of to-morrow we can speculate with a considerable degree of interest and appreciation, but as regards the art of to-day we lack perspective and only a tentative treatment is possible.

We do not need to go far back into the recesses of the past to arrive at the time when the influence on architecture of the then recent forms of construction was responsible for nothing more than disquietude and distraction. Men have striven, and with pride, against even the occasional utilisation of materials not possessing the sign manual of centuries' use. Even to-day there are persons who, when contending with constructional difficulties of considerable moment, endeavour to reach a laboured solution by masonry work alone, although the judicious use of iron or steel would be both more economical and efficient. Little objection could be taken to the attitude that these materials demand most careful treatment, particularly when they are used in conjunction with other substances. This would be but sound caution. But the endeavour has been to dispense with any aids of this description, because here is the contaminating touch of modern science, here a thing accursed by engineering associations; and this despite the fact that iron ties were used even in Gothic work and that the most striking figure among English architects thought it no shame to bind the base of the dome of St. Paul's with a girdle of iron, a girdle which recent researches have shown to be practically untouched by the hand of Time. It is small wonder that until such an attitude had been for the most part forsaken the possibilities of modern construction could be of small interest to architects and that architecture pursued its way little affected by changes in construction, these having influence only in the world of engineering.

In more recent days, when architects have gradually come to appreciate many of the possibilities in construction which were first illustrated by engineers, it has yet unfortunately happened that, with a few brilliant exceptions, those who have given chief attention to the solution of modern problems have been influenced by crudely practical rather than by artistic ideals. For the presumed reason that much architecture of the commercial type is often fast bound in the fetters of utilitarianism many most competent men have been content to pursue the beaten paths of building where the construction usually follows the lines laid down by experience. This is to be deplored, and while traversing important thoroughfares in any of our large towns and noticing the modern street architecture, the thought arises that blame for such unsatisfactory work does not wholly rest with owners holding materialistic views nor with uninfluential, down-trodden members of the profession, who, for a livelihood, have had to turn out designs to order, but that some of the discredit attaches also to a school of architects who, with the highest artistic gifts, have, to the loss of architecture, preferred the cloistered seclusion of easy and pleasant domestic work to engaging in the more strenuous architecture of the city highway.

Even among those who have resolutely faced the problems incident to the design and erection of large industrial and commercial buildings there still appears to have been a subconscious striving to resist the natural tendencies of the age. We have as an instance that much-debatable subject, the modern shop front carrying the face of a many-storied building. For the last half-century the shopkeeper has been consistently requiring more and more plate-glass for the purpose of showing his goods to the best advantage. The architect, with the support of the whole of his profession, has been just as consistently fighting tooth and nail against the reduction of the pier areas. But it has been an unequal battle. The power of the purse in such an instance is all-compelling, and this power, directly as owner or indirectly as tenant, is almost invariably in the hands of the shopkeeper. Obviously, if an architect will not provide a client with the window space he requires the latter can go to an engineer or a builder and get what he wants. Thus the architect is faced with the alternative of losing the work entirely or carrying it out in the best manner possible under the circumstances, and he most naturally usually adopts the latter course. A satisfactory architectural treatment is indeed difficult, and when the piers are required to be cased by mirrors, as is sometimes most absurdly stipulated, an attempt to produce architecture is impossible. But in the more usual case, where small piers are not objected to, a fair solution of the problem seems to exist in a light pier treatment of the face of the building above the shop front. From the shopkeeper's point of view there is no objection whatever to the provision of liberal window space in the upper stories, and it is but sound architectural treatment to endeavour, both actually and visibly, to reduce the weight carried by the customary small piers of a shop front.

We should find good cause for criticism if in the early days of Gothic architecture it had been customary to carry out only the lower part of the building in the new style and on the early pointed arcading to superimpose the frowning masses of Norman masonry. Yet this is in effect what we have for years been doing in many of our shop buildings.

Digitized by Google

The front of Nos. 158-62, Oxford-street, illustrates this new departure in the treatment of a commercial building. Leaving on one side the question of the marble facing material of this building, it is probable that the architect (Mr. Belcher) will, at any rate in the future, be considered to have done much more towards the solution of a pressing architectural problem than if he had followed such an example of reaction—considered solely as shop architecture—as we have in the great rebuilding scheme of the Quadrant, Regent-street.

Among the causes why, till but recently, no special study was given to the legitimate influence of our modern construction was the so-called discovery of a new style, the "art nouveau." Many who, rightly dissatisfied with an epoch of copyism and formalism, might doubtless have done much for the true advancement of architecture have been lured into the fever swamps of forced and irresponsible originality in their search for that *ignis fatuus*, a new, ready to hand style of architecture. Great harm has been done by this exploitation of the spirit of progress for unworthy and futile ends. There has been a not unnatural reaction against any attempts at originality of treatment, and it may be many years before true architectural progress can be dissociated in the minds of many from all that is comprised in the term "new art." Not that there is any connexion between a consistent treatment of architecture in accordance with the methods of construction which are being evolved under modern conditions and the vagaries of the "art nouveau," where construction becomes the bond servant of irresponsible fancy; but some common ground exists in that in both cases there is a departure from established usage.

[The remainder of the essay will be given in our next issue.]

TIMBER BRIDGE OVER THE WEY, GUILDFORD.

THE illustration, from a photograph by Mr. Shawcross, of Guildford, shows the very satisfactory timber foot-bridge, at once solid and picturesque, which has just been built across the Wey, at Guildford.

The design of the bridge is by Messrs. Clemence & Moon, architects, of Guildford. Messrs. Henry Adams & Son, of London, having acted as consulting engineers.

The bridge is of oak from the Weald of Sussex, without any dressing; the clear span is 63 ft. 4 in., and the width 5 ft. It was built in fourteen weeks, at a cost of 394*l.*, raised by public subscription. The bridge was formally opened, by the Mayor, on Wednesday the 25th ult.

The design was selected in a competition, in which sixty or seventy designs were sent in; that by Messrs. Clemence & Moon having been approved by Mrs. G. F. Watts and Mr. Thackeray Turner.

The illustration shows that the bridge is built amid surroundings where it was very desirable to avoid anything that would be out of harmony with their natural picturesqueness; and we may congratulate those concerned on a complete success in this respect; they have erected what is both a good piece of structure and a pleasing object.

NOTES FROM PARIS.

THE attic of the fine façade of the Hotel des Monnaies, built 1771-1775 from the designs of Antoine, has just been decorated with six statues in stone symbolising respectively Law, Prudence, Force, Commerce, Plenty, and Peace. The originals, which were the work of Le Comte, Mouchy, and Pigalle, had been removed on account of their crumbling condition, and the new statues have been modelled on casts taken of the originals.

The monumental staircase in the Louvre, carried out by M. Redon from the original design of Lefuel, is just completed. It is surrounded by colonnades and caryatide figures, and is to have a fine balustrade in wrought iron.

At the Hôtel de Ville the fixing has been commenced of a portion of the decorative paintings commissioned from M. Olivier Merson for the decoration of the two State staircases. These will include the lower part of the right hand staircase, the vaulting over, and the cupolas of the two parallel galleries. Unfortunately, M. Merson's other work, especially that at the Opera Comique, has prevented him so far from completing this portion of the Hôtel de Ville decoration according to the scheme set out by the architect Ballu.

The death is announced, at the age of 58, of M. Georges Dejean, member of the Société Centrale des Architectes, and expert architect to the Civil Tribunal of the Seine.

Correspondence.

THE EFFECT OF PAINTING HOT-WATER RADIATORS.

SIR,—A valuable contribution to the subject of domestic engineering is the paper by Mr. John R. Allen, read at the summer meeting of the American Society of Heating and Ventilating Engineers. It is only intended here to draw attention to a few of the conclusions arrived at after three months' tests in the experimental laboratory of the University of Michigan. Architects desiring detailed information will, I believe, be able to obtain the complete paper from the National Radiator Company, Ltd., by asking them for a copy of the August number of their publication, *Domestic Engineering*.

The interesting fact is that the transmission of heat was almost the same with fourteen coats of paint applied to the radiator as with two coats, and that the effect apparently depended upon the last coat applied, while the intermediate coats through which this heat was transmitted had very little effect upon the heat transmission. That is, the heating effect of the radiator was more affected by the condition of the surface than by the material through which the heat was conducted. The various coats underneath the last coat made very little difference in the heat transmission.

Different vehicles for carrying the pigment give different results; for instance, copper bronze and shellac seem to be better than copper bronze and linseed oil, so that the vehicle appears to have some effect on the value of the heat transmission of paints.

Tests with white lead paints show that the transmission effect with white lead and oil is practically the same as with unpainted radiators, and the same may be said of zinc paints—light green and white.

Finally, the tests appear to show that the poorest coverings are the copper and aluminium bronzes; the best materials tried were the enamels, while white lead paints and zinc paint are only slightly less in transmission effect than a coat of enamel.

G. A. HUMPHREYS, F.R.I.B.A.

COUNCIL SCHOOLS, CRAMLINGTON, NORTHUMBERLAND.—Council schools have been built by the Northumberland County Council Education Committee at Cramlington village, at a cost of over 10,000*l.* The designs for the building of the schools were competitive. The successful competitor was Mr. Karl Spurgin, of Newcastle, and the schools are designed to accommodate nearly 700 children. Built of ordinary pressed bricks, with stone facings, the building is of two stories. The contractors were Messrs. Bertram & Bolam, of Birtley.

Foot-bridge over the Wey, Guildford. Messrs. Clemence & Moon, Architects.

Digitized by Google

THE BUILDER

SEPTEMBER 4, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

SATURDAY, SEPTEMBER 4.

Manchester Society of Architects (Incorporated).—Visit to Liverpool. The following buildings to be inspected:—The New Cathedral, Mr. G. Gilbert Scott, architect; Dock Board Offices, Messrs. Briggs & Wolstenholme, Hobbs & Thornely, architects; the Hall and Reception Rooms at the Town Hall (1754), Wood, of Bath, architect.

TUESDAY, SEPTEMBER 7.

Manchester Society of Architects (Incorporated).—Visit to the Y.M.C.A. Buildings, Peter-street, now in course of erection (Messrs. Woodhouse, Corbett, & Dean, architects).

FRIDAY, SEPTEMBER 10.

Manchester Society of Architects (Incorporated).—Visit to the Garden Village, Burnage.

ORDNANCE SURVEY.

FROM an official report on the progress of the Ordnance Survey up to March 31, 1909, it appears that the revision of the large-scale maps (1-2500 or 25 in. to a mile, and 1-10560 or 6 in. to a mile) is being carried out, with the sanction of the Treasury, at a rate to ensure that no part of Great Britain will have been unrevised for more than twenty years, and there is now no area which has not been brought within this category. With the exception of the coloured edition of the 1-in. map of Scotland and of the 2-mile maps of Scotland and Ireland all the small-scale maps (viz., 1 in. to the mile, 2 miles to the inch, 4 miles to the inch, 10 miles to the inch, and 16 miles to the inch) are now complete, and are issued to the public in the various forms described in the catalogues of publications. New editions of these maps are issued from time to time as the normal revision of the 1-in. map in the field progresses. The survey and publication of the 1-2500 maps were completed on March 31, 1890, with the exception of Lancashire and Yorkshire, which were similarly completed and published in 1895, having been originally published on the 6-in. scale. The field work of the first general revision of the original 1-2500 plans, which was commenced in 1894, has been completed, and the revised plans have now been published. The field work of the second general revision is now in progress in Yorkshire, Lancashire, Cheshire, Flint, Hamshire, and Sussex, and publication follows as rapidly as possible after the completion of the manuscript plans. The revised 6-in. maps of England and Wales are, as a rule, being reduced from the revised maps on the 1-2500 scale, and published by heliozincography in quarter-sheets. In uncultivated districts the revision is made direct on the original 6-in. maps. Publication follows as soon as possible that of the 25-in. plans. The publication of the 6-in. maps of the first general revision is now complete, and 1,477 sq. miles of the second general revision have been published during the year. Maps of the whole country on the scale of 1 in. to a mile are published in various forms. Last year 4,412 sq. miles were revised, 6,658 sq. miles drawn, and 6,096 sq. miles engraved. As revision progresses the coloured map is now being issued in larger sheets, seventy-one of which have been published. Combined 1-in. maps in outline have been issued for various districts and centres. The map on the scale of 2 miles to an inch is based on the 1-in. map. It is now available in the larger sheets for the whole of England and Wales. As reprints of the sheets are required any recent revision available on the 1-in. map are embodied. The edition of this map on the larger system has now been completed and published in the larger sheets. The plans have been published of all towns entitled to a large-scale survey at the date of the survey of the district in which they are situated. Surveys have been extended and revisions made at the expense of the local authorities in the case of the following towns:—Aberystwith, Cambridge, Cardiff, Carlisle, Coventry, Doncaster, Exning, Grimsby, Hartlepool, Newcastle-on-Tyne, Rochdale, Sheffield. Similar work at Leeds is at present in progress. The extension of the 5-ft. scale survey of London, which was undertaken for the purposes of land registry, is completed.

Fifty Years Ago.

FROM THE *Builder* OF SEPTEMBER 3, 1859.

A PROPOSAL AS TO BLACKFRIARS BRIDGE.

THE recent fall of the bridge at Walton-on-Thames (happily unattended with loss of life) leads us to think of what may happen one day to Blackfriars Bridge, and to notice a scheme by Mr. H. G. Coombs, of Union-street, Borough, for preventing such an occurrence there, which is now claiming the attention of the Bridge Committee.

There can be no question that the matter demands very serious attention, for the condition of the bridge is deplorable in the extreme; and looking on the face of matters, it certainly seems strange that it should be allowed to remain in its present state.

Mr. Coombs's plan consists in removing the three central arches of the bridge, and substituting a cast-iron elliptical arch of 285 ft. span, with a radius of curvature at the crown of 500 ft. The arch is composed of eight ribs, six of which are of cast-iron, and the two external ones are of wrought, to provide against risk of fracture by collision; the carriage-way is supported on cast-iron corrugated plates, and the footways are on a lighter construction.

The idea is a bold one, and deserves consideration. At any rate, it is quite time that some stir was made in the matter; and we shall thank Mr. Coombs or any other gentleman who may be instrumental in leading to a remedy of what is admitted to be a serious evil.

*** It seems a pity that this idea was not carried out. We should then have had some portion of the fine XVIIIth-century masonry bridge preserved as a record; and in an architectural sense the effect would at any rate have been better than that of the tawdrily-designed bridge which was substituted, and unfortunately still exists to annoy the eye of every architect.—ED.

SELBY ABBEY.—The reopening of Selby Abbey is announced to take place on October 19, the third anniversary of the fire. The Archbishop of York will perform the dedication service and preach the thanksgiving sermon. A faculty has been granted in the York Consistory Court empowering the Rev. Maurice Parkin, the vicar, and the churchwardens of the parish church of Selby, and Lord Wenlock, Chairman of the Executive Committee appointed to carry out the restoration, to fit up a side chapel at the east end of the north aisle, and to erect an oak screen on the south side to divide it from the easternmost part of the church, etc.

Illustrations.

ADDITIONS TO TOWN HALL, STOKE-UPON-TRENT.

WE give the perspective view and plans of the design by Messrs. Garratt & Simister, for additions to the Town Hall, Stoke-upon-Trent, which has been placed first by the Assessor. The following extracts from the architects' description of their design will serve to explain it:—

"Owing to the uncertain nature of the ground, in preference to excavation for probably an unlimited depth the authors would propose laying over the site a ferro-concrete raft, after same had been rolled with heavy steam rollers, from which the building would be begun. The authors suggest in any case that the Committee should adopt this suggestion with a site such as this; the cost would be much cheaper than carrying the walling down or piling, and would be quite safe and substantial.

The Town Hall has been arranged on the northern portion of the site with entrances from Tower-street, and also from the main entrance of the existing building, and has been so planned that if desirable it could be shut off from any special local functions. The small Assembly Hall has been planned with its entrance from Acqueduct-street. The authors feel that this will undoubtedly be the room in which the Council will carry on the work of the Borough, and it has been arranged with this in view.

The Court has been arranged in Tower-street with separate entrances for prisoners, public, and the magistrates, etc., and the large committee-room has been planned in close communication with the main Court and judges' rooms, so that it could be used for the second Court on any occasion. Rooms have been provided in the Court block for judge, solicitors, jury, and witnesses.

All the accommodation asked for has been practically planned, and the ground floor with the exception of the banqueting-room, and the idea of planning any room in the basement suggests itself to be unpracticable and inconvenient in this case. The four spare rooms asked for have been so arranged that they can be readily used by the Court or the small Assembly Hall when required. The caretaker's rooms have been arranged in a central position over the main staircase and kitchen, and having communication on each floor. No alteration is suggested to the existing building other than minor alterations where the new building is connected.

It is proposed to face the building with white Hollington selected stone, backed with good, hard, well-burnt bricks. Roofs would be covered with Welsh green slates. The whole of the floors, staircases, and roofs would be of fireproof construction, and all flat roofs would be finished with mineral asphalt. The joinery in the Court and small Assembly Hall, and wherever else possible, etc., would be of wainscot and other hard woods, and the ceiling in modelled fibrous plaster. Marble would be used in the finishing of the entrance hall and main staircase.

The whole of the offices, etc., would be heated by means of ventilating radiators fixed under the windows; the corridor and entrances by direct heating radiators. The Assembly Hall, Court, and large committee-room, and small Assembly Hall will be warmed and ventilated on the Plenum system, the apparatus being fixed in the roof in a convenient position.

The Assembly Halls and Courts would be arranged on a separate circuit to enable them to shut off independently when not required. The heating surface will be arranged on the vacuum system, which will allow the temperature to be kept low and all connexions small, thus preventing any danger of frost.

The hot-water service would be worked from a central point in conjunction with the heating system in the winter-time, and a

Digitized by Google

small independent boiler would be provided for use in the summer months."

We give also the perspective view and plans of the design by Mr. Haywood, of Birmingham, placed third by the assessor.

We have not received any description of the design from the architect, and must therefore leave the perspective view and plans to speak for themselves. The design makes a good piece of architectural composition in a severe classic style.

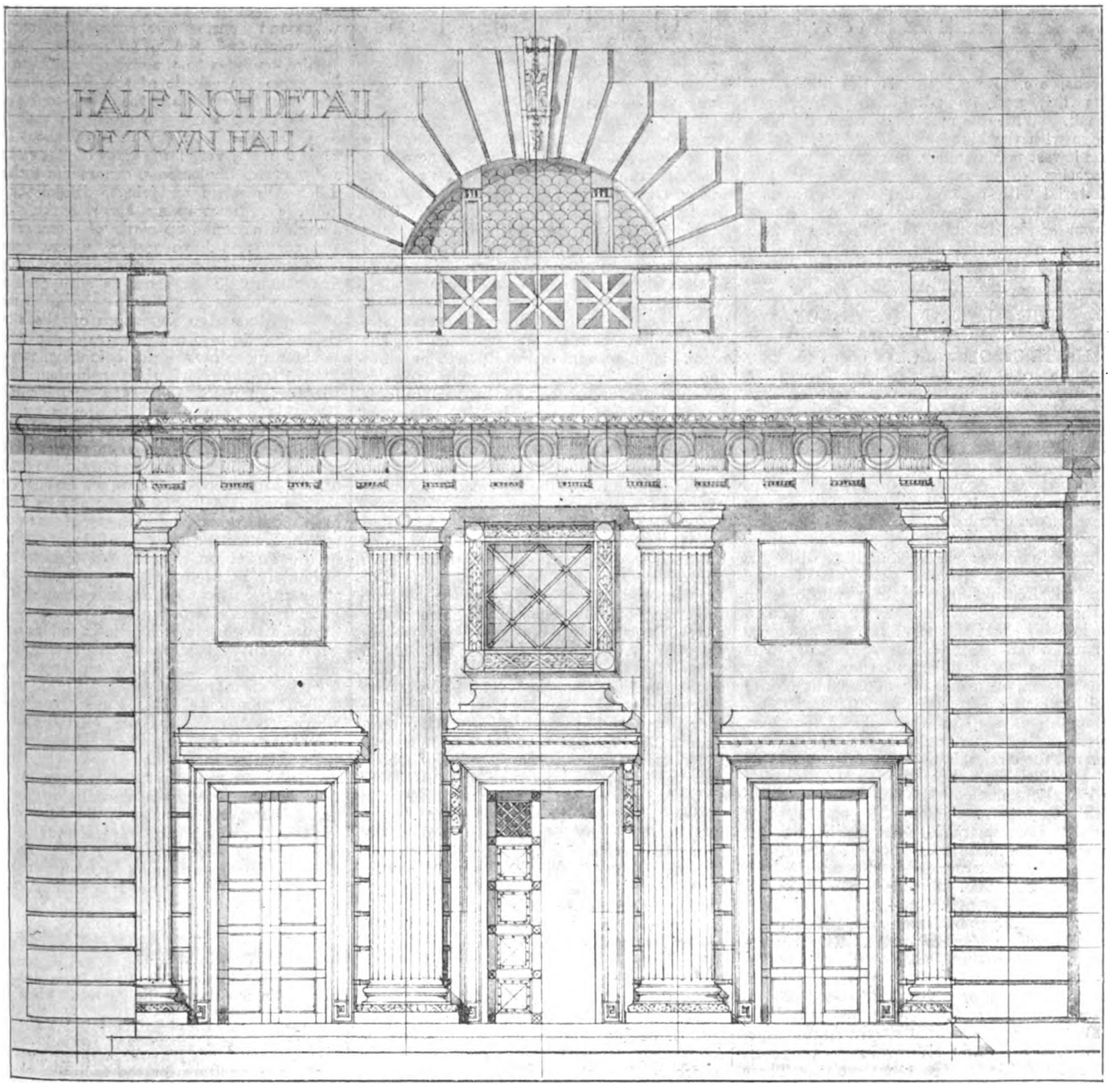
THE CONDUCTIVITY, POROSITY, AND PERMEABILITY OF REFRACTORY AND BUILDING BRICKS, ETC.

THE behaviour of fire-bricks towards heat is determined mainly by chemical composition, but also by the state of aggregation of the mass, regarded physically. Similarly, resistance of stoneware, terra-cotta, or ordinary bricks, to climatic influences is influenced by the state of vitrification, which may be regarded as the reciprocal of permeability. The researches of S. Wologdine into the above-named properties have been extensive, and he has determined their magnitude in a large number of specimens, and in some cases after different degrees of burning in the kiln of the maker. Simonis has shown that the heat conductivity of refractory materials depends on the quantity of contained air—that is, on the porosity—but the value of Wologdine's measurements consists in the importance which they show must be attached to the permeability to gases. The latter fact is obviously of great significance, because it is no advantage to a body as a non-conductor to have high porosity if gases can freely circulate therein. On the other hand, if a material is desired to have high conductivity, then high permeability—which, after all, is incompatible with very low porosity—is an advantageous factor.

Wologdine's conclusions are, then, to the effect that the heat conductivity of material depends not only on the porosity, but also on the degree of isolation of this contained air or its mobility; in other words, on the permeability of the substance to such gases as will come in contact with it. In general the higher the temperature of burning the smaller is the porosity and the higher the conductivity; but in some cases, as with silica bricks, the percentage porosity remains nearly constant whatever the temperature of the kiln in which burnt, although the permeability shows a noteworthy difference. In the experiments recorded in the subjoined table it is seen that whilst with rise of temperature from 1050 degrees to 1300 degrees silica changed in permeability per square metre in litres per hour through a thickness of 1 metre from 3·32 to 192·0, magnesia changed from 186·1 to 3·49.

The co-efficient of conductivity stated in small calories is the quantity of heat transmitted through a thickness of 1 centimetre across an area of 1 sq. centimetre in one second for a difference in temperature of 1° Centigrade.

The porosity was calculated as usual, from the real and apparent specific gravities, and expressed as a percentage of total volume. The permeability was determined by measuring the quantity of air forced under constant pressure, namely, that equal to a small height of water through a short cylinder of the material tightly enclosed in a glass tube, passage of air between cylinder and tube being prevented by a film of paraffin wax. It was found that the permeability varied in different directions along the same



Design for Additions to Town Hall, Stoke-upon-Trent. By Messrs. Garratt & Simister. Detail Elevation.

NOTE.—The words "half-inch detail" on the illustration refer, of course, to the scale of the original drawing, not to this reduced reproduction.

Digitized by Google

piece of material. The results are stated as cubic centimetres passing through a thickness of 1 centimetre across an area of 1 sq. centimetre in one second, under a pressure equal to water column of 1 centimetre.

This abridged table shows the lowest conductivity in kieselguhr, used in this country sometimes for filtration purposes, and at others with a binding medium under the name of "fossil meal" as a non-conductor for covering steam pipes, boilers,

Material Tested.	Conductivity in Small Calories.	Specific Gravity of Specimen.		Porosity. Per cent.	Permeability in Cubic Centimetres.	Temperature of Burning. Degrees Centig. ade.
		Real.	Apparent.			
Fireclay { From	0·0030	2·61	1·81	30·8	0·015	1050
Fireclay { To	0·0050	2·50	1·90	24·1	0·105	1300
Brickclay	0·0039	2·65	1·91	27·8	0·0465	—
Bauxite I.	0·0031	3·22	1·89	41·5	0·0292	1050
do. II.	0·0033	3·12	1·92	38·4	0·212	1300
Silica I.	0·0020	2·75	1·58	42·6	0·0692	1050
do. II.	0·0·31	2·62	1·50	42·9	0·5360	1300
Magnesia I.	0·0058	3·07	2·00	35·1	0·517	1050
do. II.	0·0065	3·39	2·03	41·0	0·0097	1300
Stoneware I.	0·0032	2·56	1·96	23·4	0·0022	1050
do. II.	0·0048	2·42	2·18	9·59	—	1300
Porcelain, "New"	0·0046	—	—	—	nil	1400
Building Brick	0·0037	2·56	1·90	25·7	0·0015	1050
Terra cotta Brick	0·0035	—	—	—		1050
Another Mixture	0·0028	2·54	1·95	23·0	0·0021	1050
Light Clay	0·0024	2·60	1·41	45·2	0·0164	—
Kieselguhr (or infusorial earth)	0·0018	2·48	1·03	58·0	0·0957	
Plumbago	0·0185	2·27	1·7	28·4	0·0012	1300

ovens, etc. Its porosity is the highest in the list, and its permeability relatively small. With this may be contrasted plumbago with the highest conductivity, having the lowest permeability, but only a medium porosity. Stoneware is an example of a material with a lower porosity and almost equally low permeability and consequent lower conductivity. The low permeability of such a material may be regarded as an index to its perfection in vitrification.

THE LATEST ISSUE OF "ARCHÆOLOGIA."

MR. H. ST. GEORGE GRAY opens the new volume of the "Archæologia" with a minute account of the stone circles of East Cornwall. The purpose of these great circles of unhewn stones in different parts of the United Kingdom remains as much a mystery as ever, notwithstanding the scrutiny of the numerous surveys made of them, one of which, at Stonehenge, it will be remembered, was made from a balloon. The number of them, too, is a marvel. On Bodmin moors alone there are five of them; and it is with this group that Mr. Gray deals. Two of them are within three-quarters of a mile of each other; a third is scarcely more than a mile away; and the other two are not more than about three miles distant. The monoliths are all of granite; and associated with them all are many of the hut circles with which we are familiar. This vicinity, though pointing to the probability that they were parts of the homes of the people who reared the circles, is not absolute proof of it.

Mr. Gray begins his task with an account of excavations made at the circle known as the Stripple Stones, which, with the exception of that at Fernacre, is the largest in Cornwall and Devon, and is distinguished from the rest by being surrounded by the remains of a vallum and fosse. Seven men were set to work, one of them having had the experience of conducting the Glastonbury Lake village researches in former years. They made twenty-five cuttings, some of which were ten feet wide. Several facts relating to the fosse and vallum were ascertained, but no traces of burials found, and but few finds. Mr. Gray concludes that the fosse must have been meant for drainage purposes, the soil being a very wet one. There were originally twenty-eight stones in this ring, of which but four are left standing, the rest that remain being prostrate. They were placed at a distance of 16½ ft. apart, round a somewhat flattened circle measuring about 280 ft. by 255 ft. The nearest ring, at Trippet, has eight stones standing and four prostrate out of a former twenty-six; that a mile and a half away, at Lease, has ten standing and six prostrate out of its orignal twenty-two, and they are 12 ft. apart; the Fernacre example, three miles to the south of the Stripped stones, has seventy-one stones, of which thirty-nine are standing; and there are forty-one standing at Stannon, with others prostrate or deep in the peat, that bring the number up to seventy-nine. In only one instance, that of the Trippet stones, from the Stripple ring, can either of the circles be seen from the others. There is a fascination in this subject that loses nothing in Mr. Gray's hands, and gains a great deal from his careful and picturesque illustrations.

Mr. W. H. St. John Hope makes four contributions to this volume. The first is an examination of an inventory of the goods of the Collegiate Church of the Holy Trinity, Arundel, taken in the days of Henry VIII. These consist chiefly of books, church plate, relics, altar cloths, and vestments. The second is an account of the Round Church of the Knights Templars at Temple Bruer, in Lincolnshire, one of the five that remain to us out of the large number that the numerous preceptories doubtless possessed in the days of their prosperity. Here again excavations have been made to tell us tales of the past. With his mind full of the statements of former explorers concerning underground cells with skeletons in them, as of captives who had been left to die in them, Mr. St. John Hope obtained the co-operation of Captain Reeve and others, including the owner, the Earl of Londesborough, and set to work to lay bare the scene of such enormities. The round nave is now but an open yard with workshops in it, though the tower is standing in three stages. The excavations were commenced on the site of the rotunda, and after a diligent search it was ascertained that the cells where victims were said to have been immured did not exist, and that an oven was the cause of a statement that fire had been resorted to for the purpose of destroying traces of atrocities. The excavations also disclosed that the diameter of the nave was 26 ft., and that it had eight cylindrical columns in a circular arcade, and an encompassing aisle 9½ ft. wide that was lighted by six windows. There was a western doorway, as in the Temple Church, to which a porch had been added later; and an arch opened eastwards into the presbytery which had an apsidal termination. Doorways to the right and left gave access to the crypt; and subsequent alterations were also traced. The tower was neither a belfry nor a watch-tower, and is considered likely to have served for a chapter house, with a muniment room above, and a treasure house in its third story.

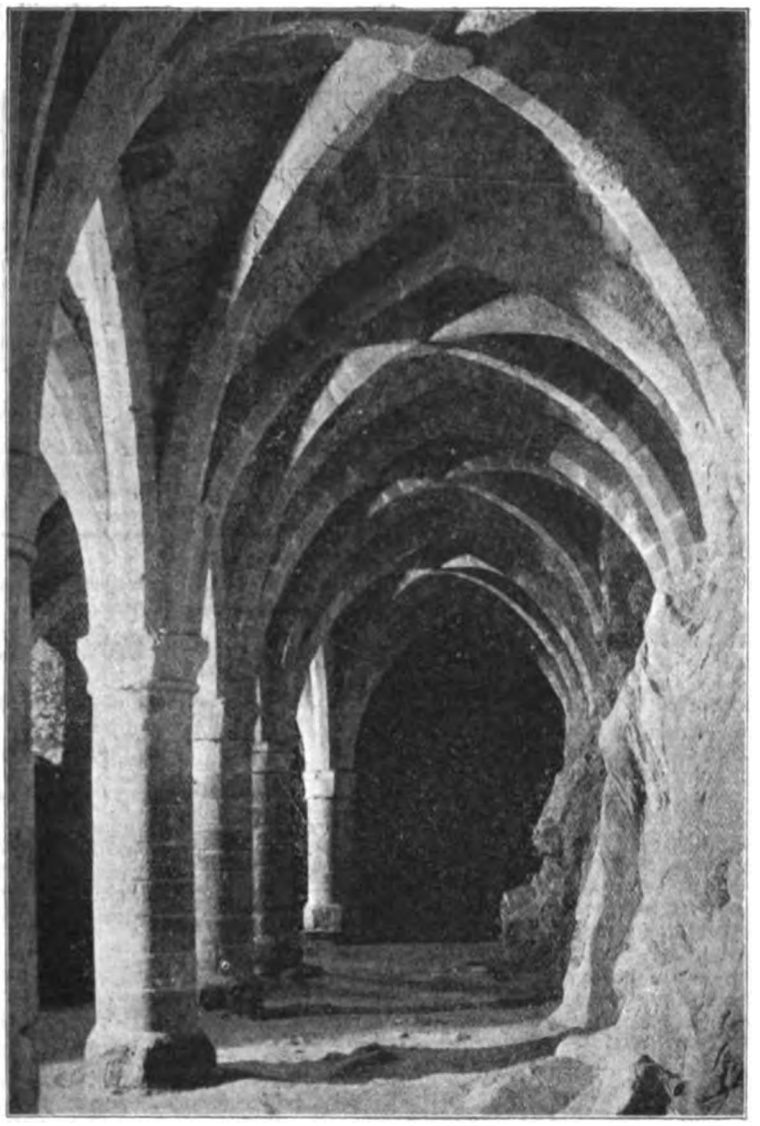
The next contribution made to the general stock of information by this diligent antiquary relates to the most recent investigations on the site of the Roman city at Silchester, Hants, that have now been carried on for upwards of eighteen years. His fourth concerns the Castle of Ludlow. All are lavishly illustrated with the exception of the inventory. The Chapel of St. Mary Magdalen, in the inner bailey of Ludlow Castle, has a circular nave with a wall arcade of seven arches on either side of the western doorway, the arches being alternately moulded and enriched with chevrons; and a chancel so far conforms to the round church examples as to have a semi-octagonal apse. Excavations gave the information that this last was formerly 12 ft. square; the apse 11 ft. wide; and the total length of the chapel 54½ ft. The fact that there is no mention of this fine border fortress in Domesday Book is met by the belief that the site of it is in the manor of Stanton, which is duly mentioned in that record, and that when built, immediately after the Norman survey was made, the town gradually grew up round it.

Dr. Oscar Montelius takes up the tale of old times with a study of the chronology of the Bronze Age in Great Britain and Ireland. His wide Continental experience brought to bear upon the subject has inclined him to divide it into five periods—the Copper Age, when the alloy with tin was unknown or very rare, dating from the middle of the third or beginning of the second millennium, B.C.; a second period between the second millennium and the XVIIth century, B.C.; a third onwards to the end of the XVth; a fourth to the middle of the XIIth; and a fifth from the middle of the XIIth to the end of the IXth, B.C. He considers that the Iron Age began in this country about 800 years B.C. A very large array of illustrations of weapons, implements, ornaments such as collars, bracelets and rings, drinking-cups, tools, etc., accompany his remarks. The plough has turned up many of these, gravel and sand pits have yielded others, cairns have concealed some, graves have kept hidden many more. They show as with enchantment an old world, before which the men of the Stone Age and those of the stone circles recede into a still more distant past.

Three more inventories belonging, respectively, to the Earl of Huntingdon, 1377, Brother John Randolf, 1419, and Sir John Boys, 1426, are placed before us by Mr. W. Paley Baildon. The first was made out in consequence of a robber having carried off the Earl of Huntingdon's valuables in the course of a journey between London and Dover; the second is a list of costly articles found in the possession of the confessor of the second wife of Henry the Fourth, who was confined in the Tower on a charge of treason, and ultimately murdered there; and the third gives particulars of the loss sustained in a burglary at Harrow, when the house of Sir John Boys was broken into, and his large store of silver basins, ewers, cups, goblets, jewellery, robes embroidered with pearls and furred with marten, sheets, and other linen, stolen. Mention should be made, too, of an alluring description of the Villa d'Este at Tivoli, and the collection of classical sculptures in it, by Dr. Thomas Ashby, acquainting us with the riches gathered there in the XVIth century and dispersed subsequently, and showing us, incidentally, the villa to-day, untenanted, with its beautiful gardens looking consequently somewhat melancholy, notwithstanding that the famous fountains are still running and the scene is pervaded with countless associations.

PROPOSED TOWN HALL, JOHANNESBURG.—It is stated in the Australian Press that the revival in the Rand building trade which has been so marked of late is likely to be greatly assisted by municipal enterprise. At a recent meeting of the Johannesburg Town Council it was decided to put 125,000*l.* on the estimates of capital expenditure for the construction of a Town Hall. The building is to include galleries and seating accommodation for 2,000 persons, organ loft, orchestra, and platform, supper-room, Council-chamber, and committee-rooms.

Digitized by Google



Crypt, Chillon Castle. From a photograph by Mr. H. Stuart Thompson.

CRYPT, CHILLON CASTLE.

We do not believe an illustration has been published before of this bit of vaulting in the crypt of the Castle of Chillon, a building more celebrated in poetry than in architecture.

It is from a photograph sent to us by Mr. H. Stuart Thompson.

CONCRETE: ITS AGGREGATES AND MIXING.*

In this paper the author claims that concrete, the physical properties and form of its aggregates, the methods of proportioning and mixing, may be advantageously considered, from the point of view of their practical application, as apart from that of the purely scientific standpoint of the laboratory.

It is not intended to in any way ignore the importance of the work done in the laboratory. The author ventures, however, to submit that such work can only be taken as an approximate guide for the actual completed work. The conditions which obtain in the laboratory in respect to variation of temperature, incidents of position and materials, can never be so varied as those which occur in actual practice.

It may be advanced against this statement that the variation shown in strength of a number of test pieces made in the laboratory approximates to variations which may occur in actual practice, but the author suggests that the very extraordinary figures which are often added together to obtain an average, are evidence only of some mechanical or other inconsistency in the preparation of the test pieces. For these reasons it is proposed to deal with conditions inseparable from the actual work rather than the more academic side as demonstrated by the expert and chemist in the laboratory.

It is also the author's wish to limit this paper to a consideration of the coarser component parts of concrete, and its mixing, without entering upon the wide field of how the binding materials are made, their quality and possible admixtures, or as to whether the modern idea of reinforcement is advantageous or otherwise, except in so far as to claim in regard to reinforced as well as plain concrete that there can be no doubt that the advantage in either case will be to the best proportion and most perfectly distributed mixture in whatever strength may be dictated by necessity or economy.

It is therefore assumed that the binding materials used are the best of their respective kinds, and that, in the case of Portland cement, the initial set is such in regard to manner and time as the exigencies of the work require, and that they will proceed to the condition of permanency in hardening, providing that there are no elements in the aggregates to injuriously affect the attainment of such ultimate condition.

As its name implies, concrete, when in a finished condition, should be a perfectly homogeneous and fixed mass, and whatever the proportions, its constituent aggregates should be equally distributed throughout the whole. It is, however, obvious that this condition cannot be obtained if the constituents do not each in their own way lend themselves to secure this result. This may be considered a very elementary condition, and the necessity for its repetition doubtful, but it is one of those elementary principles which, though always endorsed by intention, frequently fail in actual practice.

Although the binding materials are essentially the principal ingredients, they are, nevertheless, largely dependent for their value upon an intimate association with other materials, as also upon the composition and form of these, and the chemical action of the binding materials may be assisted or retarded by these other ingredients, which invariably form the greatest proportion of the finished mass. In this connexion it is by no means unusual to find engineers, who, without further investigation, attribute any failure or degeneracy in concrete to the cement, when probably the cause is entirely due to injurious elements which are contained in the aggregates.

Sand.

In a paper read recently before the members of an institute which has been lately formed ostensibly for the purpose of enlarging and connecting the knowledge associated with this important department of engineering, it was pointed out that there was no objection to foreign matter in the form of finely divided clay occurring in the sand intended for use in making concrete, but the author of the paper made reservations as to this, by advising that tests be carried out before risking its use.

The author submits that though supported by exhaustive laboratory tests it would be unsafe to give any contractors latitude in so important a matter.

Clay has frequently been used, to secure the requisite density in the finished concrete, when, owing to local circumstances, suitable sand could not be easily (or more probably cheaply) obtained, but the author ventures to state that there are other safer and much more certain methods of securing this condition, and with which greater ultimate permanency could be assured without the risk that must always be associated with the use of clay.

As the permanency of binding materials —especially Portland cement—is affected by the composition of the sand, this material merits very careful selection, and it will frequently be found that a little extra cost incurred in providing suitable sand will not only advantageously affect the stability of the work, but be repaid by a saving in quantity of cement.

In this connexion it was interesting to note the result of some experiments carried out by Mr. Spackman (the joint author of "Calcareous Cements" (Redgrave and Spackman), and the author, which showed that a very good sample of cement when mixed with three parts of sand showed a slight degeneration after six months, whereas the same cement with five parts of sand gave an increasing strength up to the end of the year's tests, and beyond them.

The description of sand as clean and sharp, commonly adopted in specifications in this country, although apparently sufficiently absolute is frequently taken in a relative degree, therefore the more elaborate description secured in the specifications of German and Belgian Government engineers might secure the material better than our rather widely accepted description.

The following quotation embodies the salient points of several specifications of very large works designed by Continental engineers:—

"The sand shall be of quartz or other suitable formation, but shall not be of foliated structure, nor contain more than 2 per cent. of foreign matter," and after limiting the fineness or coarseness of the grains to suit conditions of location and nature of intended works, the specification proceeds to enact—that it shall be graded so that it shall not contain a greater proportion of voids than 40 per cent.

If the foreign matter is in excess of the

* A paper by Mr. W. Challoner read at a metropolitan district meeting of the Incorporated Association of Municipal and County Engineers, held at Westminster, March 26, 1909.

Digitized by Google

limit provided, the contractor understands that the sand will have to be washed, and if the limits of coarseness or fineness are exceeded it will require to be sifted, and further, that if the forms and sizes of the particles cause a greater proportion of voids than is allowed by the specification, he will have to obtain other suitable grades to mix with the bulk in order to reduce the voids to their proper proportion.

From compliance with the first two conditions no amount of argument will secure to the contractor any concession, but in the last he may in some cases have the option of using a sand containing a slightly greater percentage of voids—providing he uses a relatively greater proportion of cement or other specified binding medium to fill them; with the result that he usually elects to grade the sand.

Similarly, if the contractor provides a suitable sand containing a less percentage of voids than 40 per cent. he may in some cases be permitted to reduce the proportions of the binding materials.

Broken Stone or Gravel.

In like manner the specification of stone for making concrete, after limiting the size of the smallest and largest particles, which may vary in respect to the particular necessities of the work, describes that it shall be hard and not capable of absorbing more than 6 per cent. of moisture, nor shall it disintegrate at a temperature between 1° and 200° Centigrade. It shall be thoroughly washed free from dust, earth or other foreign matter, and the period of this operation is limited to some suitable specified period before it is mixed in the concrete.

To these restrictions are usually added others to secure the exclusion of stone or ballast which contains traces of sulphur or oxides of iron, or to prohibit the use of burnt chemical refuse, slag, or carbon materials which may contain these elements.

(In the case of dredged ballast, some of the prohibitions are unnecessary, and for purposes where great strength is not required others of the restrictions may be slightly modified.)

As in the case of the specification for sand, the particles of stone must be graded to contain a percentage of voids not exceeding 40 per cent., but if the voids are reduced below that percentage the contractor in some cases may effect a saving in the amount of mortar (binding materials and sand) to be added to the coarser and usually cheaper aggregates—the reasons for this will be shown later when treating upon the proportions of ingredients in the bulk of finished concrete.

Water.

Although not of the same frequent necessity as stipulations regarding the other component parts of concrete, it is advisable to provide in the specification that the water shall not contain impurities that will injuriously affect the hardening or ultimate permanency of the concrete.

Of these impurities, peat, vegetable matter, and salt are perhaps the most common objections, although where hydraulic silicates are used (as is the common practice on the Continent) sea water gives the very highest results in regard to strength and permanency.

Most exhaustive tests made by Messrs. Sanger & Blount some years ago in this country also how that when trass, a puzzolana of standard quality, is used with cement and sand gauged and immersed in sea water, the strength is increased considerably in comparison with the same mixture, of cement and sand alone, when gauged and immersed in fresh water.

Although perhaps a little outside the object of this paper, there is room for consideration of the undoubted advantages of permanency and density which may be secured by the use of hydraulic silicates as an admixture in the composition of mortars and concrete, but until engineers are prepared to pay greater attention to the selection of aggregates and proportioning of the volumes, the full advantages obtainable by the use of puzzolana, trass, and other similar materials cannot be secured.

Also the undoubted advantages of lime (with these materials as a mixture to impart to it cementitious attributes) for many engineering works where impermeability and lower cost is more necessary than great strength developed in a short period of time.

Measuring and Proportioning of Volumes for Concrete.

There would appear to exist amongst engineers and contractors a somewhat lax conception of what constitutes the correct volumic proportions of concrete, and that evidently arises from the questionable practices which are common in this country of measuring the aggregates (sand and stone) in combination, and computing the volumes from the dry unmade materials instead of the finished concrete.

It is unnecessary to state that the data of strengths which are given by engineering text-books are obtained from the volumes of aggregates measured separately, or, as in the case of laboratory tests, by weight.

The common practice of describing concrete as 6 to 1 or 8 to 1 has probably crept in through the use of dredged ballast where the stone and sand is in combination, and is, in the author's opinion, worthy of more attention from engineers than is often devoted to it, in order that a strict definition of what is really meant may be arrived at.

Judging from his own experience, the author is of opinion that such a description assumes more than it actually describes, and lends itself to an interpretation (to some extent established by long practice) that conduces more to economy in the interest of the contractor than to the efficiency of the work the specification is designed to safeguard.

These results are the outcome of the common practice of measuring the volumes of sand and stone in combination, and the very casual regard paid to the degree of solidity or proportion of voids to be filled with the binding materials in the sand, and the voids in the larger aggregates to be again filled with the finer component materials which may be described as mortar, both of which points will have an intimate effect in the strength, permanency, and impermeability of the finished mass of concrete.

In order to explain this more clearly, the author has appended details of a specification in common use on the Continent, which shows the result of each method of measuring and proportioning the volumes referred to

1 volume of cement
3 „ sand
5 „ stone

Mixture.	Ascertained weights per cubic metre.	Equivalent volumes of 1 cubic metre in finished concrete.	Total volume of ingredients in mixture.
cbm.		cbm.	cbm.
1·0 cement	1500	0·479	0·479
3·0 sand	1500	0·600	1·800
5·0 stone (gravel, broken stone)...	1500	0·600	3·000
0·64 water	1000	1·000	0·640

9·64 cubic metres. Density = 0·9.
Total, 5·919 cubic metres finished concrete.

5·919 represents the total solid volume of the ingredients.

These proportions, although quite a common specification, are of rather doubtful merit, as they will not give a dense resultant concrete even at the low percentage of 40 per cent. of voids in the separated aggregates, which are assumed for the purposes of calculation.

If the stone and sand are measured in combination, the proportions of sand being $\frac{3}{8}$ and the stone $\frac{5}{8}$ of the whole with 1 volume of cement and the proportionate volume of water, the result is—

Mixture.	Ascertained weights per cubic metre.	Equivalent volumes of 1 cubic metre in finished concrete.	Total volume of ingredients in mixture.
cbm.		cbm.	cbm.
1 cement.....	1500	0·479	0·479
8 { sand 4·65	1500	0·600	2·190
8 { stone 7·33 (gravel, broken stone) .	1500	0·600	4·410
9 water	1000	1·000	0·900

Density = 0·74.
Total, 7·979 cubic metres finished concrete.

7·979 represents the total solid volume of the ingredients, but again, like the former illustration, the concrete is not dense, and the actual volume in the latter the density will be less owing to the proportionately greater volume.

The density of 1 vol. cement, 3 vols. sand, 5 vols. stone, and 6 water is

$$\frac{\text{binding materials } 1{\cdot}119}{\text{voids } 1{\cdot}200} = \begin{cases} 0{\cdot}9 ; 0{\cdot}1 \text{ represents} \\ \text{volume of unfilled voids.} \end{cases}$$

The density of 1 vol. of cement, 4·65 vols. sand, 7·33 of stone, and 9 water is

$$\frac{\text{binding materials } 1{\cdot}379}{\text{voids } 1{\cdot}860} = \begin{cases} 0{\cdot}74 ; \ 0{\cdot}26 \text{ represents volume of} \\ \text{unfilled voids.} \end{cases}$$

It must be borne in mind that there is the same quantity of cement to 7·979 as to 5·919, an item of special interest to the contractor when the work is measured up.

By the rule that the density is the quotient of

$$\frac{\text{binding materials}}{\text{voids}}$$

it is easy to ascertain the density of any mixture.

The information of total volumes may be worked out for mixtures in any proportion by a similar method.

The figures representing weights and volumic equivalents are the means of hundreds of tests made by the Berlin Testing House, and any slight variation would not materially affect the comparative result of the illustration given.

It will be noticed that in fixing the volumic value of cement, a cubic metre of cement of a fineness which approximates with our British Standard Specification, which, when run into the measure to weigh 1,500 kilos, will give a resultant volume of 0·479 in the finished concrete, therefore the voids are approximately 52 per cent.

In like manner the aggregates are taken as graded to contain 40 per cent. of voids separately, and of a specific gravity that will give 1 cubic metre to weigh 1,500 kilos, and the resultant volume is 0·600.

In a specification recently compiled by one of the principal engineering firms who design reinforced concrete structures, there are indications which tend to show an apreciation of the necessity to deal with some of the defects common to concrete specifications.

In this specification the volume of cement is specified by weight, and the aggregates by measure, but the author claims that a specification based upon the data given in the illustration, which the author has tried to explain, will give more certain results and leave less to the ingenuity of the clerk of works or the contractor.

From this basis of calculation the cost per volume of finished concrete may also be correctly ascertained with a degree of exactness not attainable with the methods at present in common use.

Ascertaining Proportion of Voids in Aggregates.

These may be calculated by taking the main specific gravity, and comparing this with the ascertained weight per volume.

Digitized by Google

The difference will represent proportion of voids.

A readier method that may be adopted on the works, which will give approximately the same results, is the measurement of volumes of aggregates dry, and the addition of a measured quantity of water sufficient in the case of stone to submerge it, and in the case of sand to reach the mark of the sand when run in before the water is added.

It will be seen from these methods of calculation that the required proportion of binding media is obtained from the finished volume of concrete, instead of, as is the common practice, estimating it from the unfinished materials in a dry state. It is needless to point out that the latter method cannot be depended upon with nearly so great a degree of certainty as to results.

It is a debatable point if any ultimate degree of strength is gained by the addition of an excess of binding materials beyond the amount necessary to completely fill the voids in the aggregates, adding a small margin to allow for imperfect mixing, which will vary as to the conditions under which the actual work is done.

A number of tests, extending over many years, made by the Municipal Engineer of Coln, go to prove that there is the strongest evidence in support of the uselessness of adding binding materials in excess of the voids.

This being admitted, and having regard to other common-sense reasons already advanced, it points to the conclusion that it would be advantageous to pay a little additional attention to the selection and grading of aggregates, and the cost of so going would be defrayed by the saving effected in the more expensive binding materials. A greater degree of efficiency would also be assured from the basis of calculations of density the author has described.

Given the strength and form of the unit to be favourable, the tensile strength of the mass will follow the ratio of density, and the compression strength will be usually about fifteen times the tensile strength at any given period.

In regard to the subject of density, it is always necessary that the mortar, *i.e.*, binding materials and sand, should be dense for whatever purpose it is required, but it is not always so necessary that the mortar should completely fill up the voids in the stone aggregates of concrete. This is especially the case when impermeability is not necessary.

Greater strength is secured by a strong mortar that does not completely fill the voids than with a weaker mortar that secures that result.

It is found that a mixture of 1 volume of cement, 3 volumes of sand, and 6·5 volumes of stone gives the same strength as 1 volume of cement, 3 volumes of sand, and 5 volumes of stone. Also 1 volume of cement, 4 volumes of sand, 8 volumes of stone gives the same strength as 1 volume of cement, 4 volumes of sand, and 6 volumes of stone.

Volume of Water.

The proportion of water which will enter into chemical combination with concrete varies slightly in different mixtures and with different makes of cement, but it may be taken for practical purposes at 15 per cent. of the volumes of binding materials and sand.

This quantity is not, however, sufficient to allow for evaporation, absorption, and consolidation, but the excess required will be governed by temperature and other conditions of environment.

There can, however, be no room for a divergence of opinion in regard to sloppy or dry concrete, as an excess in either direction will defeat the necessary object of securing that there is a perfect distribution of all the component ingredients of the concrete throughout the mass when placed in its ultimate position.

Mixing of Concrete.

The practice which commonly obtains of mixing all the concrete materials dry, either by hand or machine, has nothing to recommend it beyond that it is a little less troublesome, whilst it is opposed to reason that the most perfect distribution of all the particles can be secured by that process.

It would appear more reasonable to secure a perfect mixture of the smaller particles as a first part of the process, and this may be obtained by mixing the binding materials, sand and water, in a mortar pan and rollers, or a machine that will secure like results.

The superiority of machine-made mortar over the hand-made variety requires no illustration beyond the common-sense knowledge—that a perfect and equal distribution of all the constituent particles must of necessity give better results than a less perfect intermingling.

The mortar thus obtained should then be mixed with the stone aggregate, the latter being wetted to cause the mortar to adhere by the prevention of undue absorption of water from the mortar on the otherwise dry surface of the stone.

The mixing of the mortar with the stone can be most efficiently accomplished in a rotary mixer, this process being limited to the distribution of the mortar equally throughout the stone aggregates.

If the process stops short or goes beyond this point it may result in the undoing of some of the work already achieved, and for similar reasons care is necessary in the transit of the wet concrete to its ultimate position.

If it is inconvenient to use a rotary mixer, and this part of the process is performed by hand, the same care should be exercised, and for this reason a long banker, on which the materials can be laid out two or three shovels wide, and turned over from both sides, will give much better results and effect a saving in labour which cannot be obtained by the usual practice of dumping the materials in a large circular heap and turning it over to another position—whilst the water thrown on with a bucket washes some of the cement to the bottom or through the open joints of the banker planks on to the ground beneath.

The mixing of concrete provides an example of the axiom that an ounce of practical experience is worth a ton of theory, and much of the former is lost by treating this very important matter as the work of an unskilled labourer with a "perforated" specification to guide him.

In conclusion, the author submits that all the elaborate and often necessary precautions exercised in the selection of Portland cement, and the most accurate and involved calculations of the engineering office and laboratory, may be rendered ineffective if the results of these are ultimately handed over to the contractor, his navvy ganger, or the navvy himself, to select the aggregate under the most casual process of supervision and mix the concrete in the manner most suited to his convenience.

It is quite a common experience to find that when the work after completion is found unsatisfactory, the blame is attached to the cement, when the fault really is with the aggregates used and the imperfect methods employed in mixing them.

Legal Column.

The Development and Roads Improvement Funds Bill.

The Development and Roads Improvements Fund Bill seems to be a somewhat extraordinary measure. Sums annually voted by Parliament, and five instalments amounting to 2,500,000*l.* charged on the Consolidated Fund, appear to be given to the Treasury in the form of a blank cheque for the purpose of aiding and developing forestry agriculture and rural industries, the reclamation and drainage of land, the improvement of rural transport—other than roads, but including light railways—the improvement of harbours and canals, and for any other purpose "calculated to promote the economic development of the United Kingdom." The Bill also creates a Road Board, which has powers to construct new roads which are to be confined to motor traffic, except in so far as other kinds of traffic are licensed to use them on making a payment for such licence.

Primâ facie, this limitation of the use of such roads is to be justified by the fact that the duties on motor spirit and the licences on motor-cars are to be devoted to their construction and maintenance; but the matter does not stop there, as, according to the explanatory Memorandum, compulsory powers identical with those under the Small Holdings Act are to be conferred not only for the acquisition of the land required for the roads, but in rural districts to the extent of 220 yds. on each side of the road. This expropriation of private rights is commended to the landowner by the Memorandum in the following terms:—

"This power will enable the Road Board to a great extent to reap the increment in value of lands adjoining the new motor roads due to the construction of these roads, and it is hoped that this source of revenue, as well as the charges for allowing private roads leading to houses in the neighbourhood to communicate with the new motor roads, may go some way towards recompensing the Road Board for the expenditure on the construction and maintenance of the new motor roads."

We can hardly imagine that there will be much competition to live by the side of the motor roads, but the Road Board have powers to sell, lease, or manage those lands and no doubt will sanction the erection of less desirable buildings on the land they have acquired compulsorily, and another element of subsidised competition is hereby introduced. The railway companies when they acquire land are confined to taking land necessary for their statutory undertaking, but these Road Boards are to be empowered not only to acquire land for the roads, but the whole of the frontage upon them. The Memorandum concludes with the observation that in making grants under either part of this Bill regard shall be had to the general state and prospects of employment; or, in other words, indicates that the works may be carried out with "unemployed" labour as relief works. The interests of builders and contractors are ignored, and the landowner is to be despoiled, whilst the country is to be defaced. The Finance Bill would appear sufficiently to have effected these interests without the introduction of this further measure.

The Patents and Designs Act.

According to a statement which recently appeared in the *Times* as to the operation of sect. 27 of the Patents and Designs Act, 1907, which has now been in force twelve months, sixty-nine applications for revocation were made to the Comptroller-General, out of which orders for revocation were made in ten cases. On appeal the High Court reversed two decisions, leaving only eight cases of revocation. In one case the Comptroller made an order for conditional revocation, twenty-eight applications were withdrawn and twenty-six are still pending.

As the *Times* remarks, it is too soon yet to determine whether or not the Act will deter foreigners from applying for patents in this country. The above figures also, of course, give no intimation of the real operation of the Act, as to whether it exerts any practical influence in encouraging industry in this country. In many of the cases, and notably in that we commented upon last week, the evidence has shown that the demand in this country for the patented article or product is very small, but probably in cases where any substantial demand exists the patentees have taken steps on their own initiative to manufacture here, and therefore only the least important cases from this point of view have come before the Comptroller.

Digitized by Google

LONDON AND DISTRICT BOROUGH COUNCILS.

Heston and Isleworth.—Dr. E. J. Steegmann, the Medical Officer of Health, reports that in November, 1904, a system was adopted by which the drains of all new houses are tested by the sanitary inspectors as well as by the Surveyor's Department before a certificate is given by the Surveyor that the houses are fit for occupation. In the four years during which the system has been in force drains were tested as follows:—1905, 504 houses, defects 77 per cent.; 1906, 530 houses, defects 31 per cent.; 1907, 376 houses, defects 32 per cent.; 1908, 150 houses, defects, 38 per cent. The carrying out of the regulation made a considerable increase in the work of the sanitary inspectors, but its value is undoubted.

Watford.—The annual report of Dr. Arthur King, the Medical Officer of Health, states that 280 houses were built in the district during the year, and although there was a larger proportion of middle-class dwellings amongst these than usual, more than one-half of the houses were for the working class. The average artisan is well provided with house accommodation, and it is the low-waged labourer that cannot get housed at a sufficiently low rent, whose requirements are not well attended to. Work on the old sewers has been going on during the last two years, and much still remains to be done before things can be got in a thoroughly satisfactory condition. At the time of writing sewers needed attention in thirty-six roads, and many new ventilation shafts were necessary.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERCARN.—School; Mr. J. Bain, architect, Shire Hall, Newport, Mon.

Aberllefenni.—School (eighty places); architect, care of Mr. H. Hadyn Jones, Secretary, Merionethshire Education Committee, Towyn.

Abersychan. — Swimming-baths; Surveyor, Urban District Council, Abersychan.

Ashton-under-Lyne. — Hospital (30,000*l.*); Town Clerk, Ashton-under-Lyne.

Atherton.—Additions to workhouse, for the Guardians.

Beams.—School; Messrs. Cleary & Charlton, builders, Sunderland.

Belfast.—Stores for the Great Northern Railway (8,000*l.*); Mr. W. Dowling, contractor, Belfast.

Birmingham (Tyseley).—Shops; Mr. H. M. Pumfrey, builder, Bourneville.

Blundeston.—Chapel, for Wesleyan Methodist Trustees.

Boothstown.—Additions to mills, for Messrs. W. Yeates & Son, Worsley.

Brighouse.—Additions to mill; Messrs. Welsh & Nicholas, architects, Museum-chambers, Halifax.

Chatham.—Additions, Royal Sailors' Home; Mr G. Bond, architect, Chatham.

Clydebank.—Library (10,000*l.*); Surveyor, Town Council.

Coleraine.—Mission hall; Mr. Vincent Craig, architect, Belfast; Mr. W. Dewling, builder, Belfast.

Cornwall.—School (St. Burgan); Mr. G. Miners, builder, Marazion.

Crumlin.—School; Mr J. Bain, architect, Shire Hall, Newport, Mon.

Delaval.—Schools, New Delaval Colliery; Mr. J. Forrest, architect, Moot Hall, Newcastle-on-Tyne.

Dromfield.—Pavilion; Secretary, Hallowes Golf Club.

Eastleigh.—Church; Mr. J. Colson, architect, Winchester; Messrs. Musselwhite & Sapp, builders, Basingstoke.

Eccles. — School; Park-road, Monton (12,500*l.*); Messrs. William Nicholson & Son (Leeds), Ltd., builders. The Town Council has passed the following plans:—Grocer's shop, Thorp-street, Peel-green, for the Eccles Provident Industrial Co-operative Society, Ltd.; eight houses, Beech-street, Winton, Mr. W. A. Norman; two houses, Gleaves-road, Mr. John Lomax.

Edenderry.—Banking premises, for Hibernian Bank, Ltd., Dublin.

Elham.—Infirmary, for the Guardians, Elham.

Gellygaer.—Twenty houses, for Powell Dyffryn Company.

Gillingham.—Public convenience (250*l.*); Borough Surveyor, Gillingham.

Goodwick.—Church; Mr. E. M. Bruce Vaughan, architect, Dumfries-place, Cardiff.

Goole.—Skating-rink, for the Philadelphia Roller Skating Company, The Boulevard, Hull.

Horden.—School; Mr. J. Taylor, architect, The Castle, Winchester.

Hull.—School, Sauer-street; Mr. H. Hirst, City Architect.

Inverness.—Rink; Mr. Macrae, architect, Arcade Rink Company, Aberdeen.

Kilmuir. — United Free Church manse (1,000*l.*), for the Trustees.

Kirkcaldy.—Converting church into school; Mr. Birrell, architect, Kirkcaldy.

Kirktown.—Additions to school; Mr. A. Duncan, architect, Turriff, N.B.

Lanesfield. — Wesleyan church; Messrs. Manton & Son, architects, Wolverhampton.

Llanelly.—School; Borough Engineer, Town Hall.

Maestog.—School; Mr. W. Nash, architect, Angel-street, Neath.

Manchester.—Rink (6,000*l.*); Mr. G. R. Ward, architect, 71, Colmore-row, Birmingham.

Margam.—Twenty-four houses; Bryn Building Club, Margam.

Market Harborough.—Additions, police-station, and house, for Leicestershire County Council.

Melin.—Additions to school; Mr. W. Jenkins, architect, Guildhall, Neath.

Merionethshire. — Alterations to Higher Grade School; architect, care of Mr. H. Hadyn Jones, Secretary, Merionethshire Education Committee, Towyn.

Mossley.—School; Mr. F. Farmer, architect, Stalybridge.

Motherwell.—Church; Mr. H. Harper, architect, Longlow, Nottingham.

Nantwich.—Sanitorium, for the Guardians.

Newcastle.—Premises for Messrs. Tiller & Co., Newcastle; Mr. G. Errington, architect, Grainger-street, Newcastle.

Newcastle.—Technical block at Rutherford College (15,000*l.*); Messrs. Middlemiss Bros., builders, Newcastle.

Newington.—Additions to church schools; Mr. A. Allen, architect, Bridge-street, Banbury.

Newport.—Wesleyan church; Mr. A. Lander, architect, The Strand, Barnstaple.

Oldham.—Rink, Park-road, for the Kensington Roller Skating Company, Ltd., Oldham.

Paisley.—New works for Messrs. Arrol Johnston Car Company, Ltd., Paisley.

Ponteland.—Additions to workhouse, for the Guardians.

Portsoy, N.B.—School (4,000*l.*); Mr. J. Christie, architect, Fife-street, Banff.

Radcliffe.—United Methodist church, Ainsworth-road, for the Trustees.

Rathdown (Dublin).—Offices, board-room, for the Guardians.

Seaham Harbour. — Primitive Methodist church (3,000*l.*); Mr. Curry, builder, Seaham Harbour.

Southend-on-Sea.—Church school; Mr. J. C. Flexman, builder, Southend.

South Shields. — School, Langley-park; Messrs. Sherriff & Son, builders, South Shields.

Spennymoor.—Additions to school; Mr. Moore, builder, Shildon.

Sutton-in-Ashfield. — School, Forest-lane; Messrs. Fish & Son, builders, Pilchergate, Nottingham.

Swinton.—Church; Mr. A. E. Lambert, architect, 22, Park-row, Nottingham.

Tamworth. — Additions to workhouse (12,000*l.*); Mr. T. H. Clifford, builder, Glascote.

Tredegar.—Parish hall; Mr. G. Kershole, architect, Bargoed.

Worcester.—Houses, Wylds-lane; Mr. G. Kimber, builder, Bath-road, Worcester.

Worksop. — Church buildings, Newcastle-avenue; Trustees, Priory Church.

Worsley.—Additions, Wardley Mill, for Messrs. Burgen, Ledward, & Co., Worsley.

Competition News.

ELTHAM PARISH HALL.

There are about 180 entries in this competition. Mr. G. Nelson Prior is the Hon. Secretary of the Committee in charge of the matter.

General Building News.

ST. MARY'S CHURCH, STAMFORD.

The tower of St. Mary's Church, Stamford, surmounted by a fine XIVth century spire, is in serious need of repair. In the year 1788 steps were taken to strengthen the building, and the masonry is now almost dependent upon the iron bands which were at that time placed round the tower. Mr. W. Weir, the Architect of the Society for the Preservation of Ancient Buildings, and Mr. H. F. Traylen, of Stamford, have lately made a thorough examination of the edifice. They report that the tower is really in danger, and that steps should be taken to strengthen it as speedily as possible if the building is to be saved. The Committee took the opinion also of Mr. T. G. Jackson, R.A., who, having made a careful investigation, fully confirms the urgency of the work, and has offered to inspect the work of restoration, so that every precaution will be taken to insure the undertaking being carried out in the most careful way and by the most approved methods. The superintendence of the work has been entrusted to Mr. Traylen, to be carried out as soon as the necessary funds are raised. With the exception of pointing, replacing the finials, and the restoration of the top of the spire, the repairs will be almost entirely confined to the inside of the tower walls, so that the external beauty of the building will be in no way interfered with. The cost of the restoration will be at least 1,250*l.*, and the Committee appeal to all who are interested in this beautiful building to help as liberally as they can in carrying out the scheme. Subscriptions may be sent to the Stamford, Spalding, and Boston Bank, Stamford, to the "St. Mary's Church Restoration Fund."

BALLINGHAM CHURCH, NEAR HOLME LACY.

Repairs are to be made to the parish church of Ballingham, which is situated about three miles from Holme Lacy Station. Mr. W. E. H. Clarke, architect, of Hereford, has prepared plans, which Messrs. Beavan & Hodges, builders, of Hereford, are to execute.

U.F. CHURCH, CARR-BRIDGE.

The members of the U.F. Church at Carr-Bridge have opened a new church. The main part of the building is seated for about 300, while there is an annexe for eighty-four. The seating is of pitch-pine, with chairs in the annexe, the chairs being supplied by the North of England School Furnishing Company, Darlington. The architect for the building was Mr. Alex. Cullen, Hamilton, and the local architect was Mr. Cattanach, Kingussie. The contractors were:—Mason, Mr. Duncan Grant, Carr-Bridge; carpenter, Mr. Alexander Maclean, Carr-Bridge; plumber, Mr. James Nisbet, Inverness; slater, Mr. John Reid, Inverness; plasterers, Messrs. L. & R. Macpherson, Kingussie; painters, Messrs. A. Ferguson & Co., Aberdeen.

MEMORIAL CHAPEL, PRESTATYN.

A memorial chapel to the late vicar of Prestatyn is to be built in connexion with the parish church; it will provide extra accommodation for about forty-five persons, and a vestry. The architects are Messrs. Prothero, Phillott, & Barnard, of Cheltenham, who are now calling for tenders.

SECONDARY SCHOOL, BRIGHOUSE.

The memorial-stones were recently laid of a block of new premises designed expressly as a secondary school for girls, and also to meet the requirements of the Brighouse Pupil Teachers' Centre, as well as to provide facilities for instruction in evening class technical subjects. The accommodation to be provided in the new building is for about 150 day and 400 evening class students. Acting on the advice of the adjudicator, Mr. J. H. Woodhouse, of Manchester, the governors selected the competition designs of Messrs. Sutcliffe & Sutcliffe, architects, Hebden Bridge. The whole scheme is expected to involve an expenditure of about 10,000*l.* The various contractors are as follows:—Masons, Lister Brook & Co., Brighouse; joiner, Wm. Halliwell, Brighouse; painting, E. Harland & Sons, Bradford; plasterer, Albert Firth, Brighouse; plumber, A. L. Waddington, Brighouse; slater, Jas. Smithies, Brighouse; asphalting, Albert Kershaw, Brighouse; electricians, S. Hodgson & Co., Halifax; concretors, Hennebique Company, Hull.

SCHOOL, SCUNTHORPE.

A new higher elementary school, built by the Lindsey County Council, to accommodate 240 children, and as a centre for seventy-two pupil teachers, has just been opened. There are two blocks of buildings, including a science laboratory and a metallurgical laboratory for the boys, and a laundry and cooking school for the girls. The cost of the buildings is about 10,000*l.* The architects for the school are Messrs. Scorer & Gamble, Lincoln, and the contractors Messrs. H. W. Parker & Son, Boston.

COUNCIL SCHOOL, DARNALL, SHEFFIELD.

A new Council school has been opened in Whitby-road, Darnall. The building provides accommodation for 390 scholars in the mixed department, and 120 junior scholars and 300 infants, a total of 810. The total cost of site, buildings, and furniture is 14,762*l.*, or 18*l.* 4s. 7d. per school place provided. This expenditure covers the provision of two large central halls, at an estimated cost of 1,691*l.* The architects were Messrs. Potter & Sandford, and the contractors Messrs. T. Wilkinson & Son.

COUNCIL SCHOOLS, GREAT HARWOOD.

The new Western Council schools at Great Harwood have now been opened. The buildings comprise an infants' department, a mixed

Digitized by Google

school, and a technical block—all three separate structures, and have involved a cost exceeding 18,000*l.* The general contractor for the work is Mr. B. Lumb, of Todmorden, the plans being prepared by Mr. Hy. Littler, County Architect, whilst the clerk of the works is Mr. G. E. Smirk. The sub-contractors are:—Joinery, Mr. I. Taylor, Keighley; slating, Mr. E. Welch, Accrington; plumbing and painting, Mr. R. Hartley, Great Harwood; ventilating engineers, Messrs. H. Hargreaves & Sons, Bury; gas lighting, Messrs. Stott & Co., Oldham; sanitary fittings, Messrs. G. & E. Musgrave, Ltd., Liverpool; heating, Messrs. Newton, Chambers, & Co., Ltd., Manchester; plastering, Messrs. Rawlinson & Sons, Burnley; wall tiling, Messrs. Conway & Co., Manchester; and granite setts, the Threlkeld Granite Company, Keswick.

SUNDAY-SCHOOL AND CHURCH INSTITUTE, PARTINGTON.

A Sunday-school and church institute has been opened for the parish of St. Mary, Partington. The architects were Messrs. John Bowden & Co., of Manchester, and the contractors, Messrs. Brew Brothers, of Cadishead.

OPERA-HOUSE, GUATEMALA.

We learn from the *Board of Trade Journal* that the *Handelsberichten* (the Hague) of August 12 announces, on the authority of the Dutch Consul in Guatemala, that the Guatemalan Legislature have decided to build a new opera-house having a seating capacity for 2,500 persons. The building is to be constructed on modern lines.

AMBULANCE-STATION, BURNOPFIELD.

An ambulance-station has been built for the Burnopfield division of St. John's Ambulance Brigade. Mr. Heslop, Surveyor to Tanfield Council, was the architect for the station, and the contractors were Messrs. Davison & Son, of Burnopfield.

MENTAL HOSPITALS, TOXTETH.

The Toxteth Board of Guardians have added to the Smithdown-road Workhouse two blocks, which are to serve as mental hospitals for 200 males and 100 females. The complete cost of both buildings, including furnishing, fire mains, hydrants, and heating, is about 20,000*l.* The architect was Mr. Walter W. Thomas. Mr. Henry Hallard acted as clerk of the works.

NEW BUILDINGS AT BOTHWELL.

There is at present in course of erection at Bothwell a large chapel school for the Roman Catholic community of Bothwell and Hamilton Palace Colliery districts. The school is estimated to cost 8,000*l.* There is also in course of erection adjoining the fountain, Bothwell, a group of buildings to be known as the Donald Institute, the ground and cost of buildings being gifted to the village by the late James Donald, a native of Bothwell. Owing to the abnormal growth of Bothwell Haugh the School Board have found the school accommodation quite inadequate to cope with the demands, and schedules have been issued for the erection of a second school on ground nearly opposite the local store, and the work will be proceeded with at once. There is also at present a petition submitted to the Bothwell School Board to erect a school at Bothwell Park, a large colliery district midway between Bellshill and Uddingston.

CLUB PREMISES, COXLODGE AND GOSFORTH.

It is proposed to start a social club in this neighbourhood, and designs have been prepared by Messrs. Gibson & Stienlet, North Shields, for this purpose. It is intended to expend 2,800*l.* on the building and furnishings.

TRADE NEWS.

MESSRS. E. A. ROOME & Co., builders and contractors, of Basinghall-street, E.C., and Crown Works, Homerton, N.E., have secured the contract to pull down and rebuild the Prince Arthur public-house at Lee, for Messrs. Watney, Combe, Reid, & Co., Ltd., under the supervision of their architect and surveyor, Mr. M. T. Saunders.

The Columbian Fireproofing Company, Ltd., have secured a 14,000*l.* contract for nearly five miles of high-pressure water pipes, 24 in. diameter, on the "Bonna" system of reinforced concrete, for the Corporation of Swansea, under the general contractors, Messrs. J. Aird & Son. In addition to the above the company are constructing the "Bonna" pipes, 18 in. diameter, for the Clydebank Water Trustees (19,000*l.*), also for the Belfast Corporation, 21 in. diameter (1,700*l.*).

The Victoria Schools, Ebbw Vale, are being ventilated by means of Shorland's patent exhaust roof ventilators, supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Miscellaneous.

SLATING.

In the letter of "Argus" (p. 245 *ante*) the sentence "dropped into the gutter as shown," should have read "*dressed* into the gutter as shown."

REGENT-STREET POLYTECHNIC.

In the announcement regarding the Day School of Architecture at the Regent-street Polytechnic, the directors explain that this special department has been formed for the purpose of affording instruction to youths and young men who intend entering architects', surveyors', or builders' offices, or following any of the many designing and constructive industries where an architectural training constitutes the best and surest basis for future success. The course will cover a period of two or three years, and will include instruction in architecture, architectural design, building construction, land surveying, freehand, model and perspective drawing, measured drawing, modelling in clay, decorative design, figure composition, and historic ornament. There will also be the preparation of "Testimonies of Study," as required by the Royal Institute of British Architects and the schools of the Royal Academy, plane and solid geometry, building quantities, sanitary science, and, in addition, a thorough course in construction, including the chemistry of building materials.

THE MOSCOW CIRCULAR RAILWAY.

The circular railway round Moscow, which has been in construction for many years, and has cost many millions of roubles, has been completed and opened. The results, however, have been anything but satisfactory. Firstly, as regards passenger traffic, owing to the high fares and even more owing to the stations being often built in the middle of fields without any means of getting to them, the line has proved a complete failure. The number of passengers was absolutely ridiculous—a few dozen per month—and in the autumn it was decided to suspend traffic. Affairs are but little better as concerns goods traffic. Owing to the exceptionally high and unsatisfactory tariff, every merchant who can possibly manage it avoids using the line for transporting his wares. In a word, the line has in no way fulfilled the expectations of the Government, which financed the undertaking. Seeing that affairs are in a hopeless state, the Government is going to revise the tariff, when possibly the line may begin to exercise the influence hoped for by the constructors, which it undoubtedly should exercise. It is to be hoped that the circular railway will soon be adapted for passenger traffic, as it is considered it would largely help to solve the housing problem. The population of Moscow is steadily increasing by about 39,000 per year (the total in January last was 1,440,000), while of late the building of new houses has virtually ceased. It was hoped that the new line would enable people to find cheaper houses outside the city, and have a convenient means of getting into town to their business. Needless to say, the rent of houses has been steadily going up of late years.

THE CANADIAN PACIFIC RAILWAY.

Work has just been completed on what the *Canadian Gazette* describes as the most colossal piece of tunnelling that has ever been attempted in Canada, in the finishing of the two famous spiral tunnels on the main line of the Canadian Pacific Railway between Field and Hector, British Columbia, which will add several miles to the length of the track, together with over a mile of tunnelling and a couple of bridges, but will so cut the "Big Hill" grade as to more than double the tractive power of the locomotives. It has meant the excavation of nearly three-quarters of a million cubic yards of rock, the employment of a thousand men for nearly two years, the boring of about a mile and a half of tunnels through mountains 10,000 ft. high, and the building of two bridges over the Kicking Horse River; but it will prove a good investment for the railway, as it will reduce this grade from 4·5 to a maximum of 2·2. The completion of this work means that the principal obstacle to the running of trains over the Rocky mountains has been removed, and that in future, on this section of the line, two engines will be able to do much more work than four engines have hitherto accomplished, and at a much less expense, and with a complete elimination of the risk to life unavoidable in operating trains on a steep grade. The cost of the improvement has been 1,500,000 dollars.

LINLITHGOW PALACE.

Following out a scheme begun some years ago with the object of preserving ancient royal buildings against the ravages of wind and weather, repairs are at present being carried out on certain parts of Linlithgow Palace. One apartment to which attention is being directed is the room in which Mary Queen of Scots was born. By these repairs which have been executed from time to time much has been done to preserve the more dilapidated parts of the historical landmark.

AN INVISIBLE SLATE CLIP.

Messrs. Kerner-Greenwood & Co., of King's Lynn, send us a specimen and description of a slate-clip for fixing a slate on a roof in place of a damaged one. The slate is holed with a single hole about 2 in. from the centre line (to avoid drip on the clip from the joint of the superimposed slates), and a metal loop is passed through the hole in the slate and through a corresponding hole in the metal clip; the loop being wedged up with a short wedge-shaped nail, so as to fix the clip to the under side of the slate. The clip is a flat thin piece of metal about 1¼ in. wide with the lower end cut into sharp teeth, and with a bend downwards in the middle. When the slate is pushed up into position the clip is momentarily straightened out as it passes the batten, and after that resumes its bend and the teeth go into the batten. The device is simple and seems likely to be useful.

Patents.

APPLICATIONS PUBLISHED.*

16,194 of 1908.—George Nobes: Cowl or hood for chimney-pots, shafts, and the like.

20,502 of 1908.—William Thomas Lawman: Window-sash fastener.

21,346 of 1908.—Friedrich Assmann, Johann Heinrich Stupp, and Richard Hoppe: Latches for door locks.

21,749 of 1908.—Percy Richard Julius Willis: Lock-nuts.

24,776 of 1908.—Henry McKenzie and William Tivendale: Locks and latches.

25,374 of 1908.—Guillaume Dujardin: Ferro-concrete beams.

4,204 of 1909.—William Toombs: Construction of soundproof and fireproof floors and roofs.

4,441 of 1909.—George Henry Pedlar: Corrugated culvert or pipe sections.

8,807 of 1909.—Henry Ford Leslie: Metal bars for use in reinforced concrete constructional work.

12,551 of 1909.—Robert William Henry Rodney: Double bolt mechanism for doors, windows, casements, and the like.

SOME RECENT SALES OF PROPERTY: ESTATE EXCHANGE REPORT.

August 7.—By IRELANDS (at Norwich).

Seething, Norfolk.—Mere House Estate, 245 a. 0 r. 34 p., f.	£4,200

August 12.—By HENRY THOMAS & Co. (at Penzance).

Ludgvan, Cornwall.—Part of the Trewarthenick Estate, 988 a. 2 r. 23 p., f. (in lots)	25,040

August 19.—By EDWIN J. GILDERS & Co. (at Clacton-on-Sea).

St. Osyth, Essex.—Whyers Hall Farm, 306 a. 3 r. 26 p., f.	5,250
Spring-rd., four cottages, f.	101
Spring-rd., six cottages, f.	245
Little Clacton, Essex.—Two enclosures of pasture, 28 a. 1 r. 29 p., f.	730
Clacton-on-Sea, Essex.—Skinner's Bungalow, f.	270
Trafalgar-rd., plot of land, f.	450

August 23.—By C. & B. WESTBROOK.

Shepherd's Bush.—59, Abdale-rd., u.t. 71 yrs., g.r. 5*l.*, gross rental 29*l.* 18s.	190

August 25.—By PHILIP & GEORGE GEEN.

Dulwich.—99, Henslowe-rd., u.t. 68, yrs., g.r. 5*l.* 10s., w.r. 33*l.* 16s.	165

By WYATT & SON (at Chichester).

East Wittering, Sussex.—Coastguard station and store, 1 a. 3 r. 33 p., f.	930
Chichester.—16, Cavendish-st., f.	130

By JAMES ELEY (at Boston).

Skirbeck, Lincs.—House and enclosures, 14 a. 3 r. 2 p., f.	1,360

August 26.—By CHARLES SPARROW & SON.

Kentish Town.—16, Crown-ter., u.t. 46 yrs., g.r. 4*l.*, w.r. 39*l.*	180
Highgate.—30, Cromwell-av., u.t. 70½ yrs., g.r. 9*l.*, y.r. 45*l.*	395
Wood Green.—62 to 72 (even), Nightingale-rd., f., w.r. 176*l.* 16s.	1,475
Tottenham.—118 to 126 (even), Clyde-rd., u.t. 144½ yrs., g.r. 8*l.* 8s. 4d., w.r. 110*l.* 10s.	630

By WYATT & SON (at New Shoreham).

New Shoreham, Sussex.—Meadow land, 6 a. 2 r. 22 p., f.	750

***Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 28.—**Lyminge.**—SEWAGE DISPOSAL.—The Elham R.D.C. invite schemes and estimates for the disposal of the sewage of Lyminge Parish. Mr. R. Lonergan, Clerk, 11, Cheriton-place, Folkestone.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

* NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite designs for new grammar school in Moor Park-avenue, Preston. Three premiums are offered. See advertisement in this issue for further particulars.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 5.—**Cardiff.**—ALTERATIONS, ETC.—Tenders are invited for alterations and additions to No. 80, Queen-street, Cardiff, for Mr. J. B. Stephens. Plans and specification to be seen at office of Mr. J. B. Stephens, solicitor, 80, Queen-street, Cardiff.

SEPTEMBER 6.—**Aberdeen.**—NEW ACCESS.—Aberdeen T.C. invite tenders for the joiner and other works (combined schedule) in the provision of a new access from the Gymnasium, Poynernook-road. Specifications, etc., may be obtained from Mr. Wm. Dyack, Burgh Surveyor, Town House, Aberdeen.

SEPTEMBER 6.—**Calverley.**—HOUSE.—Tenders are invited (all trades except painter's) for erection of small house at Calverley. Plans, etc., seen, and quantities obtained, at the office of Mr. Horace E. Priestley, M.S.A., 17, Bertram-road, Bradford.

SEPTEMBER 6.—**Holmfirth.**—TEACHERS' ROOM, ETC.—The District Sub-committee, West Riding C.C., invite tenders for the erection of a teachers' room at the Hade Edge Provided School, also for reslating part of the roof of the school. Specifications may be obtained at the office of Mr. W. Heeley, Town Hall, Holmfirth.

SEPTEMBER 6.—**West Hartlepool.**—CONCRETE WALL.—The Hartlepool Port Sanitary Authority invite tenders for the construction of a concrete wall and other works at the Infectious Diseases Hospital. Plans and specifications may be seen, and any further information obtained, at the office of the Authority's Surveyor, Mr. J. W. Brown, Church-square, West Hartlepool, between 10 and 11 a.m.

SEPTEMBER 8.—**Barrow-in-Furness.**—WASH-HOUSE, ETC.—The Guardians of the Parish of Barrow-in-Furness invite tenders for the erection of a wash-house and store-room at the Cottage Homes, Roose-road. Plans, etc., may be inspected, and bills of quantities obtained, at the office of the architect, Mr. H. T. Fowler, A.R.I.B.A., Cornwallis-street.

SEPTEMBER 8.—**Bradshaw Mills.**—CONVENIENCES, ETC.—Tenders are invited for the erection of two blocks of conveniences, and re-arrangement of sanitary tower at Bradshaw Mills, near Halifax. Plans, etc., may be seen, and bills of quantities obtained, at the offices of Messrs. Clement Williams & Sons, architects, Post-office-buildings, Commercial-street, Halifax.

SEPTEMBER 8.—**Llandrindod Wells.**—CHURCH EXTENSIONS.—Estimates are invited by the Rector and Churchwardens for extensions to Holy Trinity Church, Llandrindod Wells. Plans, etc., may be seen, and bills of quantities obtained, at the offices of Mr. R. Wellings Thomas, F.R.I.B.A., architect, Llandrindod Wells.

SEPTEMBER 8.—**Millshaw.**—ALTERATIONS, ETC.—Tenders wanted for the various works required in the alterations and additions to three cottages, Millshaw, Churwell, for Messrs. W. L. Ingle, Ltd. Plans, etc., may be seen, and quantities obtained, at the offices of Mr. T. A. Buttery, F.I.A.S., architect, Queen-street, Morley, and 1, Basinghall-square, Leeds.

SEPTEMBER 8.—**Nottingham.**—ALTERATIONS.—Nottingham Education Committee invite tenders for alterations, etc., at the Berridge-road Council Schools. Plans may be seen at, and specifications, etc., obtained from, the office of the City Architect, Mr. Frank B. Lewis, Guildhall, on payment of a deposit of 1*l.* 1s.

SEPTEMBER 8.—**Sampford Peverell.**—SCHOOL ENLARGEMENT.—Tenders are invited for the enlargement of Sampford Peverell Schools. Plans and specification to be seen at the offices of Messrs. E. H. Harbottle & Son, architects, County-chambers, Exeter.

SEPTEMBER 8.—**Smithfield, Drainie.**—REPAIRS.—Tenders are wanted for restoring farm buildings at Smithfield, Drainie. Plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

SEPTEMBER 9. — **Abbotshill.**—RESIDENCE.—For the erection of a new residence at Abbotshill, Seaford, near Torrington. Names to Mr. Harbottle Reed, F.R.I.B.A., architect, 12, Castle-street, Exeter.

SEPTEMBER 9. — **Bingley.** — WEAVING SHED AND WAREHOUSE.—Tenders are invited for the various works required in the erection of a weaving shed and warehouse for Mr. B. Foulds. Plans may be seen, and quantities obtained, at office of Mr. Wm. Rhodes Nunns, M.S.A., architect and engineer, Bank-chambers, Bingley.

SEPTEMBER 9. — **Elgin.** — LAUNDRY.—Tenders are wanted for the various works required in the erection of new buildings for the Elgin Laundry Company, Ltd. Plans and specifications may be seen with Mr. John Wittet, architect, Elgin.

SEPTEMBER 10.—**Blackwood, Mon.**—HOUSES.—Tenders are invited for the erection of fourteen (or more) houses at Blackwood, Mon., for Messrs. the Glen View Building Club. Plans and specifications can be seen, and form of tender obtained, at the office of Mr. D. J. Thomas, architect, High-street, Blackwood, Mon.

SEPTEMBER 11.—**Dorchester.**—SCHOOL.—Dorset C.C. Education Committee invite tenders for the erection of a new school in Victoria Park, Dorchester. Plans and specification may be seen at the County Education Office, Dorchester.

SEPTEMBER 13.—**Blackrock.**—HOUSES.—Tenders are invited for the erection of three dwelling-houses, Blackrock, for Mr. T. O'Reilly. Plans, etc., may be seen at the offices of Messrs. W. H. Hill & Son, architects, 28, South-mall, Cork.

SEPTEMBER 13.—**Broomhill.**—ADDITIONS, ETC.—Tenders are invited for proposed additions and alterations to Manager's house, for the Togston-terrace Co-operative Society, Broomhill. Plans and specifications can be seen at the stores.

* SEPTEMBER 13. — **Doncaster.** — SCHOOL. — The Governors of the Doncaster Municipal High School for Girls invite tenders for school. See advertisement in this issue for further particulars.

SEPTEMBER 14.—**Stretford.**—COTTAGES.—The Stretford U.D.C. invite tenders for the erection of an additional eleven pairs of semi-detached cottages in Lacy-street, Stretford. Plans, etc., may be seen, and bills of quantities obtained, at the offices of the architects, Messrs. John Bowden & Co., 14, Ridgefield, Manchester, upon payment of 1*l.*

* SEPTEMBER 14. — **Teignmouth.** — SCHOOL.—The Devon County Education Authority invite tenders for new Council School at Exeter-road, Teignmouth. See advertisement in this issue for further particulars.

SEPTEMBER 15.—**Bargoed.**—COTTAGES.—Tenders are invited for the erection of twenty-eight cottages at Bargoed for the Bargoed Building Club. Plans and specifications can be seen, and particulars obtained, at the office of Mr. Idris Leyshon, architect and surveyor, Hanbury-road, Bargoed.

SEPTEMBER 15. — **Newcastle-on-Tyne.**—RAILWAY OFFICES.—The Directors of the North-Eastern Railway Company invite tenders for the erection of a block of offices in Westgate-road, Newcastle-on-Tyne. Plans and specification may be seen, and quantities and further information obtained, upon application to Mr. William Bell, the Company's Architect, Central Station, Newcastle-on-Tyne.

SEPTEMBER 16.—**Abertillery.**—SCHOOL EXTENSION.—The Abertillery U.D.C. Education Committee invite tenders for the extension of the Abertillery Central Girls' School. Drawings and specifications may be inspected at the office of the architect, Mr. W. H. Hiley, Chapel-street, Abertillery, who will supply bills of quantities on deposit of 1*l.* 1s.

SEPTEMBER 17.—**Swinton.**—SCHOOL ADDITIONS.—The West Riding Education Committee invite whole or separate tenders for making additions and alterations to the Kilnhurst Provided School, Swinton. Plans may be seen, and specifications with quantities obtained, on application to the West Riding Architect, County Hall, Wakefield, on deposit of 1*l.* in each case by separate letter to the West Riding Treasurer, County Hall, Wakefield.

* SEPTEMBER 18. — **Cardiff.** — COUNTY HALL.—The Glamorgan C.C. invite tenders for a County Hall in Cathays Park, Cardiff. See advertisement in this issue for further particulars

SEPTEMBER 20.—**Cambridge.**—ADDITIONS TO PUMPING STATION.—Erection of additions to the Sewage Pumping Station, Riverside, Cambridge, according to plans, etc., prepared by the Borough Surveyor. A copy of the plans, etc., may be seen at the office of the Borough Surveyor, Guildhall.

SEPTEMBER 20.—**Henley-on-Thames.**—PUMPING STATION EXTENSIONS. — The Henley-on-Thames Corporation invite tenders for additions and alterations to the engine and boiler house at the Lambridge Power Station, including boiler and engine foundations and setting for economiser. Plans, etc., and form of tender may be obtained at the office of the Borough Surveyor, Mr. E. F. Pratt, at Henley.

SEPTEMBER 20.—**Holy Island, Northumberland.**—LIFEBOAT HOUSE AND SLIP. — The Committee of Management of the Royal National Lifeboat Institution invite tenders for the construction of a timber and corrugated steel lifeboat house and timber slip at "The Snook," Holy Island, Northumberland. Plans and specification may be inspected on application to the Local Honorary Secretary, the Rev. Irvine Crawshaw, M.A., the Vicarage, Holy Island, Beal, or at the office of the Engineer and Architect to the Royal National Lifeboat Institution, Mr. W. T. Douglass, M.Inst.C.E., 15, Victoria-street, Westminster, London, S.W., on or after September 4. Copies of the bill of quantities and form of tender may be obtained on application to the Engineer and Architect, accompanied by a deposit of 1*l.*, and also of certain of the plans on payment of 3s. (not returnable).

SEPTEMBER 20.—**Laurencekirk.**—STATION BUILDINGS.—The Directors of the Caledonian Railway Company invite tenders for the works to be executed in the construction of new station buildings at Laurencekirk. The drawings may be seen at the office of the Company's Engineer, Buchanan-street Station, Glasgow, where copies of the specification and schedule may be obtained on payment of 2*l.* 2s.

SEPTEMBER 20.—**Weardale.**—STONE BRIDGES.—The Weardale R.D.C. invite tenders for the erection of three stone bridges on the new road from Eastgate to Rookhope. Plans may be seen, and other information obtained, on application to Mr. G. W. Egglestone, the Highway Surveyor, at his office at the Board-room of the Guardians in Stanhope. Intending contractors requiring specifications and forms of tender will be required to make a deposit of 1*l.*

SEPTEMBER 21. — **Bristol.** — SCHOOL.—The Bristol Education Committee invite separate tenders for the builder's, plumber's, and electrician's work connected with the erection of a Council school at Alexandra Park, Fishponds. Drawings, etc., may be inspected, and (on payment of a deposit of 2*l.* 2s.) forms of tender and quantities may be obtained at the office of the architects, Messrs. Rodway & Dening, Gaunt House, Orchard-street, Bristol.

SEPTEMBER 21.—**Durham.**—COUNCIL SCHOOLS, ETC.—Durham C.C. invite sole tenders for new Council schools at Wingate and Cold Hesledon; alterations and additions at Dean Bank, New Penshaw, and Westwood Council Schools. Plans, etc., may be seen, and bills of quantities obtained, as follows:—(1) For Wingate School, at the office of Mr. W. Rushworth, Shire Hall, Durham. (2) For Cold Hesledon School, Mr. J. W. F. Phillipson, Murton-chambers, 8, Grainger-street, Newcastle-on-Tyne. (3) For Dean Bank School, Mr. T. W. T. Richardson, 57, High-street, Stockton-on-Tees. (4) For New Penshaw and Westwood Council Schools (plans, specifications, and general conditions only), Mr. F. E. Coates, Shire Hall, Durham.

SEPTEMBER 22.—**Ilfracombe.**—BUSINESS PREMISES.—Tenders are invited for the erection of business premises, the Promenade, Ilfracombe, for Mr. T. D. Harding. Drawings, etc., may be obtained at the office of Mr. Allen T. Hussell, F.R.I.B.A., Market-square, Ilfracombe.

* SEPTEMBER 22.—**Putney Bridge.**—ALTERATIONS.—The Fulham B.C. invite tenders for alterations to wharf and additions to wharf-keeper's house at Swan Wharf, Putney Bridge. See advertisement in this issue for further particulars.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

✱ SEPTEMBER 23.—**Maidstone.**—ISOLATION HOSPITAL.—The Maidstone R.D.C. invite tenders for Isolation Hospital at Loose, near Maidstone. See advertisement in this issue for further particulars.

✱ SEPTEMBER 23.—**Tunbridge Wells.**—POST-OFFICE EXTENSIONS.—The Commissioners invite tenders for extension of the Tunbridge Wells Post-office. See advertisement in this issue for further particulars.

NO DATE. — **Acrington.**—ALTERATIONS.—Tenders are invited for the work required in the alterations to the Crown Inn, Whalley-road, Accrington, belonging to Messrs. J. Grimshaw, Ltd. Plans can be seen, and quantities obtained, on payment of a deposit of 1*l.*, from Messrs. Bell & Eastham, surveyors, 18, Bank-street, Accrington.

NO DATE.—**Belfast.**—VILLA.—Tenders are invited for the erection of villa residence, Upper Newtownards-road, Belfast, for Mr. John O'Neill. Plans, etc., can be obtained at the office of Messrs. Moore & Flanigan, architects, 35, Royal-avenue, Belfast.

NO DATE.—**Bradford Moor.**—STABLING.—Tenders are required for the erection of a block of stabling at Bradford Moor. Quantities will be forwarded on written application to Messrs. James Young & Co., architects and surveyors, 62, Market-street, Bradford.

NO DATE.—**Brynherbert.**—IMPROVEMENTS AND REPAIRS.—The Cardigan County Education Committee invite estimates for carying out improvements and repairs to Brynherbert Council School. Plans, etc., can be seen, and full particulars obtained from Mr. James James, Ffynonhywel Llanrhystyd, or from the office of Mr. Geo. Dickens-Lewis, County Architect, Aberystwyth.

NO DATE. — **Harestock.**—COTTAGES.—Tenders are invited for the erection of six cottages at Harestock, near Winchester. Plans and specification can be obtained on application to the architects, Messrs. Meakin, Archer, & Stoneham, 32, Nicholas-lane, London, E.C.

NO DATE.—**Wheatley Hill.**—MINERS' HALL.—Tenders are invited for the erection and completion of a miners' hall at Wheatley Hill. Plans, etc., may be seen and quantities obtained, on application to the architect, Mr. James Garry, F.R.I.B.A., 47, Church-street, West Hartlepool.

✱ NO DATE. — **Wolverhampton.** — SCHOOL.—The Wolverhampton Education Authority invite tenders for school for 400 scholars. See advertisement in this issue for further particulars.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 20.—**Pontllanfraith.**—BRIDGE WORKS.—Monmouth Main Roads and Bridges Committee invite tenders for the pulling down of the existing bridge at Pontllanfraith and the erection of a steel structure. Plans, etc., may be seen at the office of Mr. William Tanner, F.S.I., County Surveyor, and a copy of the quantities obtained on payment of 1*l.* 1s.

SEPTEMBER 21.—**Bristol.**—HEATING AND VENTILATING.—The Bristol Education Committee invite tenders for the heating and ventilating of the Council school to be erected at Alexandra Park, Fishponds. General conditions, etc., and the drawings may be inspected, and (on payment of a deposit of 1*l.* 1s.) specification, etc., may be obtained at the office of the architects, Messrs. Rodway & Dening, Gaunt House, Orchard-street, Bristol.

MISCELLANEOUS.

SEPTEMBER 6. — **London.** — RAILWAY STORES. — The Directors of the Bengal and North-Western Railway Company, Ltd., invite tenders for the supply and delivery of various stores, as per specification to be seen at the company's offices, 237, Gresham House, Old Broad-street, London, E.C. For each specification a charge of 10s. will be made.

SEPTEMBER 6. — **Smallthorne.** — SCAVENGING.—The Smallthorne U.D.C. invite tenders for scavenging in the Packmoor and Bradeley areas of the Urban District. Particulars and a form of contract may be seen on application to Mr. E. Dutton, Sanitary Inspector, or to Mr. Geo. Phillips, Clerk to the Council, Council Offices, Smallthorne.

SEPTEMBER 11.—**Manchester.**—CREOSOTING PLANT.—Manchester Corporation Waterworks Committee invite tenders for the supply of a creosoting plant to be erected on their Thirlmere Estate. Specification and form of tender may be obtained on application to the Secretary, Waterworks Offices, Town Hall, Manchester, on payment of 1*l.* 1s.

SEPTEMBER 14. — **Blaydon.** — SCAVENGING, ETC.—The Blaydon U.D.C. invite tenders for the removal and disposal of contents of ashpits, etc., at Victoria Garesfield. Full particulars may be obtained from Mr. Robert Biggins, Sanitary Inspector, at the offices of the Council, Blaydon-on-Tyne, between 9 and 10 a.m.

SEPTEMBER 14. — **Heywood.** — GAS FITTINGS, ETC.—The Gas Committee invite tenders for the supply of tubes and fittings, sulphuric acid, and tinned goods. Specification and form of tender may be obtained upon application to Mr. W. Whatmough, Gas Manager, Municipal Buildings, Heywood.

SEPTEMBER 14.—**Southampton.**—PULLING DOWN.—Southampton Corporation invite tenders for pulling down certain premises in Evans-street and removing the materials. Specification, etc., may be inspected, and form of tender obtained, at the Borough Engineer's Office.

SEPTEMBER 16. — **Haverfordwest.** — FIRE BRIGADE SUPPLIES.—The Haverfordwest Corporation Fire Brigade Committee invite tenders for leather hose, canvas hose, gun-metal breeching, etc. Further particulars may be obtained from Mr. W. Bevan, Borough Surveyor, Council Chambers, Haverfordwest.

SEPTEMBER 16.—**Newbury.**—FENCING.—Tenders are invited from local builders and ironmongers for the provision and fixing of about 700 yds. of fencing and entrance gates for the new cemetery. Specifications, etc., may be seen at office of Mr. S. J. L. Vincent, A.M.Inst.C.E., Borough Surveyor, Mansion House-street.

✱ SEPTEMBER 17.—**Taunton.**—WATER METERS.—The Taunton R.D.C. invite tenders for supply of forty meters. See advertisement in this issue for further particulars.

SEPTEMBER 25.—**Braintree.**—CAST-IRON PIPES, ETC.—Braintree R.D.C. invite tenders for the supply and delivery at Kelveden (G.E.R.) of about 550 tons of 7-in., 6-in., 5-in., 4-in., and 3-in. cast-iron pipes, well cylinders, specials, and other works. Specification, etc., may be obtained from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, on payment of 3*l.* 3s.

PAINTING, etc.

SEPTEMBER 6. — **Bradford.** — PAINTING.—The Bradford Education Committee invite tenders for the outside painting of several schools and the inside painting of two school-houses. Specification and form of tender may be obtained at the office of the City Architect, Whitaker-buildings, Brewery-street, Bradford.

SEPTEMBER 7.—**Oldham.**—PAINTING, ETC.—The Park and Cemeteries Committee of the Oldham Corporation invite tenders for painting, etc., at Hollinwood Cemetery. Specification and form of tender may be obtained at the office of the Borough Surveyor.

SEPTEMBER 8. — **Crumpsall.**—PAINTING.—The Manchester Guardians invite tenders for painting the exterior of the Workhouse Infirmary at Crumpsall. Specifications may be obtained from the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester, upon payment of a deposit of 10s. 6d.

SEPTEMBER 9.—**Leeds.**—PAINTING.—Tenders are invited for the painting work required at the Holbeck, Headingley, and Armley Branch Libraries. Specifications may be seen, and forms of tender, etc., obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

SEPTEMBER 11. — **Belfast.** — PAINTING.—The Tramways and Electricity Committee of the Belfast Corporation invite tenders for the painting, etc., of the Electric Supply Station, East Bridge End. Specification (No. I. 8), with form of tender, etc., may be obtained from Mr. Thomas W. Bloxam, M.Inst.E.E., City Electrical Engineer, Corporation Electricity Works, East Bridge-street, Belfast, on deposit of 1*l.* 1s.

✱ SEPTEMBER 13.—**London, W.**—JOBBING WORK.—The Managers of the Central London Sick Asylum District invite tenders for jobbing work. See advertisement in this issue for further particulars.

SEPTEMBER 14. — **Birmingham.** — PAINTING AND CLEANING. — Birmingham Parish Guardians invite tenders for cleaning and painting the exterior woodwork and ironwork, etc., of the Parish Offices, Edmund-street, Birmingham. Specification can be seen, and particulars obtained from the architects, W. H. Ward, Paradise-street, Birmingham.

SEPTEMBER 14. — **Eastby.** — PAINTING.—Bradford Guardians invite tenders for painting the Sanatorium at Eastby, near Skipton, also Union Offices, 22, Manor-row, Bradford. Specifications and forms of tenders may be obtained (on receipt of 1*l.* 1s. deposit) at the Architect's office, 22, Manor-row, Bradford.

SEPTEMBER 20. — **Halifax.**—PAINTING.—The Health Committee of the Halifax Corporation invite tenders for the outside painting of three houses, and the inside and outside painting of sheds, stables, and mortuary, situate at the Scavenging Depôt, Lister-lane and Hall-street. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 1*l.*

✱ SEPTEMBER 22. — **London, W.**—DECORATIONS AND REPAIRS.—The Fulham B.C. invite tenders for certain decorations and repairs to underground convenience at Gibbs-green, West Kensington, and the urinal at Putney Bridge. See advertisement in this issue for further particulars.

ROADS, SANITARY, AND WATER WORKS.

SEPTEMBER 6.—**Altrincham.**—SEWERS.—Altrincham U.D.C. invite tenders for the construction of 9-in., 12-in., and 15-in. sewers in Regent-road and Oldfield-road, together with manholes, etc. Plans and specifications may be seen, and quantities and forms of tender obtained, on application to Mr. H. E. Brown, Surveyor to the Council, Town Hall, Altrincham.

SEPTEMBER 6.—**Burnage.**—MAKING-UP.—Manchester Corporation (Withington Committee) invite tenders for the making-up (with natural rock asphalt) of Burnage Hall-road, Burnage. Plans, etc., can be seen, and a form of tender with quantities and any further information obtained from the Surveyor to the Committee, Town Hall, West Didsbury.

SEPTEMBER 6. — **West Moor.** — STREET WORKS.—Tynemouth R.D.C. invite tenders for the construction of carriageways, etc., in Ash-terrace, Maple-street, etc., West Moor. Plans, etc., may be seen at the office of Mr. A. S. Dinning, 21, Ellison-place, Newcastle.

SEPTEMBER 7.—**Bedford.**—ROAD-MAKING AND PAVING.—Bedford T.C. invite tenders for paving and road-making in Sidney-road, Bedford, according to plans, etc., which, with the form of contract, may be seen, and any other information obtained, at the Borough Surveyor's Office, Town Hall, Bedford.

SEPTEMBER 7. — **Deptford.**—PIPE SEWER.—Deptford B.C. invite tenders for the construction of pipe sewer at Brockley-road. Form of tender and all other information can be obtained on application during office hours at the office of the Borough Surveyor, Mr. J. Sutcliffe, A.M.Inst.C.E., Town Hall, New Cross-road, S.E.

SEPTEMBER 7. — **Leigh-on-Sea.** — FLAGGING.—The Leigh-on-Sea U.D.C. invite tenders for the works required to be done in taking-up tar paving and flagging with concrete flags in Cliff-parade, in accordance with plans and specifications prepared by the Surveyor to the Council, Mr John Wm. Liversedge, A.M.Inst.C.E., from whom forms of tender and quantities can be obtained on depositing the sum of 10s. 6d.

SEPTEMBER 8. — **Barrow-in-Furness.** — STREET WORKS.—The Corporation invite tenders for the construction of certain lengths of streets. Plans may be seen, and bills of quantities, etc., obtained, upon application at the Borough Engineer's Office, Town Hall.

SEPTEMBER 9. — **Edinburgh.**—SEWER.—Edinburgh Council invite offers for the construction of a new 4-ft. diameter sewer for the Haymarket District, to conform to plans, etc., prepared by the Burgh Engineer, from whom all schedules of measurement and all particulars may be obtained.

SEPTEMBER 9. — **Gowerton.** — GAS PIPES. — The Directors of the Gowerton and District Gas Company, Ltd., invite tenders for the supplying, laying, jointing, and reinstating pipes in the Gowerton District. Specification and schedule may be obtained at the offices of the company upon the receipt of 2*l.* 2s. Mr. Rex Vivian, Secretary, Gasworks, Gowerton.

SEPTEMBER 9. — **Hackney.** — ROAD-MAKING, ETC.—Hackney B.C. invite tenders for the kerbing, channelling, paving, making-up, etc., of Leabourne-road (northern portion). Specification, plans, etc., may be inspected, and copies of the bill of quantities and form of tender obtained, on application to Mr. Norman Scorgie, M.Inst.C.E., Borough Engineer and Surveyor, and on payment of the sum of 1*l.* 1s.

SEPTEMBER 9.—**Knebworth.**—SEWERAGE: CONTRACT No. 2.—Tenders are invited for the construction of about 3,250 lin. yds. stoneware pipes, and about 60 lin. yds. of cast-iron pipes, with manholes, screening chamber, etc., on the Knebworth Building Estate. Drawings and specification may be seen, and bills of quantities obtained, on application to Mr. R. C. F. Busfeild, Resident Engineer, Knebworth Station, by deposit of cheque for 5*l.* 5s.

SEPTEMBER 13. — **Church.** — MAIN SEWER.—Church U.D.C. invite tenders for the construction of a main sewer from Fox-street to the Outfall Sewerage Works at Coppy Clough, Church. Plans may be seen, and forms of tender, etc., obtained, on application to Mr. W. E. Wood, Surveyor, D.C. Offices, Church.

SEPTEMBER 13. — **Runcorn.** — STREET WORKS.—The R.D.C. of Runcorn invite tenders from specialists in tar macadam for the making of Victoria-road, Grappenhall. Plans, etc., may be seen, and quantities obtained (on deposit of 10s. 6d.), at Mr. Robert Garnett's, Sankey-street, Warrington.

SEPTEMBER 14. — **Lewisham.**—STREET WORKS.—The Lewisham B.C. invite tenders for kerbing, channelling, and metalling the roadways, and paving the footpaths with artificial stone (in separate contracts) of Wearside-road, Lewisham. Plans, etc., may be seen, and forms of tender obtained, at the Town Hall, Catford (Surveyor's Department), on and after Wednesday, September 1, 1909. Copies of the specification, etc., may be had on payment of 5s. in each case, which will not be returned.

SEPTEMBER 14. — **New Malden.** — STONEWARE PIPE SEWER.—The Maldens and Coombe U.D.C. invite tenders for the reconstruction of a 9-in. stoneware pipe sewer, together with all manholes and connexions, between Queen's-road and Albert-road, New Malden. Drawings may be seen, and specifications, etc., obtained, on application to the Engineer and Surveyor, Mr. Reginald H. Jeffes, A.M.Inst.C.E., at the Council Offices, New Malden, between the hours of 10 and 5, upon payment of a deposit of 2*l.* 2s.

SEPTEMBER 15. — **Hornsey.** — ROAD WORKS.—The Hornsey T.C. invite tenders for sewering and making-up various streets situate within the Borough. Forms of tender, etc., and all information can be obtained from Mr. E. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, 99, Southwood-lane, Highgate.

SEPTEMBER 16. — **Croydon.** — EARTHENWARE PIPE SEWERS.—The Croydon R.D.C. invite tenders for the construction of about 3,000 ft. lineal of earthenware pipe sewer, with manholes, etc., in Manor-road, Wallington. Plans and specification may be seen on and after September 6, at the office of the Council's Highway Surveyor, Mr. J. S. Killock, A.M.Inst.C.E., Katharine-street, Croydon, and form of tender, with copy of the bill of quantities, obtained on payment of 2*l.* 2s.

SEPTEMBER 16.—**Croydon.**—PRIVATE STREET WORKS.—Croydon R.D.C. invite tenders for the execution of private street works in the following roads:—Parish of Coulsdon—Cross-road, Foxley-gardens, Hillside-avenue, Purley-vale, Silverdale-road, Sunnydene-road. Plans, etc., prepared by the Council's Surveyor, Mr. R. M. Chart, F.S.I., can be inspected, and forms of tender obtained, at his office, Katharine-street, Croydon, on payment of 2*l.* 2s.

SEPTEMBER 17.—**Barking.**—PRIVATE STREET WORKS.—The Barking Town U.D.C. invite tenders for the execution of private street works at Bifrons-street (eastern portion). Plans and sections may be seen, and specification, etc., obtained from Mr. C. F. Dawson, Surveyor to the Council, Public Offices, Barking.

✱ SEPTEMBER 20. — **Beckenham.** — ROAD-MAKING.—The Beckenham U.D.C. invite tenders for making-up Shortlands-grove and a new road between Belmont and Hampden roads. See advertisement in this issue for further particulars.

SEPTEMBER 20.—**Bermondsey.**—REPAVING.—The B.C. invite tenders for the repaving of Parish-street and portions of Great Maze Pond with creosoted wood blocks. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. R. J. Angel, M.Inst.C.E., Borough Surveyor.

SEPTEMBER 25. — **Braintree.** — WATER SUPPLY.—The Braintree R.D.C. invite tenders for carrying out water supply works for the Parishes of Great Coggeshall, Little Coggeshall, and Kelvedon. Plans and specifications may be seen, and copies of the quantities and form of tender obtained from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, on payment of 3*l.* 3s.

✱ SEPTEMBER 28. — **Willesden.** — DRAINAGE.—The Willesden D.C. invite tenders for constructing drainage intercepting sewer. See advertisement in this issue for further particulars.

NO DATE.—**York.**—STREET IMPROVEMENTS.—Tenders are invited for the execution of certain street widenings and improvements on the Holgate and Acomb roads, including excavating, the erection of retaining walls, etc. Plans may be seen, and copy of specification, etc., obtained, on depositing 1*l.* 1s., from Mr. F. W. Spurr, City Engineer, Guildhall, York.

Digitized by Google

STONES, MATERIAL, AND STORES.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 8.—**Manchester.**—TERRA-COTTA.—Manchester Education Committee invite tenders for the supply of terra-cotta for the Brookdale Park Municipal School, Newton Heath, Manchester. Plans may be seen, and a copy of the bills of quantities (including specification) may be obtained, at the offices in Deansgate, Manchester, on a deposit of cheque for 1*l.* 1s., to be made payable to the Accountant, Education Offices, Deansgate, Manchester.

SEPTEMBER 8.—**Tipton.**—COLD BLAST SLAG MEDIA.—The Tipton U.D.C. invite tenders for 20,000 cube yds. of cold blast slag media for filter beds at the Sewage Disposal Works, Toll End. Specification and all other particulars obtained, on application at the offices of Messrs. Dodd & Dodd, A.M.Inst.C.E., civil engineers, 37, Waterloo-street, Birmingham, on payment of a sum of 2*l.* 2s.

SEPTEMBER 10.—**Eastbourne.**—GRANITE SPALLS.—The Eastbourne Guardians invite tenders for the supply of 50 tons of blue Guernsey granite spalls for breaking. Forms of tender may be had on application to Mr. A. Hurst, Clerk, Guardians' Offices, Avenue House, Eastbourne.

SEPTEMBER 11.—**Rothwell.**—BROKEN GRANITE AND GRAVEL.—Rothwell U.D.C., Northants, invite tenders for the supply of 2-in. and 1½-in. broken granite (best and seconds), 2-in. and 1½-in. broken slag, 1-in. and ½-in. granite and slag chipping, ¾-in. natural gravel, at per ton. Tenders and samples to be delivered at the office of Mr. T. C. Betts, Surveyor, Market House, Rothwell, Northants.

* SEPTEMBER 14.—**Edmonton.**—PORTLAND CEMENT.—The Edmonton U.D.C. invite tenders for supply of Portland cement. See advertisement in this issue for further particulars.

SEPTEMBER 18.—**Tredegar.**—ROAD MATERIAL.—The U.D.C. of Nantyglo and Blaina invite tenders for the supply of limestone, granite, and limestone and granite chippings. Tenders to be sent to Mr. H. J. C. Shepard, Clerk, Tredegar, and samples to Mr. W. J. Davies, Blaina, the Council's Surveyor.

SEPTEMBER 20.—**Dorchester.**—ROAD MATERIAL.—Tenders are invited for supply and delivery of road material. Forms of tender, etc., may be obtained from Mr. Percival T. Harrison, A.M.Inst.C.E., Borough Engineer, Guildhall Chambers, Dorchester.

SEPTEMBER 20.—**Sunbury-on-Thames.**—BROKEN GRANITE.—Sunbury-on-Thames U.D.C. invite tenders for the supply of granite, broken to pass through a 2½-in. ring. Further particulars may be obtained of Mr. Harold F. Coales, the Surveyor to the Council, Council Offices, Sunbury-on-Thames.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*WOODWORK INSTRUCTOR	Bridewell Hospital	100*l.* per annum, etc.	Sept. 29

Auction Sale.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	Sept. 8

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	"
Flettons	1 4 6	" delivered at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing..	5 0 0	" " "
Best Blue Pressed Staffordshire ...	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers ...	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End.....	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers.....	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers...	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End.....	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement.....	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt.....	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt.....	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

STONE (*continued*).

	s. d.	
Ancaster in blocks	1 10	per ft. cube deld. rly dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks ...	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "

HARD YORK—

Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green ...	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles...	42 0	per 1000 at rly. dep.
Hip and Valley tiles ...	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles ...	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards) ...	57 6	per 1000 "
Do. Ornamental do.....	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles.....	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles.....	48 0	per 1000 "
Best Ornamental tiles.....	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "

TILES (*continued*).

	s. d.	
Best "Hartshill" brand plain tiles, sand-faced.....	50 0	per 1000 at rly. dep.
Do. pressed.....	47 6	" "
Do. Ornamental do.....	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced ...	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.....	13 10 0	... 15 0 0
Deals: best 3 by 9	18 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6 ...	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in. ...	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in. ...	8 10 0	... 9 10 0
Foreign Sawn Boards—1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.).....	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	... 4 15 0

JOINERS' WOOD. White Sea:	At per standard.	
first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.....	22 0 0	... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
3 in. by 9 in.....	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.....	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg—First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 0 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
Battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube...	0 3 6	... 0 5 0
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	... 0 3
Small " "	0 2 6	... 0 2

Digitized by Google

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £ s. d.	£ s. d.
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	0 0 9½
½ in. do. do	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0
Teak per load	17 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
⅝ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. " "	0 14 0	0 18 0
⅝ in. by 7 in. white " "	0 10 0	0 11 6
1 in. by 7 in. " "	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	7 10 0
Compound Girders, ordinary sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	10 0 0
Flitch Plates	9 0 0	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	—
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
" " Galvanised	17 0 0	—

(*And upwards, according to size and gauge.*)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0	—
" " 24 g.	10 15 0	—
" " 26 g.	12 5 0	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	—
" " 26 g.	18 10 0	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0	—
" " 22 g. and 24 g.	18 10 0	—
" " 26 g.	20 0 0	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	—
" " 22 g. and 24 g.	14 15 0	—
" " 26 g.	16 5 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	—
" " " 26 g.	15 0 0	—
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.	Per ton, in London. £ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 0 0	—
Pipe in coils	16 10 0	—
Soil pipe	18 10 0	—
Compo pipe	19 10 0	—
ZINC—Sheet—		
Vielle Montagne	26 10 0	—
Silesian	26 5 0	—
COPPER—		
Strong sheet per lb.	0 1 0	—
Thin "	0 1 1	—
Copper nails "	0 0 10	—
Copper wire "	0 0 10	—
BRASS—		
Strong Sheet "	0 0 11	—
Thin "	0 1 0	—
TIN—English Ingots "	0 1 5	—
SOLDER—Plumbers' "	0 0 7	—
Tinmen's "	0 0 9½	—
Blowpipe "	0 1 0	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2¼d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	2¾d. " "
" fourths	4d. " "
26 oz. thirds	3d. " "
" fourths	4¼d. " "
32 oz. thirds	4½d. " "
" fourths	4¾d. " "
Flute Sheet, 15 oz.	3¼d. " "
" 21 oz.	4¼d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅜ "	2¾d. " "
½ "	2¾d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 2
" " in barrels	"	0 2 3
" " in drums	"	0 2 6
Boiled " in barrels	"	0 2 6
" " in drums	"	0 2 9
Turpentine in barrels	"	0 3 1
" in drums	"	0 3 3
Genuine Ground English White Lead	per ton	20 10 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ABERTRIDWR.—For street works, Ilan-road, for Caerphilly Urban District Council. Mr. A. O. Harpur, Surveyor, Council Offices, Caerphilly:—

Packer Bros.	£994 18 8	J. Thomas	£761 1 0
T. Williams & Co.	832 17 7	A. J. Rossiter	750 15 2
J. Morgan	827 16 0	Morgan Bros., Penyrheol, Cardiff*	734 11 4
J. Williams	783 6 4	W. Brown	675 9 7
J. Williams & Co.	775 3 7		
A. J. Collins & Co.	763 6 5		

ABERTRIDWR.—For street works, part of Caerphilly-road and part of High-street, for Caerphilly Urban District Council. Mr. A. O. Harpur, Surveyor, Council Offices, Caerphilly:—

J. Morgan	£713 5 4	A. G. Collins & Co.	£635 0 6
J. Williams	678 6 9	Packer Bros.	633 9 0
Morgan Bros.	660 7 6	A. J. Rossiter, Caerphilly*	597 9 6
J. Williams & Co.	654 2 8	W. Brown	536 14 11
J. Thomas	650 9 5		

ARDLEIGH.—For alterations and additions at Ardleigh. Mr. H. Steward-Watling, F.S.A., architect, 153A, High-street, Colchester, etc.:—

Pyke* £140

[Gates, fencing, etc., at per schedule.]

BANBURY.—For Council School, Grimsbury, Banbury, for the Banbury Education Committee. Messrs. Talbot-Brown & Fisher, FF.R.I.B.A., architects, Wellingborough. Quantities by Messrs. Batstone Bros., Cannon-street, London:—

Williams & Carnall	£9,200 4 9	E. J. Johnson & Son	£6,947 0 0
H. Crusa	8,225 0 0	F. H. Smith	6,820 0 0
G. Orchard & Son	7,323 0 0	T. Hickman	6,747 0 0
R. Cosford	7,298 0 0	Hacksley Bros.	6,699 0 0
C. Hope	7,289 0 0	J. S. Kimbarlay	6,627 0 0
T. Simms & Son	7,030 0 0	Goodman & Murkett	6,600 0 0
J. F. Booth & Son	7,009 0 0	R. Marriott	6,582 0 0
T. H. Kingerlee & Sons	6,987 0 0	G. Henson & Son	6,464 0 0
Beardsmore & West	6,974 0 0	T. Higgs, Northampton*	6,098 0 0

BARNET (Herts).—For converting earth closets into water closets, for the Governors of Queen Elizabeth's Grammar School for Boys. Mr. J. Ladds, architect, 93, Pemberton-road, Harringay, N.:—

	Cost of complete work. £ s. d.	Extra cost of 500-gal. tank. £ s. d.
G. Jennings & Co.	£180 0 0	£22 7 6
R. Goodman & Son	165 0 0	8 0 0
Pearson & Sons	163 15 6	3 10 0
Johnson & Co.	162 0 0	16 10 0
E. Young	160 12 0	—
Dean & Perkins	160 0 0	15 0 0
E. Frost	157 4 8	8 7 9
J. T. Randall	151 19 2	5 0 0
L. Lown & Co.	150 0 0	7 0 0
W. M. Butcher	149 0 0	9 5 0
W. Pavey & Sons	145 0 0	6 0 0
W. T. Briers	140 0 0	5 10 0
G. W. Matthews	131 2 0	4 10 0
E. G. Brown	127 18 6	13 5 0
W. Anderton	128 15 8	11 10 6
W. L. Watling	126 0 0	6 11 6
A. G. Chamberlain	125 0 0	6 0 0
J. Baughen	125 0 0	8 0 0
R. Brown Bros.	124 0 0	4 10 0
H. Barrows	116 0 0	—
McLaughlin, 13, Brecknock-road, London*	109 0 0	10 0 0
T. Story & Son	95 0 0	10 5 0

BECCLES.—For the erection of two detached houses, Grange Estate, Beccles. Mr. H. Steward-Watling, F.S.A., architect, Ipswich, Lowestoft, etc.:—

H. Hindes, at per schedule.

BLUNDESTON.—For erecting a Wesleyan Chapel, near Lowestoft, for Wesleyan Trustees. Mr. R. Scott Cockrill, A.R.I.B.A., Crossley House, London-road, Lowestoft. Quantities by architect:—

Spencer, Santo, & Co., Ltd.	£1,000 0 0	Moore & Sons	£811 0 0
C. Roper	948 0 0	Hawes & Son	794 0 0
C. R. Cole	936 0 0	J. Balls	776 12 0
R. C. Todd	920 0 0	T. H. Yelf	775 0 0
W. Wynes	875 6 3	B. G. Beech	765 0 0
Carter & Wright	849 0 0	A. G. Beckett, Oulton Broad*	757 12 6
W. J. Croft	847 10 0	H. Pearman	750 0 0
F. Button & Son	825 10 0		

BOVEY TRACEY.—For additions to Riley Farmhouse, Hennock, for Mr. J. Bawdon, and for farmhouse, Mr. S. Segar, architect, 24 and 26, Union-street, Newton Abbot:—

Farmhouse, Bovey Tracey (for Messrs. Daniel Wrayford & F. Amery).

J. Winsor	£594 15	F. J. Badcock, Ashburton*	£521 0
Wills Bros. & B. Parker	585 0		

Alterations at Riley Farm, Hennock.

Wills Bros. & B. Parker	£138 0	F. J. Badcock, Ashburton*	£117 10
J. Winsor	185 0		

CARLTON COLVILLE.—For the erection of a detached bungalow, Cotmer Estate. Mr. H. Steward-Watling, F.S.A., architect, Lowestoft, and at Elmhurst, Oulton Broad:—

King	£300	Youngs*	£250
Watkins	260		

CLENCHWARTON (Norfolk).—For erection of bullock-shelters and fencing, for Mr. Hugh Kerkham. Messrs. Walker & Walker, architects, 2, Lower Hill-street, Wisbech:—

Johnson & Son	£155 5	Tash & Langley	£150 0
F. S Flood	155 0	G. Hornigold, Terrington, Lynn*	135 10
J. Medwell	155 0		

DARLINGTON.—For erecting a villa in Cleveland-avenue. Messrs. J. P. Pritchett & Son, architects, 24 High-row, Darlington. Quantities by architects:—

Brick and Plasterer's and Joiner's Works: J. Johnson, Cleveland-terrace, Darlington‡	£645 7 2
Slating and Tiling: Lancaster Bros., Chesnut-street, Darlington	90 4 10
Plumber's Work: E. Smith, Blackwellgate, Darlington	100 5 0
Painting: W. Hoskins & Co., Ianson-square, Darlington	17 7 0
Electric Lighting and Bells: Lauson & Stobbart, High-row, Darlington	20 7 9

‡ Amended.

DENTON.—For erecting a new Council school to accommodate 250 children at Denton, near Gravesend, for Kent Education Committee. Mr. W. H. Robinson, Architect to the Committee:—

S. Wise	£3,898	Jones & Andrews	£3,265
T. W. Hooker	3,841	G. Gates & Sons	3,250
S. Edwards	3,800	W. H. Archer & Son	3,243
H. W. Martin	3,598	R. E. Nightingale	3,238
Brown Bros.	3,582	A. H. Fryd	3,232
Spencer, Santo, & Co., Ltd.	3,538	C. E. Skinner	3,217
T. Crossley & Son	3,416	F. Webster & Son	3,199
West Bros.	3,382	E. Bishop & Sons	3,192
A. S. Ingleton	3,382	E. Parett & Sons	3,160
J. Podger & Sons	3,358	Friday & Ling	3,150
L. Seager	3,350	A. E. Tong	3,073
Multon & Wallis	3,333	G. Baker & Son, Pelican Wharf, Stroud‡	3,059
W. F. Blay, Ltd.	3,299		
F. & G. Foster	3,296		

‡ Recommended for acceptance.

DEVONPORT.—For interior decoration of St. John the Baptist Church, for the Vicar, Wardens, and Church Council. Mr. Edgar M. Leest, architect, 14, St. Aubyn-street, Devonport:—

J. F. Prowse	£363 0	Pitchet & Son, Devonport*	£204 17 0
Horris & Sons	289 10	A. J. Osborne	192 19 6
Earl & Son	224 15		

DOVERCOURT.—For the erection of detached house, for Miss Hurst, Sunnyhill Estate. Mr. H. Steward-Watling, F.S.A., architect, Kingsway House, Dovercourt, etc.:—

Fisher & Woods	£550	Mormas	£475
King	485	Youngs*	472

[Entrance gates, fencing, and terrace walls at per schedule.]

DOVERCOURT.—For the erection of a detached house, St. Michael's-road, Dovercourt. Mr. H. Steward-Watling, F.S.A., architect, Kingsway House, Dovercourt, etc.:—

Fisher & Woods	£500	Mormas*	£375
King	395		

EALING.—For alterations and additions to No. 136, Northfield-lane, West Ealing, comprising double baker's oven and flour-loft. Messrs. Hamiltons, architects and surveyors, West Ealing:—

W. Brown	£212 0	C. Groom	£157 14
C. Webb	189 0	Harrison & Co., West Ealing‡	132 18
W. Barber	159 0		
Bird & Frost	158 0		

‡ Tender accepted subject to varied specification.

FELIXSTOWE.—For detached house, Priory-road, Felixstowe. Mr. H. Steward-Watling, F.S.A., architect, Felix-chambers, Felixstowe, etc.:—

Linzell, at per schedule.

FRODSHAM.—For new house, Lime-avenue Frodsham, for Mr. W. D. Ringrose. Mr. Samuel Davies architect, Frodsham:—

J. Littler, Frodsham* £580

IPSWICH.—For alterations and additions to premises, East-street. Mr. H. Steward-Watling, F.S.A., architect Ipswich, etc.:—

Watkins, at per schedule.

Digitized by Google

HALSTED.—For erecting an elementary school to accommodate 420 children, for Essex Education Committee (Halstead District Sub-committee). Messrs. Goodey & Cressall, architects, St. Peter's-chambers, High-street, Colchester. Quantities by Mr. J. Sydney Parmenter, Chelmsford:—

A. J. Suckling	£6,482	Kerridge & Shaw	£4,998
E Saunders	5,910	H. Smith	4,997
Dowsing & Davies	5,500	H. J. Linzell	4,997
G. Grimwood & Sons	5,497	G. Sharp	4,988
Z. Rogers	5,284	H. Everitt & Son	4,978
W. Bell & Sons	5,216	G. Dobson & Son	4,958
Rueben Shanks	5,175	Clark & Sons	4,945
W. C. Theobald	5,115	A. H. Fryd	4,857
F. & A. Willmott	5,091	Spencer, Santo, & Co., Ltd.	4,750
S. A. Kenny	5,085	Pudney & Son	4,728
J. S. Hammond & Sons	5,081	Mason & Son	4,675
A. E. Farr	5,068	H. Potter & Son, Chelmsford‡	4,647
T. Parkington & Son	5,000		

‡ Recommended for acceptance.

KETTON.—For lych-gate, etc. Messrs. Traylen & Son, architects and surveyors, 16, Broad-street, Stamford:—

Bowman & Sons	£301 10	Willmott & Sons	£235 0
Thompson & Co.	296 0	J. W. Rouse	238 8
Bell & Sons	261 0	E. Hibbins, Ketton*	233 0
J. W. Hilliam	259 14	W. Freeman	200 12
Rudd & Son	256 10	A. S. Roberts	194 6
S. F. Halliday	237 6		
J. Woolston	237 0		

KINSON (Dorset).—For building a brick bridge at Millhams Ford, for Poole Rural District Council. Mr. R. T. S. Seymour, District Surveyor, Wimborne, Minster:—

R. Elcock	£580 10 0	J. Lawford, Upper Parkstone*	£431 2 3
J. Smith	465 0 0		
H. Tryhorn	458 0 0		

LONDON, S.W.—For decorations, etc., at No. 9, Suffolk-street, Pall Mall. Mr. Frank C. Spiller, architect and surveyor, 82, Westbourne-park-villas, Bayswater, W.:—

J. S. Henry, Ltd.	£304 0	A. Moore & Co., Paddington*	£204 15 6
Hampton & Sons	297 0		
R. Coles & Son	229 18		

LONDON.—For painting, repairs to guttering, pointing of brickwork, and other work at their Workhouse and Infirmary, for the Guardians of St. Leonard, Shoreditch. Mr. F. J. Smith, F.R.I.B.A., Parliament-mansions, Victoria-street, S.W.:—

C. & D. E. Dearing & Son, Clarence-lane, Islington £1,279

OULTON BROAD.—For the erection of two week-end cottages, Garden Estate, Oulton Broad. Mr. H. Steward-Watling, F.S.A., architect, Lowestoft, and at Elmhurst, Oulton Broad, etc.:—

Meech* £450

POLLESBURY.—For the erection of mews, stabling, load houses, and store. Mr. H. Steward-Watling, F.S.A., architect, 153A, High-street, Colchester, etc.:—

Osborne, at per schedule.

ROMFORD.—For painting buildings at the Isolation Hospital, Rush Green, for the Joint Hospital Board:—

F. J. Dulley	£87 10 0	Sharpington & Co.	£59 0 0
C. R. Walton	84 17 0	Dean & Sons	58 10 0
J. Stokes & Sons	83 5 5	Woollaston & Co.	57 0 0
J. Hocking	79 0 0	General Building Co.	55 0 0
Dowsing & Davis	78 15 0	E. H. & G. Hilliard	54 10 3
A. C. Westgate	76 0 0	E. Carter	53 14 0
G. A. Rowley	74 5 6	B. Richards	53 10 0
J. S. Hammond & Sons	74 0 0	W. L. Robison	53 10 0
J. Newlin	72 15 0	S. Squire	52 9 2
W. F. Guppy	70 10 0	Bane & Bulley	48 10 0
P. R. King	67 0 0	J. J. Richards, Brixton*	47 0 0
E. G. Bratchell	65 14 6		
Partridge Bros.	65 10 0		

SOUTHEND-ON-SEA.—For erecting a new school, Bournemouth Park-road Council School, for the Education Committee. Mr. P. Brockbank, Architect, County-chambers, Weston-road, Southend-on-Sea. Quantities by Mr. G. T. G. Wright, York-road:—

E. Leaney	£5,550 0	S. E. Moss & Co.	£5,447 8 9
W. Houghton	6,389 0	Brown Bros.	5,397 0 0
W. J. Ballard & Co.	6,199 0	J. S. Hammond & Son	5,358 0 0
J. C. Flaxman	5,997 0	F. E. Whur	5,354 0 0
F. E. Woodhams	5,899 0	W. E. Davey	5,321 0 0
A. R. Whur	5,897 0	H. W. Grainger, Southend-on-Sea*	5,184 10 0
F. & E. Davey, Ltd.	5,877 0		
E. & B. H. Davey	5,832 0		
F. Davey	5,543 0		

SOUTHEND-ON-SEA.—For alterations and additions to the boys' and girls' departments of the Southchurch Hall Council School, for the Education Committee. Messrs. Burles & Harris, Architects, Clarence-street:—

H. W. Grainger	£765	F. & E. Davey, Ltd.	£640
H. R. Wilkinson	713	S. E. Moss & Co.	620
F. E. Whur	680	J. C. Flaxman, Southchurch-road*	600
F. Davey	644		

SOUTH NORMANTON.—For taking up an old brick culvert and building a new one of concrete tubes, for the Blackwell Rural District Council. Mr. H. Silcock, Surveyor, 67, Westgate, Mansfield:—

C. Fulcher	£92 0	Lane, Bros., Hermitage Works, Mansfield*	£48 15
C. E. Cox & Co.	59 6		
H. Ashley	58 10		

STONE.—For Stallington-lane sewerage, Blythe Bridge, for the Rural District Council. Mr. J. J. Chapman, surveyor, Stone:—

J. Taylor & Son, Basford, Stoke-on-Trent‡ £221 5 8

‡ £20 additional if certain pipes are 9-in. instead of 6-in.

TAUNTON.—For rebuilding the King's Arms, North Town, for Messrs. Starkey, Knight, & Co., Ltd. Mr. G. C. Strawbridge, architect, 25, Alma-street, Taunton:—

Gleed Bros.	£1,279 0 0	Vickery Bros.	£849 17 6
F. W. Henderson	1,191 9 8	Moggridge & Sons	849 15 0
B. Way	995 5 0	J. Maddock, Taunton*	849 0 0
F. Small	933 0 0		

WANDSWORTH.—For extension of heating apparatus at the hall of Tooting Home, Church-lane, Tooting, for the Guardians:—

Vaughan Engineering Installations, Ltd.	£232 0 0
Farringdon Works & H. Pontifex & Sons, Ltd.	209 10 0
Kennington Engineering Works	180 0 0
Heating and Engineering Co.	172 10 0
L. Norden	164 0 0
W. J. Fryer & Co.	158 10 0
H. & C. Davis & Co., Ltd.	148 7 0
Russell & Co.	145 0 0
W. Tucker & Co.	144 2 6
Tilley Bros.	144 0 0
F. H. Belben & Co.	143 10 6
J. & F. May	138 10 0
C. G. Reed & Sons, Ltd.	137 12 0
Moorwood, Sons, & Co., Ltd.	134 0 0
Wenham & Waters, Ltd.	133 0 0
H. G. Power & Son	132 10 0
F. A. Norris & Co.	132 10 0
Comyn Ching & Co., Ltd.	132 0 0
Z. D. Berry & Sons	130 0 0
C. F. H. Nightingale & Co.	124 15 0
General Iron Foundry Co., Ltd., 43, Upper Thames-street, London*	122 0 0

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

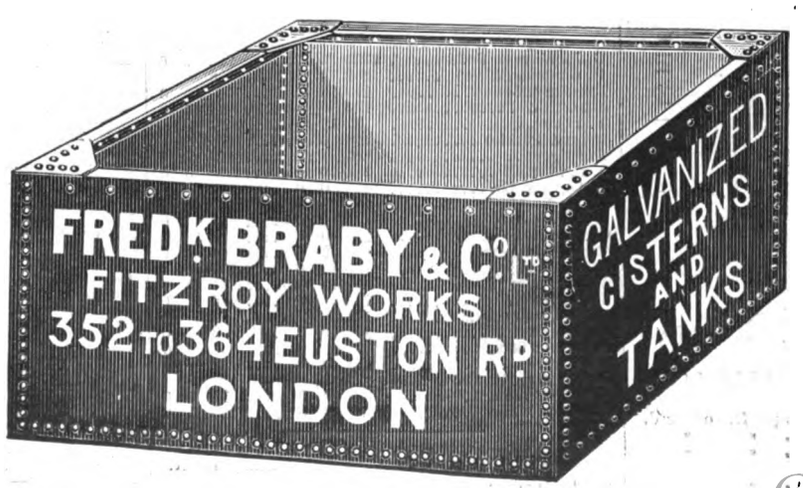
GRICE & CO., Ltd., STONE MERCHANTS.
ADDISON WHARF, 101, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

ALEX. FINDLAY & CO., LTD.,
MOTHERWELL, SCOTLAND.
STEEL ROOF and BRIDGE BUILDERS, STRUCTURAL ENGINEERS.
CONTRACTORS FOR THE
MAIN BUILDINGS AND GREAT STADIUM
For the FRANCO-BRITISH EXHIBITION, London, 1908.
LONDON OFFICE: 9, VICTORIA STREET, S.W.

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor,
Oakeley-Portmadoc.
BEST WORK ONLY.
"RUSTIC BROWN"
Roofing Tiles a Speciality.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company.
5, LAURENCE POUNTNEY HILL, CANNON STREET, E.C.

ALSO AT DEPTFORD, LIVERPOOL, BRISTOL,



GLASGOW, FALKIRK, BELFAST, & DUBLIN.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3475. SEPTEMBER 11, 1909.

Contents.

	PAGE
PARLIAMENT AND THE HOUSING AND TOWN PLANNING BILL	279
NOTES	281
THE INFLUENCE ON ARCHITECTURE OF MODERN METHODS OF CONSTRUCTION (*CONCLUDED*)	282
LIMITATIONS	285
BERKSHIRE COUNTY OFFICES COMPETITION	285
ENGINEERING DAY AT THE IMPERIAL EXHIBITION	286
THE BASSET AND MANSEL TOMB, LLANTRITHYD CHURCH	286
THE DESIGN AND WORKING OF A MODERN DESTRUCTOR	288
MASTER BUILDERS' ASSOCIATIONS, ETC.	289
MEETINGS	290
FIFTY YEARS AGO	290
ILLUSTRATIONS:—	
CHURCH OF ST. ALFEGE, GREENWICH	290
CATHEDRAL CHURCH OF ALL SAINTS, KHARTOUM	291
PROPOSED LONDON GOODS CLEARING HOUSE	291
HALL'S ALMSHOUSES, BRADFORD-ON-AVON	292
WOOD FLOORS IN AUSTRALIA	292
LEGAL COLUMN	293
LONDON AND DISTRICT BOROUGH COUNCILS	293
PROJECTED NEW BUILDINGS IN THE PROVINCES	294
COMPETITION NEWS	294
TRADE CATALOGUES	295
BOOKS RECEIVED	295
CORRESPONDENCE:—	
REINFORCED CONCRETE	295
DOMESTIC ENGINEERING	295
GENERAL BUILDING NEWS	295
STAINED GLASS AND DECORATION	296
APPOINTMENTS	296
SANITARY AND ENGINEERING NEWS	296
MISCELLANEOUS	296
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	298
PATENTS	300
SOME RECENT SALES	300
PRICES CURRENT	300
TENDERS	301

Illustrations.

LATE RENAISSANCE CHURCHES OF LONDON.—IX. ST. ALFEGE, GREENWICH.

CATHEDRAL CHURCH OF ALL SAINTS, KHARTOUM. MR. R. WEIR SCHULTZ, ARCHITECT.
1. EXTERIOR VIEW AND PLAN.
2. INTERIOR VIEW.

PROPOSED LONDON GOODS CLEARING HOUSE. MR. R. STEPHEN AYLING, F.R.I.B.A., ARCHITECT.

Illustrations in Text.

	PAGE
THE BASSET AND MANSEL TOMB, LLANTRITHYD CHURCH, GLAMORGAN	287
PLAN OF ST. ALFEGE, GREENWICH	290
HALL'S ALMSHOUSES, BRADFORD-ON-AVON, WILTS	292

Parliament and the Housing and Town Planning Bill.

THE debate on the two last days of August on the Housing and Town Planning Bill affords a rather characteristic example of the spirit in which practical measures of this kind are discussed in Parliament. The debate mainly turned not on the question of how much practical good, in the amelioration of dwellings and the improvement of towns, could be achieved by the Bill, but on questions of (1) party politics, (2) safeguarding of vested interests, and (3) the legal propriety of the machinery proposed. It was surely mainly party spirit which induced Mr. Burns to oppose and even ridicule clause 30, providing for a systematic quinquennial inspection and report on every dwelling house, which had been originally proposed by a member of the Opposition; unless indeed he was afraid that the opposition to the cost of this scheme might prejudice the whole Bill. The general tenor of the Bill is drastic and high-handed to a remarkable degree; why did Mr. Burns, in regard to this clause alone, suddenly turn round and become the advocate of half-measures? The rights of railway companies to remain undisturbed in the privileges they had acquired were championed with a great deal of eloquence; and the legal provision (or, as some members thought, want of provision) for appeal against the action contemplated in the Bill was sharply criticised. Lawyers, we believe, are scandalised at the Bill in this respect; but the improvement of Housing is a question of something more than legal formalities. The fact is that nothing but a very strong measure will avail to bring about a real move in the improvement of Housing and Town Planning; and the strong measure has been provided.

At the outset of the debate Sir F. Banbury attempted to knock the backbone out of the Bill by moving the rejection of Clause 1, which is as follows:—

> 1. Part III. of the Housing of the Working Classes Act, 1890 (in this part of this Act referred to as the principal Act), shall, after the commencement of this Act, extend to and take effect in every urban or rural district, or other place for which it has not been adopted, as if it had been so adopted.

To appreciate its full effect this clause must be taken in connexion with Clause 10, which provides that —

> 10. (1) If after holding a local inquiry with reference to the matter, the Local Government Board are satisfied—
>
> (*a*) As respects any rural district on the complaint of the council of the county in which the district is situate, or of the parish council or parish meeting of any parish comprised in the district, or any four inhabitant householders of the district; or (*b*) as respects any county district not being a rural district on the application of the council of the county in which the district is situated, or of four inhabitant householders of the district; or (*c*) as respects the area of any other local authority on the application of four inhabitant householders of the area;
>
> that the local authority have failed to exercise their powers under Part II. or Part III. of the principal Act in cases where those powers ought to have been exercised, the Board may declare the authority to be in default, and may make an order directing that authority, or, if the Board think fit, in any case where the authority in default is the Council of a county district, the County Council, within a time limited by the order, to carry out such works and do such other things as may be mentioned in the order for the purpose of remedying the default.

It is the four householders who were the great bugbear to the member for the City of London, and we think a larger number should have been named. But Mr. Burns's explanation, that it would free the rural district councils from the shackles of the County Councils, and that in fact "only nine of these rural district councils had been able to put the housing powers into operation owing to the restrictions imposed upon them by the County Councils," is a sufficient reply; and we have no doubt he is right in saying that "it was not a light or easy thing to get your villagers to complain about anything, and if they did complain, their request was subjected to local inquiry by the inspector of the Local Government Board, and it was not compulsory on that Board to adopt the report of their inspector." This argument is clenched by Sir C. Schwann's testimony that his experience as a member of the Rural Housing Society was that the Local Government Board had no power, at present, to enforce on the district councils the provision of cottages or the removal of insanitary conditions. It is evident, therefore, that stronger measures were necessary to set housing reform in motion.

The long discussion which was started by Mr. Cave in reference to Clause 2, taken in connexion with the First Schedule ("Provisions as to the Compulsory Acquisition of land by a Local Authority for the purposes of Part III. of the Housing of the Working Classes Act, 1890"), turned mainly on what seems to us a mistaken view in regard to the position of the Local Government Board in the matter. The complaint is that in a case of compensation for compulsory purchase the Local Government Board is to appoint an arbitrator, who is to decide after hearing objections, and the criticism by one member after another was that the Board was appointing an arbitrator in a case to which the Board would be itself one of the parties, the Board being behind the Local Authority which has obtained powers for compulsory purchase.

This is one of the points that lawyers appear to take great exception to; but surely it is a case in which we may appeal from law to commonsense. Technically, the Local Government Board might be considered as a party to the case; but surely no one seriously supposes that the Board would reason or act as an interested party; it is an independent public authority acting for the common good. An exception might be made, in a case involving a very large and important

Digitized by Google

property for hearing the owner's case by counsel and witnesses (there is provision for such exceptional cases in Section 8 of the Schedule), but in the majority of cases of compulsory purchase the award of the arbitrator appointed by the Board would probably be practically the same as would be arrived at by a procedure in Court with counsel and witnesses, and would mean an immense saving of time and money to all concerned.

Mr. McArthur's attempt to introduce into Clause 2 a proviso exempting from an order for compulsory purchase "all land which at the date of that order has been acquired by the owners thereof for the purposes of a railway dock, canal water, or other public undertaking," raised a point worth discussion, seeing that in such cases the land would mostly have been acquired by compulsory powers in the first instance, and it might seem rather illogical to employ fresh compulsory powers to re-purchase it for another purpose. But on the whole the reasons for refusing to embody this exemption in the Bill seem to be sufficient. For practical reasons the case is not likely very often to arise, land close to railways not being usually much sought after for housing; railway companies may have acquired more land than they have any near prospect of using, and which would be more useful for another purpose; and (which is the most important point of all) a Town Planning Improvement Scheme on a large scale may even require, for its full development, a change in the run of a railway or the position of a station, and without power to insist on this the Planning Scheme might be injured or rendered nugatory.

Clause 30, which occupied two pages and a-half of the draft of the Bill under discussion, and provides for a Quinquennial Survey and report on every house in a district, was ruled out, after a long discussion initiated by Mr. Cave, by a majority of 121 to 75, the amendment to omit it, as already noted, being supported by Mr. Burns. We made a note last week in favour of his arguments, but the experience since given in a letter to the *Times* by Mr. T. C. Horsfall, who has exceptional acquaintance with the subject, suggests that more might be said in favour of the scheme than we had realised. Mr. Horsfall affirms that the system of inspection of all small dwellings which is in use in various parts of Germany has proved so satisfactory that the Prussian Government have made it an integral part of their last Housing Bill. The following is worth quoting from Mr. Horsfall's letter:—

"Inspection has been carried out more systematically and thoroughly in Hessen than anywhere else, because a central inspector was appointed by the Hessian Government, one of whose chief duties is to use every effort to get inspection carried out efficiently in every town and country place in the land. Wherever inspection is well done an immense number of causes of mischief are found, many of which are in dwellings the outsides of which give no indication of there being anything wrong within. The excellence of the work of the Hessian Central Inspector, Herr Gretzschel, causes him to be asked to give addresses on the Hessian system in many parts of Europe. Speaking in Vienna lately, he said that, though the dwellings in Hessen are, as a rule, better than those in many other parts of Germany, and Hessen is only about one-fiftieth part of the whole of Germany, some 10,800 defects had been found and dealt with in Hessian dwellings in the four years 1904 to 1907."

And in a later part of his letter Mr. Horsfall adds, in regard to the question of cost and of the number of inspectors that it is supposed would be required:—

"In Dresden, which has 136,000 dwellings and over 400,000 inhabitants, there are only twelve inspectors of dwellings. Ground-plans of all the dwellings have been made, and in future an examination of all the dwellings can easily be completed in about six months."

On this evidence we should doubt whether there are really so many difficulties in the way of universal inspection as has been represented, and whether the country has not lost something by the abandonment of the clause.

We now come to the second section of the Bill, concerned with Town Planning. The clause commencing this part of the subject (Clause 53 in the Bill as discussed, 54 in the amended edition) is so important and far-reaching that it may as well be quoted at length:—

"A town-planning scheme may be made in accordance with the provisions of this Part of the Act as respects any land which is in course of development or appears likely to be used for building purposes, with the general object of securing proper sanitary conditions, amenity, and convenience in connexion with the laying out and use of the land, and of any neighbouring lands.

(2) The Local Government Board may authorise a local authority within the meaning of this Part of this Act to prepare such a town-planning scheme with reference to any land within or in the neighbourhood of their area, if the authority satisfy the Board that there is a *primâ facie* case for making such a scheme, or may authorise a local authority to adopt, with or without any modifications, any such scheme proposed by all or any of the owners of any land with respect to which the local authority might themselves have been authorised to prepare a scheme.

(3) Where it is made to appear to the Local Government Board that a piece of land already built upon, or a piece of land not likely to be used for building purposes, is so situated with respect to any land likely to be used for building purposes that it ought to be included in any town-planning scheme made with respect to the last-mentioned land, the Board may authorise the preparation or adoption of a scheme including such piece of land as aforesaid, and providing for the demolition or alteration of any buildings thereon so far as may be necessary for carrying the scheme into effect.

(4) A town-planning scheme prepared or adopted by a local authority shall not have effect unless it is approved by the Local Government Board, and the Board may refuse to approve any scheme except with such modifications and subject to such conditions as they think fit to impose.

(5) A town-planning scheme, when approved by the Local Government Board, shall have effect as if it were enacted in this Act.

(6) A town-planning scheme may be varied or revoked by a subsequent scheme prepared or adopted and approved in accordance with this Part of this Act, and the Local Government Board, on the application of the responsible authority, or of any other person appearing to them to be interested, may by order revoke a town-planning scheme if they think that under the special circumstances of the case the scheme should be so revoked.

(7) The expression land likely to be used for building purposes shall include any land likely to be used as, or for the purpose of providing, open spaces, roads, streets, parks, pleasure or recreation grounds, or for the purpose of executing any work upon or under the land incidental to a town-planning scheme, whether in the nature of a building work or not, and the decision of the Local Government Board, whether land is likely to be used for building purposes or not, shall be final."

An absurd attempt was made to obtain the omission of the words, "The Local Government Board may authorise" in sub-section 2, apparently with the idea of diminishing that authority of the Board which many members of Parliament seem so much afraid of; but it was rightly urged by Mr. Burns that a local authority ought not to be allowed, without the sanction of a central authority, to promote a town-planning scheme which might affect other local authorities, and interfere with the rights of private owners; a conclusion which is mere common sense and common justice. There followed a second attempt to rule railway companies and their property out of the operation of the Act, which met with no more success than the first. A more important point was the amendment of Sir F. Banbury to remove from sub-section 3 the words "a piece of land already built on." He maintained that if these words were allowed to remain their effect would be to enable any local authority who fancied that they were endowed with great architectural ability practically to demolish the better part of a town. Mr. Burns argued, *per contra*, that it would be absurd if an important road improvement were to be stopped because it cut over property on which was erected a "pigstye, or a tool-shed, or the outhouse of a golf club." Both suppositions are rather extreme. But while Sir F. Banbury's dread of the demolition of "the best part of a town" by a high-handed æsthetic authority is not likely to be realised, the power to compulsorily demolish existing buildings to a considerable extent might often be of the greatest real benefit to a town, and a sacrosanct character attaching to such buildings might prevent schemes of the greatest importance being carried out. There are few towns where there are not blocks of buildings which it would be a real advantage to the town to remove; and without the power to do this effective schemes of town improvement would often be quite impossible; as Viscount Morpeth said, "without this power town-planning would be a sham." The majority of the House evidently thought the same and it is satisfactory to add that the amendment was lost by 196 to 49.

An amendment for which more might be said was that of Mr. Cave, who proposed in sub-section 7 to omit the final words—"and the decision of the Local Government Board, whether land is likely to be used for building purposes or not, shall be final." This certainly seems a rather high-handed clause; but at the same time we cannot understand Mr. Cave's special objection: "he held strongly that the decision whether land was likely to be used for building purposes ought not to be that of an interested authority, but should be that of an independent person or authority." On principle he is perfectly right, but one must again ask, why is the Local Government Board assumed to be "an interested authority"? Surely it in fact represents exactly that "independent authority" which Mr. Cave was demanding. Mr. Burns replied that the acceptance of the amendment would destroy the vital principles of the Bill—namely, economy and despatch, and the opportunity of coming to an agreement without recourse to arbitration or law at all.

In short, this is a strong Bill drawn up by a strong man, who wants something done: and when we consider how slow public improvements move in this country; how much housing improvement is required everywhere; what a field there is for improvement in the laying-out of towns, and how difficult it is to get any such improvement schemes

Digitized by Google

started, we cannot but think that the passing of this Bill would put a new life and vigour into schemes of town improvement generally. It is a somewhat despotic Bill, in comparison with the usual character of English legislation; but it has been found in other countries, before now, that there is nothing like a benevolent despotism (or even a despotism that is not benevolent) for initiating and completing public improvements.

NOTES.

The Trade Union Congress.

THE Trade Union Congress was opened at Ipswich on Monday, Mr. Shackleton, M.P., delivering the Presidential address for the second year in succession; and it is satisfactory to note that on this occasion the precedent of the past three years was followed, and the address was marked by a restraint and moderation which used to be conspicuous by its absence. The President remarked with truth that trade unionism no longer confined itself to purely trade union matters, but adopted a wider view of its sphere of action, and he expressed approval generally of the legislative action of the present Government, including the Finance Bill. His observations on the decision of the House of Lords in Conway *v.* Wade (see the *Builder*, August 7) were marked by some discrimination. He accepted that decision as in no way lessening the efficiency of the Trade Disputes Act from the trade unionists' point of view, but as rather strengthening the hands of the unions. There can be little doubt that to hold every mischief-maker or outsider within the protection of the Act would soon have resulted in the amendment of an Act which is open to serious criticism however narrow may be the interpretation placed upon it. Upon the case still pending in the House of Lords, which relates to the legality of the Parliamentary levy, the President wisely refrained from comment. He welcomed the Oxford extension of education to working men. We shall give a more detailed notice of the Congress after the close of its deliberations, but we may observe that one of the most interesting features of the opening proceedings was the observations of a Swedish delegate, a Member of the Swedish Parliament, on the Swedish strike. He stated that the capitalists had proved to have great powers of resistance, and they could not be starved out, and, although he stated other methods would have to be found for enforcing the strikers' views, he admitted that a general strike should never be embarked upon save as a last resource. The trade union leaders in this country are likely to agree with him, as they now wisely show a tendency to discourage strikes as a means of attaining their ends.

The Institute Library.

AN architect writes in regard to the Library of the Institute of Architects: "I believe if an opinion was taken on the subject of closing the library in August, it would be easily settled to keep it open." Our correspondent means, I suppose, that the immense majority of votes would be on that side. Ours certainly would; and it is a matter which ought to be seriously considered by the Institute Council. To close an important library, and one which in its special class of subject is unique in London, for a whole month, is what we should call a very antiquated policy, and often must give rise to serious inconvenience. All architects and students of architecture do not take their holidays in August; some probably go out of town or abroad in September; and it is rash to assume that in August there can be no one in town wanting the library. And nothing is more vexatious and irritating than to come to a library for a reference to a book which one wants immediately, and find the library closed. We certainly think it is time that this should be altered, and the library kept open all the year round. We may add that the hours in the evening might very well be extended.

Houses "Unfit for Inhabitation."

THE Liverpool stipendiary magistrate had recently to decide a question of some importance as to a case of houses against which a closing order had been issued in respect of the houses being "unfit for human habitation." An application was made on behalf of the owner of the property to determine the closing order, on the ground that alterations had been made in the houses at considerable expense. Dr. Hope, the Medical Officer of Health, opposed the granting of the petition on the ground (1) that the houses were overcrowded on the land, and (2) that what had been done was inadequate. What he especially feared was that the abandonment of the closing order would be taken as rendering these houses a kind of standard of what was required by the authorities, and that the standard was much too low. After some discussion, the magistrate, Mr. Kinghorn, said he could not rule that the houses were now (after the improvements) uninhabitable, but the time might come, under different conditions, when they ought to be closed; and the closing order was abandoned for the present on that understanding. The dilemma is one that may reappear from time to time, when the question lies between not pressing too hardly on a landlord, and at the same time not allowing the existing state of the property to be quoted as a minimum standard of habitable condition. The Liverpool magistrate seems to have taken the wisest course in the matter.

Smoke Prevention.

A Bulletin published by the United States Geological Survey gives the results of tests conducted on boiler plants in thirteen large cities as well as on experimental installations at St. Louis and Norfolk. The general conclusions to be drawn from the results quoted may be thus briefly summarised: Smoke prevention is quite possible—a fact demonstrated by the operation of many furnaces and stokers, where properly installed and carefully worked; no individual type of mechanical stoker is equally valuable for all kinds of coal; although hand-fired furnaces can be operated without objectionable smoke, the human element is so variable a factor that it should be entirely eliminated; the small boiler user is no longer dependent upon hand-firing, as mechanical stokers can be procured with a guarantee of high economy with reduction of labour for the fireman. As a general result of their study, covering the inspection of more than 500 steam boiler plants, the writers of the Bulletin come to the conclusion that smoke prevention is both possible and economical. The report is one of direct interest to all who are labouring for the suppression of smoke in Great Britain.

The Waste of Natural Resources.

MR. DOANE, the engineer of the American Electric Lamp Association, has recently read an interesting paper on the necessity of husbanding the natural resources of America. He divides the natural fuels into four classes, namely timber, petroleum, natural gas, and coal. He states that owing to the amount of timber used and the tremendous losses due to forest fires, the United States takes at least three times as much from the forests as their yearly growth. The question has become pressing as the price of lumber has increased 50 per cent. during the last eight years. Equal wastefulness of natural resources is shown in the consumption of petroleum, in allowing a billion cubic feet of natural gas to escape daily, and in using up the coal beds. Evidence is adduced to prove that in less than a hundred years the great coal beds of America will be exhausted. All methods, therefore, of preventing this waste should be encouraged. The recent enormous improvements in the efficiency of gas and electric lighting should appreciably diminish the consumption of fuel. These improvements have the effect, however, of seriously diminishing the receipts of electric light undertakings, owing to the old scale of charges for the light being maintained. Several new systems of charging which have come into use in America are described. They seem to us to be modifications of systems which were familiar to English electricians in the early days of electric lighting. In addition to the meter-bill a fixed sum is paid per annum for every lamp installed, and sometimes a small fixed charge for each consumer as well. These methods are more equitable than the ordinary systems of charging, but experience in this country proved that many consumers found difficulty in understanding the reasons for these complicated tariffs, and were haunted with the suspicion that they were partly paying for their neighbours' electric light.

Irrigation in Victoria.

THE early history of irrigation in the Australian State of Victoria was marked by errors of agricultural origin which led to results of rather discouraging nature. During recent years the Government have been occupied in reconstructing irrigation works designed for isolated holdings and in completing new channels so as to provide for the supply of water in a more scientific manner to all the lands within given areas. The works in progress at the present time will provide for the irrigation of some 250,000 acres, in addition to the lands already enjoying regular supplies, and should have the effect of adding greatly to the prosperity of the country. One satisfactory feature of the State irrigation works is that a return of 4 per cent. was made last year on the

Digitized by Google

capital expenditure. Moreover, there is reasonable hope that the works in progress will be equally successful from the financial standpoint. This aspect of the irrigation question is very important, because the further extension of the existing system depends greatly upon the possibility of avoiding the imposition of heavy burdens upon the taxpayer.

The Wiesen Viaduct, Switzerland. AN interesting piece of masonry work now in course of completion is the viaduct over the Landwasser, a stream between Wiesen and Filisur. Designed to carry a new section of the Rhätische Bahn through the Davos-Landwasser Valley, the structure comprises five arches, one with the span of 182 ft., at the height of 300 ft. above the stream, and four 65 ft. arches at the same elevation. In order to provide for constructing the main span a steel trelliswork bridge, 3 ft. wide, was thrown across the stream and supported by steel cables anchored to the abutments. The centring for the arch is an imposing structure rising from the rocky banks of the stream. Although of smaller span than many masonry arches elsewhere, the great central arch of this viaduct is unsurpassed in respect of height. Concrete with a facing of granite has been used throughout the work, owing to the scarcity of reliable stone in the locality.

British Pavilion, St. Louis Exhibition. THE British Pavilion at the St. Louis Exhibition, as some of our readers may remember, was designed by Messrs. Ernest George & Yeates as a reproduction of Wren's Orangery at Kensington Palace. The building, which was carried out by Messrs. Trollope and Colls & Sons, is to be retained in its position, and is to form, with some internal alterations and additions, the new quarters of the St. Louis School of Fine Arts. It is nominally the "temporary" quarters, it being the intention of the Board of Control of the Washington University ultimately to build a new Art School when the old premises have been sold; but as it seems to be expected that this intention will not be carried out before ten years at earliest, the Exhibition Pavilion will have a pretty good lease of permanence, and appears to be locally regarded as an admirable building for the purpose. That this is the only one of the Exhibition buildings which has been retained for practical use speaks well for the English architects and English contractors who respectively designed and carried it out.

Whitton Park, Hounslow. IT appears that the negotiations for the preservation of the park as a public pleasure-ground will result in its acquisition, at a reduced price of 8,000*l.*, on the joint behalf of the Twickenham and the Heston and Isleworth district councils, subject to the demolition of the historic mansion by the vendors. The grounds, of about 44 acres, and the house have been latterly rented by a local club. The park and gardens were formed out of some cornfields on the verge of Hounslow Heath by Archibald, Earl of Hay, who in 1743 succeeded his brother as third Duke of Argyll. The Duke built the house, laid out the fish-ponds, bowling-green, orange walk, etc., and planted a great variety of exotic trees and shrubs. He raised from seed the cedar trees, including the fine avenue, some 400 yds. long, in 1724-6. After his death in 1761 the estate passed through many hands, and was ultimately bought by a Mr. Gostling, who divided it, selling the house with a large part of the grounds to Sir William Chambers, the architect, and converting the conservatory for his own occupation. Chambers altered the house and lived there for many years. He restored the Duke's observatory tower, and, as he did at Kew, erected in the grounds some temples, with one of Æsculapius, a Roman bath, together with statues, and "ruins." In the tympanum of the pediment of the tetrastyle portico was placed a bas-relief by Dere of the Titanomachia; in the grounds was Cibber's marble group—since removed to Stowe—of a Highland piper and his dog, commemorating an incident related by De Foe of the Great Plague. The *Gentleman's Magazine*, 1812, says that Chambers set up in the gardens portions of the screen from the chapel of Denmark (Somerset) House, Strand.

The Monks' Barn, Peterborough. IT is stated that Mr. Fox, F.S.A., has offered to the Peterborough City Council the timbers of the old tithe barn, appertaining to what was once the Abbey of Medehamsted, now the Cathedral of Peterborough. The barn, which stood in Boroughbury one mile distant from the abbey, was sold ten years ago—the materials comprising timbers which it is believed were cut on the Milton estate, and three stone arched doorways. The building measured about 145 ft. by 31 ft. within, the area being divided into two low aisles and a lofty nave by timber posts, 20 ft. long and 14 in. square in section, and framing, which carried a high-pitched roof by a single span. On one side were two transepts, having large end and two side doorways, arched, and with moulded jambs. Built in, it would appear, the latter half of the XIIIth century, the barn exceeded in size the similar and later structure at Glastonbury, and almost equalled that at Bradford-on-Avon. At the time of its being dismantled the fine relic had lost the walls and roofing of the main building, but the wooden framework, constructed without iron nails, stood solidly as of old, a monumental specimen of carpentry of more than 600 years ago.

Rood Screen, St. Buryan's. IN our issue of September 26 last year we gave a description, with one or two sketches, of the remains of the ancient rood screen in St. Buryan's Church, Cornwall, which must have been, when complete, one of the most remarkable pieces of work of the kind in the country. On re-visiting the church this year we found that the lower panels of the screen, which used to stand in front of the chancel, and the portion of the elaborately carved cornice which we had found fixed on the south side of the chancel, had disappeared. From the vague explanation of the church attendant we gathered that they had been sent away to form models for, we presume, a complete restoration of the screen. This is spirited, but at the same time rather alarming. It is a question whether the old fragments would not be more interesting and valuable left just as they were, instead of being incorporated (as we presume is the intention) with modern imitations of the old work. At all events, we hope the ancient work is not to be tampered with, or endeavours made to "restore" what is left of the colouring on it. The authorities of the church would do well to re-assure us on that point.

THE INFLUENCE ON ARCHITECTURE OF MODERN METHODS OF CONSTRUCTION.*

Nascent Architecture.

Having discussed the influences attendant on architectural development, the trend of construction, the new materials, the increasing extent to which architecture is becoming indebted to science, ground has been cleared rendering it possible to deal with the architecture which, so far as we can judge, is now being evolved. Robert Louis Stevenson, in his characteristic essay on "Some Technical Elements of Style in Literature," states that in this our English tongue there are greater subtleties in the highest form of prose than that of verse. In the latter instance, he points out, the pattern is fixed, the limitations of versification are well recognised, while in the case of prose the web or pattern itself has to be formed at one and the same time as occurs the marshalling of facts and theories and their introduction in an ordered procession best calculated to produce a logical and lucid effect.

While not many of us are likely to ascend with Stevenson to such giddy heights of sensitiveness in prose formation, it yet appears that an interesting analogy exists in connexion with our architectural work. Most past styles of building may be considered to have belonged to verse architecture. Here recognised forms of treatment, of lintel and column, of arch and pier, of vault and dome, are equivalent to the iambics, trochees, anapæsts, and other feet less frequent in occurrence, with which are formed the varying patterns of verses. We in the present age are in the position of hardly knowing what restrictions exist; ours is an architecture possessing all the freedom and possibilities of prose and yet all the obstacles present in such an indeterminate structure against the production of great artistic result.

As the historic forms of treatment are of doubtful applicability, if any real strength in modern architecture is to be achieved it must be on the basis of the logical necessities of construction. In spite, however, of the attention which is being paid by many to constructive science there is a distinct danger that, as the word "impossible" comes to be almost erased from the structural dictionary sound and logical construction will be of less frequent occurrence, for the designer will know that, no matter what he proposes, it can in some manner, bad or worse, be executed.

Here our analogy may again be taken up. Although in ordinary prose it is possible, from the purely practical standpoint, satisfactorily to express a sequence of ideas by means of a set of disjointed sentences, this is but slovenly workmanship. The precision of good prose composition, due as it is to conformity with logical rules and restrictions, appeals to everyone. All admit the value of forceful and lucid reasoning, and all to a greater or less extent feel the beauty and impressiveness of "the chime of fair words and the march of the stately period." In a similar way, although it is possible under modern conditions for construction to be carried out in any clumsy and short-sighted

* Concluded from last week, page 265.

Digitized by Google

manner, there must yet be definite laws upon which all sound construction should necessarily be based. Once these laws are ascertained and are allowed to form the true basis of modern construction, and consequently of architecture, a sound position in both art and construction will have been attained.

Time, no doubt, will enable us better to appreciate our position and discover the general lines due to real constructive necessities to which our architecture will do well to conform. At present, however, all that we have to direct the course of our work are the old forms of architecture, many of which, used in connexion with modern construction, have but an archæological significance, and the lately evolved economic rules of structural engineering, instinct as yet with no artistic life.

Chief among these latter are those which have been found to govern the spacing of stanchions in steel construction. With loads of ordinary intensity there is a recognised spacing, from 14 ft. to 20 ft., to depart from which will usually lead to uneconomic design. This is one of the elements forming the pattern of that class of architecture in which steel occupies chief structural place. Not, however, that an absolutely fixed rule should here apply; this would savour of the lifeless rigidity of engineering science. In architecture, while the rules of construction should operate in determining the main scheme of the structure, it is the perogative of art to vary both outline and detail where desirable. Thus there may be the provision of greater height to secure proportion, a wider spacing of supporting members here, a lesser spacing there, and a hundred other modifications of the plain construction. By this means a building is made not only to fulfil, but to demonstrate its purpose, and to be of both practical and æsthetic value. As regards the spacing of reinforced concrete piers, reliable rules have yet to be evolved. Further experience will determine the question whether a wider spacing than that of steelwork is desirable. Such wider spacing may appear justified by reason of the fact that in a reinforced concrete beam a very considerable proportion of the expense comes under the head of temporary "false-work," and that the cost of this does not increase proportionately with the further strength obtained by an increase in the depth of the beam. On the other hand, however, the weight of a beam of such material is in itself a considerable item, in addition to the load it may have to carry, and beams of great span may there be found undesirable.

But these considerations of pier and stanchion spacing are, after all, purely economic. There are few constructional difficulties in the way of enormously increasing the present customary spacing, it is only the additional expense which acts as a deterrent. Thus we see that in this and other respects such restrictions as we may possess are of a much less arbitrary character than in the somewhat similar historic forms of construction—in the Greek, where the size of the architrave stones had influence in determining the inter-columniation, and in the Norman and early Gothic, where the spacing of the piers was affected by the properties of the round and the pointed arch. No matter how we approach the subject we are led to conclude that except as regards the often all-compelling consideration of cost we are likely in our future architecture to be governed by few natural restrictions. This somewhat dangerous freedom may possibly be decreased a little by such new building regulations as must shortly be introduced to modify our present antiquated codes, but it is hardly possible that the art of architecture will be benefited by any artificial restrictions of this kind.

With a lack of such strong constructional and other guiding influences as those which were responsible for the production of sincerity and strength in the historic styles, we, with the pier and panel wall treatment now being evolved, and with the enterprise evinced in the present day constructions in many directions, would yet appear to have an architectural future possessing hopeful possibilities. If this treatment—piers to carry all loads and thin walls to act merely as enclosures—in harmony as it is with the scientific methods of the day, is going to spread throughout the length and breadth of structural art it cannot but have an enormous effect on the architecture evolved. It will almost invariably be found that this type of construction is cheaper, in addition to being more scientific, than a construction relying on ordinary continuous walling, and we are in the days when financial considerations have decisive influence. In this instance there may be no occasion for regret, for it would appear that in the new pier and panel wall treatment we shall have some of the Gothic characteristics of design, and with these some of the Gothic possibilities of originality. But Gothic, it may be said, is not only a pier but also a buttress architecture. This is clearly so, and in our modern work we get both pier and buttress, but the latter disguised almost beyond recognition in the form of a simple stanchion. A buttress from the constructional standpoint is, after all, merely a contrivance provided to act counter to a thrust in order to preserve equilibrium. Either a steel stanchion or a reinforced concrete "pillar" properly designed for its purpose, and sufficiently secured at the base, is capable, by means of the tensile stresses of its material, of doing exactly the same work as is more ostentatiously affected by the buttress with its ponderous mass. Thus in our roofs we are able, if necessary, to dispense entirely with unsightly ties, and both here and in the pier spacing there are many opportunities for free and vigorous design.

In types of building where there are no hard-and-fast requirements tending to stereotyped planning it will rarely happen that the position of the piers will be in any two cases the same. As a result, instead of it being necessary for an elevation to be almost artificially evolved to stamp character upon an otherwise lifeless expanse of walling, the broad lines of treatment will be determined at once by the pier disposition, although in the exact determination of the spacing of the piers the designer will be influenced not only by considerations of practical construction, but by those of architectural design.

Despite that there are few signs at present of this pier construction being used in domestic architecture, and still less evidence that it would be welcomed by the able exponents of this our most satisfactory branch of English architecture, yet there are evidences that it may ultimately be found to be well suited for use in the larger country buildings. In this form of construction it is not only possible but necessary to emphasise in the design the main constructional features—the piers upon which the whole structure will be carried. Given, as the design of a big country house, a freedom from site limitations and a freedom in planning and arrangement encountered but rarely in other buildings, if, in addition, a form of building is adopted in which æsthetic design and logical construction can with great naturalness proceed together towards the desired goal, the result should, in capable hands, be most successful.

The bare statement that the pier architecture now being evolved is to some extent Gothic in tendency needs, however, some little qualification. Gothic it may be as regards the scientific concentration of loads on relatively small arears of support, but when we leave construction and come to the decorative side of the work our similarities become contrarieties. In appearance our modern buildings will obviously have but little in common with those of the Middle Ages. A note of verticality will no doubt be struck, although in many of the large American buildings it has been customary, by running the terra-cotta casing in continuous bands in front of the wall stanchions, to produce, at the cost of constructional sincerity, a horizontal treatment. In the design and execution of the features which make for architectural character and refinement the influence of mechanical labour and of the materials thus produced must be allowed its natural effect. It will profit us little if by means of commercial processes in terra-cotta or moulded brick we produce mouldings and ornament, alike indeed in form, but wide apart as the Poles in feeling from those whose interest lies in their having been wrought from the primeval rock at the cost of much studied thought and patient labour. In all successful efforts in design the characteristics of the materials must be allowed their legitimate influence. Where either stonework or brickwork is used we are on no fresh ground, except only probably as regards the main form of construction adopted, but when we have to deal with terra-cotta and the more modern kinds of glazed ware the old forms of decorative treatment long customary in our English architecture are no longer applicable.

It can hardly be considered a coincidence that this age of new methods and materials should synchronise with a revival of Byzantine forms of treatment. It would appear that the emphasis of a design by crisply executed mouldings and rich and elaborate carved ornament is likely to give place to a treatment more appropriate to materials in which the old forms of manual craftsmanship are no longer possible. As illustrations of the effect which can be produced by diversity of texture and colour in the walling there is little to compare with the works of the Byzantine builders.

In the manufacture of modern walling materials it is becoming customary to aim at the production of a vitrified or enamelled face able to withstand the deleterious effect of a town atmosphere, and one which, if necessary, can be cleaned down with ease. In most of the processes of manufacture the addition of any required surface colouring adds but little to the cost. It is generally admitted that in materials where pleasing variations of colour occur mouldings, if used at all, must be quiet and restrained in character. If the general colour scheme is very beautiful, the use of mouldings will but detract from the effect. It were most misdirected energy by means of carved and fluted ornament to attempt to add to the rich yet simple effect of a costly monolith of finely-coloured marble. With the increasing use of colour in our buildings it will be necessary for us to adjust our standards of architectural design, and we shall probably find it to our interest to study still further the wall surface treatment characteristic of the Byzantine style.

Mention has already been made of the ordered and regular spacing of piers and stanchions which for structural and economic reasons is very prevalent in modern buildings of the warehouse type. Such systematic treatment must have some little effect on the question of planning. For although the character of the accommodation required, the sizes, number, and disposition of the several rooms will undoubtedly have the greatest influence in determining the exact form of the plan to be adopted, yet the plan must clearly be governed by structural reasonableness. It should not be necessary in the erection of an office or trade building to resort to a constructional *tour de force* appropriate only, if at all, to the case of a concert-hall or cathedral. In addition to such regularisation of planning as may be due to influences of construction there would also appear to be another but less direct influence tending in the same direction. It is, after all, only natural that this closer connexion of science with architecture should, in due course, affect the outlook of those

Digitized by Google

responsible for the design of buildings and lead them to favour, in their modes of planning, similar regularity and presence of system as is becoming customary in the construction. We may, therefore, expect in our most modern buildings a tendency towards an ordered symmetry both in the construction, the plan, and the elevation. If, in great contradistinction to past days of formal planning, regular methods of arrangement owe their existence solely to structural necessities there will be small cause for criticism.

Treatment of Architectural Features.

Leaving the more general discussion of the subject of modern architecture, and dealing particularly with the principal architectural features, we are brought to face at the outset with the continued though gradual supersession of the arch by its early predecessor and historic rival the beam. The arch form has undoubtedly gained a position as a decorative feature from which it will not easily be dislodged. Arches of wood are continually met with, and do not appear to be viewed with disfavour even by the purists. But as a constructional arrangement the arch of voussoir blocks, from the early introduction of cast-iron, followed by wrought-iron, steel, and now reinforced concrete, has suffered a continual elbowing out. The column and beam in their modern dressing as stanchion and joists are becoming the rule throughout all constructive work. But though the same in principle, from the point of appearance the stanchion and joist have not much in common with their historic predecessors. It has been suggested that in the course of time we may cultivate ideals of proportion more in conformity with the comparative slenderness of the new construction. In support of this there is the fact that the proportion of columns has often been modified. Everyone knows what a striking difference there is in the proportion of the rude Doric columns of the Temples at Pæstum and those of the Ionic and Corinthian orders. We also find the same changing tendency, though in the reverse direction, in the way in which the towering shafts of Early Pointed Gothic attain the more sober form of Decorated piers.

In steelwork a little may be done to produce a greater appearance of stability by increasing the connexions at base and head somewhat beyond the size which engineering exigencies demand. Directly or indirectly failure in a stanchion is most likely to be due to lack of fixity at the ends, and thus anything which tends towards better connexions is good construction, though the bounds of rigid economy may perhaps be overstepped. In reinforced concrete, constructive necessity provides, in the shear or as they are sometimes termed, splay pieces, at the ends of the beam, additional material, which with judicious treatment may not only actually but in appearance provide considerable increase of strength at the junction of beam with column.

In what we term heavy engineering construction successful beam treatment appears rarely, if ever, to have been attained. In a plate girder bearing a load uniformly distributed, where the sheering stress considered to be taken by the web varies from a cipher at the centre to a maximum at the supports, it would surely seem possible, by means of the disposition of the web stiffeners, to provide some truly architectural treatment which, together with the usual increased number of plates at the centre, would not unpleasingly proclaim a constructional story to all who might have sufficient intelligence to understand. No doubt in very many respects room exists for a truly artistic treatment of these large engineering structures. Nowadays, when sculpture is again being freely used in connexion with buildings, and when symbolic figures and groups, sometimes discreetly labelled, are considered a necessary complement to our public buildings, one may ask why such sculptured symbolism is never applied to illustrate the mighty forces ever wrestling for the mastery in the girders of some viaduct or bridge. Even the inartistic man in the street could better appreciate a representation of strenuous figures striving to prevent the tearing asunder of the lower flange of a heavily-loaded girder than one of the customary Laodicean groups representing Literature, Education, or Art, which might often change places with one another without anyone being the wiser.

If for the external wall surfaces of our buildings the use of coloured tile ware became general, the exercise of restraint in the mouldings would appear to be a necessary consequence of the employment of such material. This would naturally affect the architectural treatment of door and window openings, boldness of outline in the decorative framing of such openings being superseded by variations in colour. Also, as has been previously mentioned, the customary arch treatment of openings is becoming less general. Throughout the greater portion of the most modern construction the lintel holds sway, and its function as the bearer of the superincumbent walling should by the treatment adopted be written upon the face of the building.

When the window space is considered we seem to be progressing towards two extremes. In offices and similar business premises, where light is of great value, deference is being shown on all sides to the utilitarian demand for large, plain glass surfaces. Observation of recent important office buildings will prove the truth of this statement. On the other hand, we have in domestic work a return to the attractive lead-glazing associated with pre-Georgian house architecture, also iron frames with glass in small squares are often used, and these produce by no means an unsatisfactory effect. In the form of construction in which all loads are carried by the piers, there will be no objection to increasing largely the area of window space, and thus it is to be trusted that the large, plain glass square, with its hopeless incongruity of scale with the rest of the structure is not likely to invade domestic work, and that possibly it may even be driven from its stronghold, the office building. The formation of spacious, well-proportioned windows, fitted with leaded glass, no doubt in the most costly kinds of buildings coloured and otherwise decoratively treated, may very probably be not the least pleasing of the results attendant on the development of pier and panel wall construction.

The use of a high-pitched roof has been general throughout all our national architecture, except in the case of the more monumental buildings erected in the XVIIth and XVIIIth centuries, when Italian influence was predominant, and it is of interest to consider whether perchance there are any tendencies in modern construction which may prevent the continued use of this essentially English feature. Dealing with the subject purely from the point of view of construction, it is doubtful whether the pitched roof can economically justify its existence. Certainly when steel and concrete are used, and where it is not proposed to have a roof story, it is both easier and more economical to construct a flat roof. But in our large towns it would appear that stories in the roof, necessitating, of course, a high-pitched roof, will be the general practice. Most regulations, both in this country and abroad, which operate in restricting the height of buildings have been framed with a view of providing a certain angle of light to the lower windows of buildings on the opposite side of the street. Stories in the roof are therefore allowable even although the height of the building to the eaves or parapet has reached the extreme limit permitted by law; but there is often, as in London, a limit to the number of stories and to the angle of slope of the roof. When, as no doubt will often be the case, it is desired to erect a building providing the greatest possible amount of vertical accommodation pitched roofs containing one or more stories will therefore be required, and the fashion thus set is likely to be followed in the less lofty buildings. Given that the storied roof remains customary in town architecture, it is hardly likely that it will be discarded in the country, where, since the early dawn of our English architecture, the mottled hues of cottage and mansion roof against nature's background of ever-varying green have provided for the poets and painters of all ages "material" inexhaustible in interest.

The increasing use of concrete, generally in combination with a framework of steel, has been responsible within the last twenty years for the frequent appearance of the dome in large public and commercial buildings. What in the days of plain masonry work was a difficult and costly constructional undertaking is now a matter of easy execution, and if reinforced concrete proves itself to be the wonderfully adaptable material at present believed, there are great possibilities in modern dome construction both as regards the outer enclosure of the dome and the inner lower crowned shell which æsthetically is found to be almost essential. But domes in this material are likely to be so only in name and appearance; the construction will be in principle similar to that of a rib and panel vault, of which we have an historic example in the dome of the cathedral at Florence designed by Brunelleschi.

The dome as a stately, almost voluptuous crowning feature of a large building is quite without a rival, but its use up to the present has been solely for reasons of effect. Now that the cost of dome construction has been so materially reduced it is for the future to prove whether, in addition to forming an imposing external architectural feature, a dome can be utilised to furnish space adaptable to the requirements of modern life. At present, however, this is but an interesting speculation. But the greater ease and cheapness of construction is a fact which cannot fail to have influence and tend towards the increased use of the dome in modern architecture.

Internal Decoration.

When we consider internal work we have cause to be appreciative of the opportunities due to the existence of so many beautiful and diverse materials. Methods of transport have been so improved that we have at our doors marbles as wonderful in profusion and display as those with which the first crowned of the Imperial Cæsars almost justified his extravagant boast. Also year by year modes of manufacture are extended and improved by which we are coming to possess materials in glazed and enamelled ware of any required shade or colour. Art metalwork in iron, copper, pewter, bronze, and other alloys is reaching a high level of excellence, and the use of oak and other hardwoods in simple and honest forms is becoming general throughout the interior of our buildings. Although often no new substances are used, yet the mode of treatment, particularly the juxtaposition of materials so typical of modern art, is of an enlivening freshness.

Oak for mantels and panelling in combination with beaten copper often produces very effective results, and also, more particularly in furniture, we see oak and pewter successfully used together. When to these materials are added enamelled tiles of various shades for fireplaces, and the friezes —or possibly the walls themselves—pictorially adorned with the aid of the stencil, we arrive at an ultra-modern form of treatment, often carried to extremes by those whose aspirations in the sphere of art have far outstripped their ability as designers. But in the hands of competent artists, the "style" as it may almost be termed, is capable of being put to very satisfactory use.

Digitized by Google

In the construction the keynote is one of simplicity and, throughout the best work, of accompanying sincerity and strength.

It is evident that modes of interior treatment do not depend upon tradition to the same extent as does exterior design. Closely influenced by past styles as in our external architecture we, in the interior of our buildings, are, however, able to voice to some little extent the spirit of the present day. It is of interest to note that one of the chief demands of treatment in colour—restraint in the use of mouldings and carved ornament—though yet barely recognised in exterior work, even where noticeable colour contrasts exist, receives practical acceptance in the interiors of most modern buildings. To institute a comparison between, for example, an elaborate Jacobean oak-panelled room and one oak panelled also, but executed in accordance with modern taste, is to realise the striking departures which have taken place in internal design. Instead of a semi-barbaric display of carving, framed in intricacies of moulded lines, features which it was considered desirable to reproduce in the new work of fifty years ago, we have a more refined though possibly less vigorous style in which character is produced by variations of material and colour.

In addition, however, to these XXth-century methods of treatment we get in the interiors of our large public buildings, rich forms of decoration in coloured marble, which, based on South European standards, and thus in no way modern, are yet fresh to us here in England. It is only of comparative recent date that these materials have been available for our use. The cost of transport was for long practically prohibitive. It is interesting to note that with all this beautiful display of coloured marbles in our important public and office buildings, and with very effective modern forms of wood, tile, and metal design in our best domestic architecture, any treatment partaking of the characteristics of both these styles is almost non-existent. Marble as used in the ornate architecture of Rome and Byzantium is indeed irreconcilable with the restrained and almost, as a contrast, ascetic treatment met with in much of modern interior domestic work. But is this the only way in which marble can successfully be applied? The buildings of the Greeks as first erected, with mouldings and sculpture richly stained and coloured, showed a form of marble decoration which, with our knowledge of Grecian art in other directions, we cannot but believe to have been excellent in effect. But as these buildings stand to-day, in pure grey-white outline, we see another, unstudied, purer, and more simple, form of marble treatment, which is the admiration of the world. Thus, although it is customary in our modern buildings to use marble in a rich, almost ostentatious, manner, it scarcely follows that this treatment is demanded by the material, nor that it may not be possible to use marble in simple forms in connexion with materials such as bronze or copper which are customary in our more modern forms of decoration.

Progress in internal decorative art has been most noticeable within the last quarter of a century. When the general public comes to realise that the work of to-day is not inferior to much of that which has gone before then perhaps there will be an end of that fashionable practice of dressing up rooms in different historic styles of decoration, so that we thus get the Elizabethan room, the Adams room, the Louis Seize room, and so on. Fortunately, up to the present we have been spared the Mid-Victorian room. But with mere fashion at the helm shall we be for ever thus immune? All this treatment is a mere masquerade, and possesses no more title to the term architecture than the work of the stage carpenter.

The Art of To-day and To-morrow.

Doubtless to many this optimistic view with regard to the future of architecture and the influence of our modern methods of construction will appear unwarranted. To such it is suggested that they should compare the state of the arts and handicrafts to-day with their position a little more than sixty years ago, prior to the pre-Raphaelite movement. In music, and possibly in literature, arts not expressible in form or line, there has indeed been a retrogression—the giants at any rate have left vacant places. But in no other direction has this confession to be made. On the contrary, we are able to record striking advances. Compare our best modern country houses with the dubious Gothic erections which were coming into vogue in the middle of the last century. Compare the arts of design in, for instance, the numerous textile industries. Compare the paintings. Compare, if any sort of comparison is indeed possible, the sculpture. In every case we see a great uplifting of the standards of English art, a process which still continues. Witness the progress made even in the last twenty years. Thus, when we see art evincing on all sides a vigour and freshness scarcely paralleled since the days of the Renaissance, may it not be possible that, as in the beginnings of many of the historic styles, architecture will welcome concurrent changes in construction with the cry of "Vita Nuova"?

LIMITATIONS.

FROM A CORRESPONDENT.

IT is a good saying which counsels us not to show the boundaries of our knowledge by overstepping them. The man of reserve commands a respect because there is a sort of presumption, owing to his being more or less inscrutable, that there is nothing that he does not know. The absolute silence of stock and stone before which idolaters bow is the very thing which accords with the notion of omniscience in the minds of the worshippers. It is characteristic of human nature to reverence reserve as abiding only in the unconditioned, the illimitable. Human beings, on the contrary, are necessarily conditioned not only by their environment, but by their own action, and even by their own utterances, and therefore they can never be without their limitations. On the negative side there are limitations through the absence or deficiency of faculties, often not conspicuous to the mind of the individual, but which can be noted better by others, though, often enough, for obvious reasons, we do not get the benefit of their observation.

Should our activity, then, be restricted simply to that which we know and can do of ourselves? Or, on the other hand, can any one man properly assume the control of matters not absolutely within his own ken? Such questions may very properly address themselves to architects. What, in short, is and what is not within their province? The architect's function goes beyond the discharge of the heavy responsibilities which he takes upon himself, for he has, beyond the production of a building which shall meet its requirements, to answer to himself that it shall be beautiful in itself, as far as he can make it, and that it shall express its purpose.

The days are long gone by when building was mainly a matter for craftsmen who respected their own limitations; the proverbial "Jack of all trades" being then, as now, the master of none. There are now, however, far more trades connected with building than formerly, but there is often considerable overlapping. Heating engineering firms take up art metal-work, decorators exploit appliances by no means closely allied to their own business; the same firm who will supply boilers will do pavement lights, and so forth; and this tendency is found in well-nigh every trade.

With all this diversity of operation the more emphatic becomes the demand for the architect, if the public concern themselves as they should as to the means to be employed in the proper carrying out of a building.

It is the architect who bears the theme in his own mind, and in him alone resides the great unifying principle; and for its expression it behoves him to press into the service all those means which are to contribute to the working out of the idea; bringing forward the whole by attending to the parts, all in just measure; while he, in the more special exercise of his function, has moulded and shaped the building in his own mind as truly, in a sense, as does the modeller with the clay beneath his hands.

But what, on the other hand, should properly be regarded as not the architect's sphere? His prerogative in the allied arts should be maintained under much restraint. With sculpture, apart from carving, he should have nothing to do (unless he is another Michelangelo) beyond forming a general idea of scale and mapping. These ideas should be imparted to the sculptor, who should not need anything further at the hands of the architect. Much the same would apply in the case of the employment of a painter. More nearly allied to the architect's own work is that of the civil engineer. He well may be employed in collaboration with the architect in certain cases, and should always defer to the architect's opinion. In the same measure perhaps the decorator should be dependent on the architect. As regards the gardener (we do not like the designation "landscape-gardener"), there has been of late what might almost be called an invasion of his domain by the architect; almost as much an interference as it would be for the gardener to dictate to the architect what creepers should grow up his building! The latter should surely be content with wedding his building to the ground; the lay-out of the surroundings will suggest itself in a great measure, and need not be taken in hand so seriously either by the architect or the landscape-gardener as is so often the case.

What hand the architect should have in the designing of movable furniture, textile fabrics, and mere utensils is a question. Such matters are not his proper sphere; if he has a leaning to any of these he might pursue it as a hobby; but is life long enough that he should bestow his time and attention on such things beyond his own province?

BERKSHIRE COUNTY OFFICES COMPETITION.

THE award of Mr. Mervyn Macartney, the assessor in this competition, has been awaited with more than ordinary interest; nor is this surprising when we take into account the large number of architects who sent in drawings, and the difficulties which arose in connexion with the conditions. These must be fresh in the minds of most of our readers; there is therefore no need to recapitulate them here. The first premium of 100*l.* has been awarded to Messrs. Warwick & Hall, of 13, South-square, Gray's-inn; the second of 75*l.* to Mr. E. J. Shrewsbury, Clock Tower Chambers, Maidenhead; while Messrs. Wills & Anderson of 24, Bloomsbury-square, London, have obtained the third of 50*l.* The proposed site measures 93 ft. 4 in. by 64 ft., the northern or principal and shorter side fronting on The Forbury. The rights of light are unobstructed on the north and south sides, and but slightly restricted on the flanks. The several departments required, with their approximate area in feet super., were as follows:—Clerks' department, 3,005 super. ft.; education secretary's department, 3,670 super. ft.; medical officer's department, 1,025 super. ft.; county treasurer's department, 2,035 super ft.; county surveyor's department, 1,715 super. ft.; land steward's department, 825 super. ft. Two committee-rooms of not less than 600 super. ft. were to be provided, the one on the same floor as the education department; and lastly, storage accommodation for forty bicycles.

Digitized by Google

The cost of the building was not to exceed 16,000*l.*

Messrs. Warwick & Hall, the authors of the first premiated design, have produced a straightforward and simple plan in which the accommodation asked for has been provided with, on the whole, the maximum of convenience. The central corridor type has been chosen, the one most obviously suited to the limits of the site. We doubt whether this corridor is very adequately lighted, depending as it does for its light on the front entrance and one window at the opposite end; however, lighting which looks unsatisfactory on paper is often well enough in actual practice. We note a serious oversight in the accommodation provided for bicycles. This is situated in an area which was stated to be private, nor is shelter of any sort shown on the drawings; so that not only would these bicycles be unprotected from the weather once they have succeeded in getting there, but their means of attaining this open haven are more than problematical. The same remarks apply to the coal shoot to the store in the basement. The caretaker's quarters are placed on the third floor; no second stairs are provided. The drawing office of the surveyor's department is well placed on the same floor, with a good north light. The arrangement of the large committee-rooms is excellent. The elevations are treated without a large order; most obviously the right treatment under the circumstances, from the proximity of the Assize Courts, whose elevations are designed in two superimposed orders. The front is of red brick with Portland stone dressings; altogether a refined and artistic conception. The high roofs are apparently to be covered with pantiles, giving a slightly southern effect. The windows of the first floor might perhaps have been treated with segmental heads throughout, the present effect being somewhat restless. Taken for all in all, however, we have not the slightest doubt that the scheme of these architects is the one which best answers its intended purpose.

Mr. Shrewsbury's plan is, by comparison, somewhat complicated and confused. It may be described as of the central area type, there being in fact two central areas, the lavatories being so arranged as to divide the space into two parts. The upper floor plans do not follow very logically upon the ground floor, involving much carrying of partition walls upon girders. The bicycle storage has been successfully disposed of in the basement. The elevations are tolerable, though we do not like the hybrid manner of glazing the top sash with small panes, and the lower sash in one sheet. The design possesses good points, nevertheless, which the Assessor has done well to recognise, notably the good lighting obtained for the corridors.

Messrs. Wills & Anderson's design, placed third by the Assessor, possesses several points of interest. Here again we have the central area type, in this instance more thoroughly carried out. The entrance is on the left instead of the centre, as in the two preceding schemes, and leads to a wide hall, the main stairs, semicircular on plan, projecting into the light area. At the side of these main stairs is placed a second and smaller staircase, a good feature, and conveniently placed. A corridor of liberal dimensions follows round the area, giving access to the different departments. One very serious error we noticed; the placing of the ladies' lavatory is neither convenient nor pleasant. Some better position should have been found for it. The access to the assize court is very narrow; this has been better designed in the schemes we have before mentioned. A large Ionic order is employed in the elevations, which are correct, if somewhat tame.

The remaining designs, not having the names of their authors' attached to them, we shall refer to by their numbers. It must be understood that we are unable to notice more than a very small proportion; to mention all would far exceed the space at our disposal.

In No. 97, drawn in the regular Beaux-Arts style, we suspect a well-known hand. Mr. Robert Atkinson will forgive us if we err; imitation is the sincerest form of flattery. The plan hardly comes up to the elevations. Among other inconvenient features is the placing of the medical officer and the assistant medical officer in the basement. Here, again, the ladies' lavatory is extremely awkwardly placed. The bicycle storage entails the carrying of them down a flight of steps, though indeed a very short one. No. 135 has a fairly good elevation. The balustrade is a mistake; it tends to obstruct the windows which light the third floor; the design would have looked just as well without it. The plan is rather attractive, especially the placing of the committee-rooms. No 169 might have been done in the 'sixties, so completely Victorian is its style. It is a praiseworthy, though mistaken, attempt to harmonise with the Assize Courts next door, the main cornice being kept to the same level. The plan has nothing remarkable about it. No. 36 is a pleasant drawing to look at, and shows a really artistic spirit. The elevation of No. 165 is as good as anything else exhibited, if not better; showing, as it does, an originality of the right sort. The plan, also, is not bad; the chief feature is a top-lighted, central staircase hall. No. 142 is one of the few schemes which venture upon a tower. The intention of the drawings is better than the execution; there are the germs of good ideas in it. No. 124 possesses a very fair elevation. The corridor seems to depend for light entirely on the entrance and toplight over the main stairs. No. 53 is very neatly drawn; the plan somewhat resembles the second premiated design. No. 91 is a very immature affair; we mention it because the elevations show promise of better things. They are not very good, but give evidence of a hopeful type of plagiarism, which may develop into originality.

Limits of space preclude a further review. We may add that the drawings will remain on view at the Dairy Institute, Valpy-street, Reading, till September 18. The exhibition includes the whole of the plans.

ENGINEERING DAY AT THE IMPERIAL EXHIBITION.

ALTHOUGH not particularly remarkable for engineering exhibits, the Imperial International Exhibition at Shepherd's Bush is equipped with an energetic sectional committee of engineers and others who have done their best to secure the support of industrial firms engaged in mechanical and structural engineering, building construction, mining, and metallurgy. To the general committee of the engineering section belongs the credit for the success attending the congress held on Saturday last week, when in spite of somewhat unfavourable weather a large number of engineers representing the leading technical institutions gathered at Shepherd's Bush, to take part in the programme arranged.

Early in the afternoon there was a fairly numerous attendance in the Congress Hall to hear the lecture on "Water Power and Turbines," by Mr. A. Steiger, M.Inst.C.E. We have frequently urged the more complete utilisation of water power in Great Britain, and now refer those interested in the subject to the statement of the author to the effect that there is at present available in this country 1,000,000 horse-power, which could be developed at an average cost of 40*l.* per brake horse-power. The initial outlay may perhaps seem rather large, but the permanent reduction of working cost thereby secured is a far more important item for consideration.

A part of the programme attracting greater attention from the gathering of engineers was that affording ample opportunity for inspecting the mechanical features of the various contrivances devoted to the amusement of the public. The Flip-Flap, the Spiral, Scenic, Mountain, Miniature, and Submarine Railways, the Motor Racing Track, the Canadian Toboggan, the Wiggle-Woggle, and the Witching Waves, all represent ingenious and instructive adaptations of mechanical and electrical engineering, notwithstanding their frivolous aim, and in some cases grotesque nomenclature. The numerous parties of personally-conducted visitors had also the privilege of inspecting the installations of machinery and plant in the Exhibition electricity substation, as well as in the pavilions of several leading exhibitors.

Meanwhile the reading of papers was continued in the Congress Hall, the subjects brought forward being directly connected with marine engineering. Shortly before five o'clock all parties began to assemble on the terrace of the Imperial Tower for the reception by the Lord Mayor, and after this function had been performed, the visitors again dispersed—some to inspect the very interesting exhibits scattered about the Machinery Hall and other buildings, and others to hear lectures in the Congress Hall, the subjects of the latter being "Large Gas Engines," by Mr. Percy R. Allen, M.I.Mech.E.; "Snap-Shot Drawing for Engineers and Architects," by Mr. T. R. Ablett; and "The Simplest Perspective Drawing of Machinery," by Mr. C. A. Ablett, B.Sc., A.M.Inst.C.E.

Although the congress was necessarily somewhat inconspicuous among the large attendance of the general public, it must be characterised as a complete success. Its inauguration is specially worthy of note as the commencement of a movement for bringing together a number of engineering societies and kindred associations, and we take this opportunity of commending the idea as one thoroughly deserving imitation by the leading technical institutions of the country.

THE BASSET AND MANSEL TOMB, LLANTRITHYD CHURCH.

THIS quaint and interesting Renaissance tomb is in the chancel of Llantrithyd Church, a small Gothic structure consisting of nave, chancel, and tower, situated about twelve miles to the west of Cardiff, in the county of Glamorgan. The tomb is in a perfect state of preservation and is executed in stone, the various portions being coloured and relieved with gold.

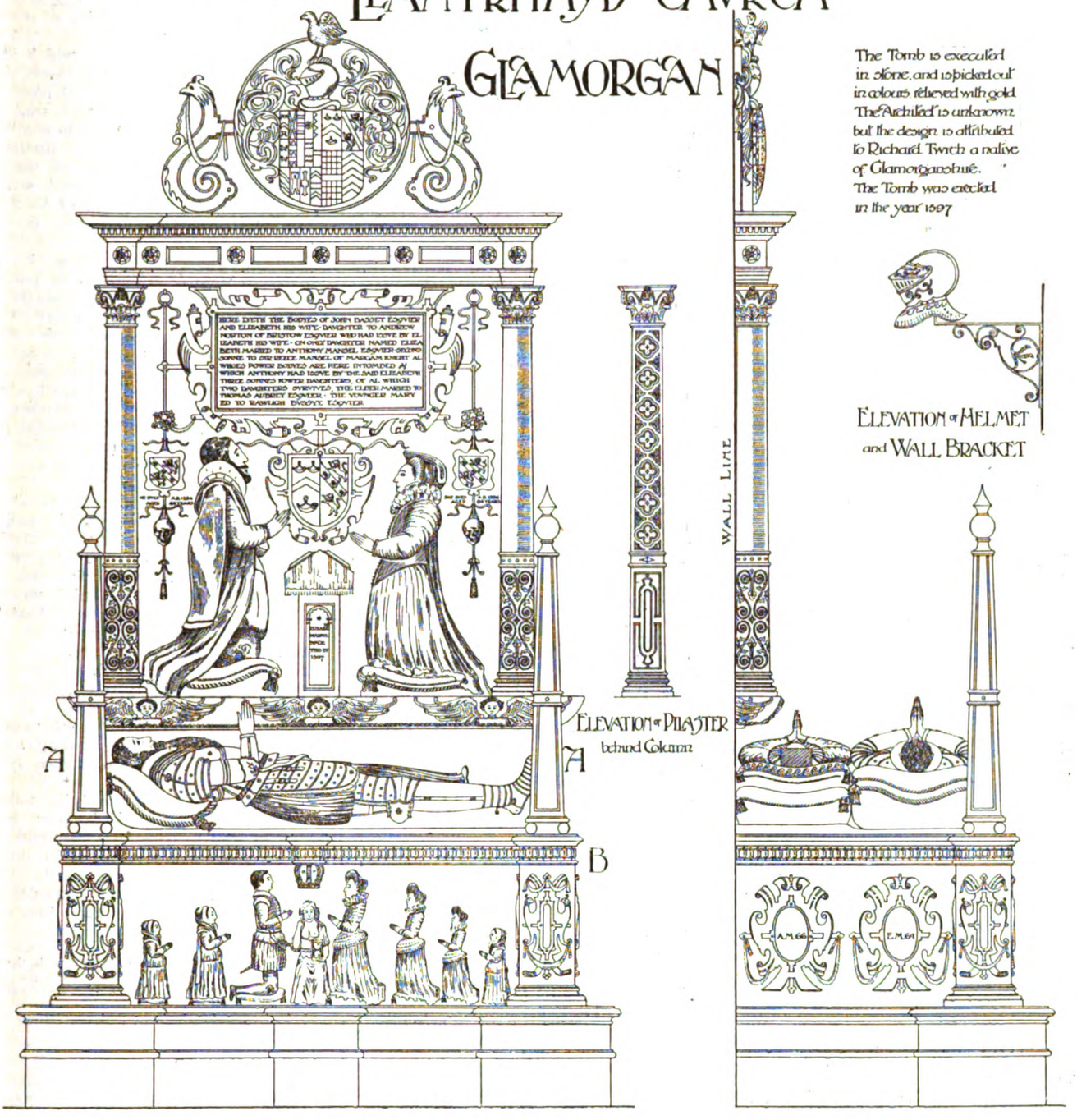
The architect is unknown, but it is attributed to Richard Twrch, who designed the beautiful Renaissance porch at Old Beaupré Castle (a drawing of which was published in our issue of April 14, 1906), the date of erection being 1600, as inscribed on one of the tablets over the entrance doorway. As Beaupré Castle is only three miles distant from Llantrithyd, and as the porch was designed for the Bassets of Beaupré, in all probability this tomb, which was erected in 1597 (as carved on the centre panel), was designed by the same hand for the Bassets of Llantrithyd, the detail in many instances bearing a striking resemblance, although not so pure as that in the porch, which was designed later.

Richard Twrch and his brother were stonecutters (*temp.* Edward VI.), and worked the Sutton freestone quarries in the neighbourhood. Owing to a disagreement arising between them (some writers saying that it was owing to a love-affair), Richard left the country, and for many years worked at his trade in London and afterwards in Italy, where he attained great proficiency in the arts of sculpture and architecture, and, at last returning to his native village, ventured upon his former business at the Sutton quarries, and executed work in so excellent a manner as to command great admiration. He was engaged by the Bassets to build at Beaupré Castle first the chapel in the year 1586, and afterwards the porch in 1600.

Digitized by Google

THE BASSET AND MANSEL TOMB
LLANTRITHYD CHURCH
GLAMORGAN

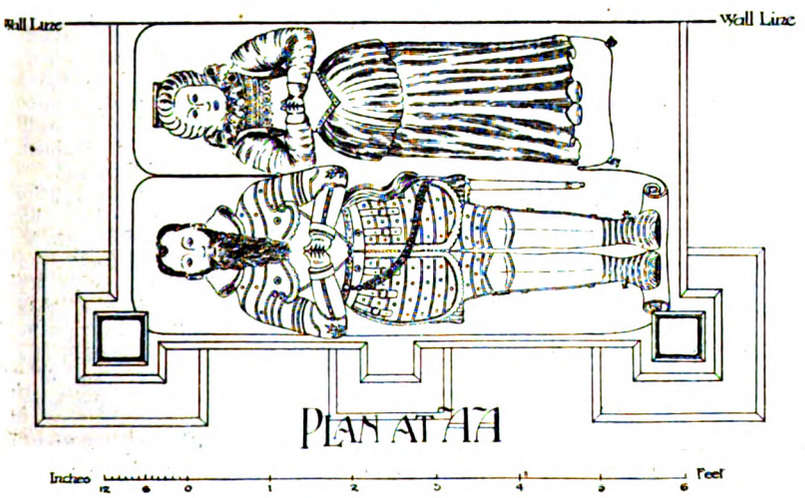
The Tomb is executed in stone, and is picked out in colours relieved with gold. The Architect is unknown, but the design is attributed to Richard Twich a native of Glamorganshire. The Tomb was erected in the year 1597


HERE LYETH THE BODYES OF JOHN BASSET ESQVIER AND ELIZABETH HIS WYFE DAVGHTER TO ANDREW NORTON OF BRISTOW ESQVIER WHO HAD ISSVE BY ELIZABETH HIS WYFE - ON ONELY DAVGHTER NAMED ELIZABETH MARIED TO ANTHONY MANSEL ESQVIER WHOSE ONELY SONNE TO OVR HEIRES MANSEL OF MARGAM KNIGHT ALL WHOSE POWER BODYES ARE HERE INTOMBED AT WHICH ANTHONY HAD ISSVE BY THE SAID ELIZABETH THREE SONNES POWER DAVGHTERS OF AL WHICH TWO DAVGHTERS SVRVIVED THE ELDER MARIED TO THOMAS AVBREY ESQVIER THE YOVNGER MARYED TO RAWLEIGH DVGGVE ESQVIER
WALL LINE
ELEVATION of PILASTER behind Column
A
A
B

ELEVATION of HELMET and WALL BRACKET

FRONT ELEVATION

SIDE ELEVATION



PLAN AT AA

ORNAMENT AT B

ORNAMENT ON PILASTER

SHIELD on Recumbent Figure

SHIELD at side of Column

Digitized by Google

The design of the tomb is unusual, for it is very rarely that we find the recumbent figures in conjunction with the kneeling figures under the arched canopy. It is a good example of English Renaissance of that period, and shows in parts that the designer could not free himself from the love of the old English forms, for whilst most of the mouldings are classic in outline, those at the base of the tomb are of Gothic form. In addition the upper portion of the pilasters behind the columns are enriched with quatrefoil sinkings relieved with nondescript carving in the spandrels, although this detail is not much seen, being hid behind the columns.

Under the canopied arch in the wall are the figures of John Thomas Basset and Elizabeth, his wife. The recumbent figures are those of Anthony Mansel, son of Sir Reece Mansel, and Elizabeth, his wife, daughter of John Thomas Basset. At the base of the tomb are represented, kneeling, the four daughters and three sons of the Mansels. In the centre between them is an allegorical female figure, with wings at the back, but these do not show in the front elevation. She is seated, and in her hand is an hour-glass.

John Thomas Basset, of Llantrithyd, was born in 1510, and was a member of the Inner Temple, sixth Sheriff of the County of Glamorgan, M.P. for Cardiff, thirty-third of Henry VIIIth (A.D. 1542), and in the twenty-sixth year of the reign of the same monarch (1535) was joint Attorney-General for Glamorgan with Herbert Earl of Pembroke. The said John Thomas Basset married first, Alice, daughter of Thomas Love, of Dinas Powis. He left issue by her, Thomas. He married, secondly, Elizabeth, a daughter of Andrew Norton, Esq., by whom he had issue, Elizabeth, married to Anthony, youngest son of Sir Rees Mansel, which Anthony Mansel was Sheriff of Glamorgan. The said Anthony and Elizabeth, his wife, left two co-heiresses. Mary, married Thomas Aubrey, LL.D., and the other married Sir Rawleigh Bushy.

John Thomas Basset, in the reign of Edward VIth, *cir.* 1550, was the purchaser of the Lordship of Peterston and Talavan from the Crown, afterwards possessed by Sir Thomas Aubrey, Bart. The said J. T. Basset died A.D. 1554, aged forty-four years. Elizabeth Norton, the widow of the said J. T. Basset, married, second, Sir Richard Walwyn, Kt., who was the nineteenth Sheriff of Glamorgan.

The exact wording of the inscription on the centre panel above the two kneeling figures is as follows:—

"Here lyeth the bodyes of John Basset, Esquier, and Elizabeth, his wife, daughter to Andrew Norton of Bristow, Esquier, who had issue by Elizabeth his wife, on onlv daughter named Elizabeth maried to Anthony Mansel, Esquier, second sonne to Sir Reece Mansel of Margam Knight al whoes power bodyes are here intombed, which Anthony had issue by the said Elizabeth three sonnes, fower daughters, of al which two daughters survives, the elder maried to Thomas Aubrey, Esquier, the young maryed to Rawligh Bussye, Esquier."

At the right hand side of the kneeling lady is inscribed, "She died A.D. 1596, aged 84 years"; and on the left-hand side is, "He died A.D. 1554, aged 44 years." On the centre panel of the reading-desk, between the two kneeling figures, is inscribed, "Elizabeth Mansel made this in 1597." On the side of the tomb on each cartouche is inscribed, "A.M. 66, E.M. 64."

The over all dimensions of the tomb are as follows:—Height 16 ft. 3 in.; width, 9 ft.; projection from back line of wall, 5 ft. 6 in. The length of the recumbent figure of Anthony Mansel is 6 ft. 2 in. from head to foot, so that when fully attired in his helmet and armour he must have presented an exceedingly fine appearance, being broad in proportion to his height.

The lower portion of the tomb with the recumbent figures is slightly out of the centre with that portion in the wall, but has been drawn to the same centre line in the drawing.

W. EATON, A.R.I.B.A.

THE DESIGN AND WORKING OF A MODERN DESTRUCTOR.*

THE general trend of development and progress in destructor practice, more particularly during the past two years, has been on the following lines:—

(1) The amelioration of the conditions for the workman in the destructor house.

(2) The introduction of details in construction which ensure fairly high temperatures and a normal ruling condition in the furnace proper.

More efficient means have been introduced for the ventilation of the destructor house, and this is a step which is undoubtedly in the right direction. It is well known that, in any plant that is not strictly up to date, a visit to a destructor plant is synonymous with dust, and the experience could never be looked forward to with anything but feelings of dismay and prospective discomfort. In up-to-date plants ventilating ducts are provided, and the house is so constructed as to permit of the air being renewed from four to five times per hour. The vitiated air is withdrawn through these ducts and led to the fan inlet, from whence it is propelled to furnace ashpits.

In this direction also means have been introduced for facilitating the clinkering of the fires. This is by common consent the most laborious operation in the whole cycle in destructor working, and anything that can render easier the clinkering of the fires would be hailed by the fireman, at any rate, with the utmost satisfaction.

Taper castings have been introduced which form a line of cleavage between and in the grates, and much facilitate the breaking up of the fires before withdrawal.

Although there are several different firms who specialise in destructors, yet there are practically only two groups or types, namely, the "single cell" and "continuous grate."

These may be again subdivided or classified by the method adopted in feeding the refuse into the furnace, namely:—

(1) Top Feed. In which the refuse is fed in through the top directly on to the fire or on to a drying or desiccating hearth and then pulled forward on to the firebars.

(2) Back Feed. In which the refuse is fed in through an opening at the back and clinkered from the front.

(3) Front Feed. In which the refuse is fed in through the front and clinkered from the same opening.

With regard to the top feed, although possibly there is considerably less handling, yet there are grave objections so far as obtaining good results from the combustion and evaporisation point of view. Should a load arrive which is either very wet or contain an unusual quantity of tins, earthenware, bottles, or other incombustible matter, it must of necessity go into a particular cell, with the consequent effect of reducing very considerably the temperature in that cell. Again, the refuse has to be pulled forward on to the bars, and it is difficult to get an even thickness and uniform density over the grate when handling long and heavy firing tools over a hot fire, with the result that the forced draught will take the line of least resistance and will escape through the thin parts, to the detriment of the thicker portion which most requires its aid for a complete and perfect combustion. The front or back feed enables the stoker to apply the refuse more evenly and with more discretion, and although the method of charging with the shovel by hand has been described as putting it on by the spoonful, yet to obtain the highest efficiency the makers of mechanical stokers have been employing this method of small quantities at a time with the best results.

In the single-cell type of destructor the cell is an isolated furnace, having an opening through which the refuse is delivered on to the grate bars, and an opening at either the back or front for the outlet of the products of combustion. These latter pass into a main flue which is common to a number of cells built in parallel.

The cell being isolated, the process of combustion must go on unaided by any adjoining fire, and the temperature obtained depends entirely on the quality of the refuse with which it is charged.

There is a type of furnace which consists of two cells having a boiler between, so that the gases evolved in each cell pass immediately under the boiler, and are, consequently, cooled before complete combustion has taken place. It has the further disadvantage that, at the time of clinkering, the admission of cold air must adversely affect the boiler, having regard to the fact that the boiler is in such close proximity to the cell.

The continuous grate is, as its name implies, a number of grates in line, each having a separate ashpit, but with the space above the firebars communicating; that is to say, the gas is passed the whole length of the series of grates into a combustion chamber, and from thence to the boiler. A charge put on any one grate must naturally receive a large amount of assistance from the other fires, and the time taken in the initial ignition and combustion must therefore be considerably less than in the single-cell type.

The great fluctuation of temperature in the single cell affects the firebrick lining very seriously, due to expansion and contraction. This is taking place between each operation of clinkering, about every two hours. This fluctuation is reduced to a minimum in the continuous grate, for the reason that there are always other fires in the furnace at the time of clinkering any one fire.

There can be no doubt, however, that the continuous-grate type of furnace construction is being looked upon with much greater favour, and a few words might be said with regard to the leading features which characterise the best-known systems of this type.

It may be laid down that the following are absolutely essential features in the design of any furnace that can reasonably fulfil the primary objects for which it exists, viz., the complete destruction by fire of obnoxious matter without nuisance, and general provision for the utilisation of the heat generated in the process:—

(1) A continuous furnace chamber with the grate laid off in sections, each section independently controlled and so operated that it is a complement of the others.
(2) Provision for heating and regulating the air supply for the necessary forced draught.
(3) A combustion or dust-settling chamber.
(4) Steam generator.

The rate of burning in a continuous grate is higher than in an isolated cell. This rate of burning is materially increased if the arch over the grate is undulating, which causes the gases in one fire to be deflected on to the next, and again from that on to a third. The gases distilled from the green or newly charged refuse must be more thoroughly cremated when brought into contact with other fires, than can be the case when going direct from an isolated cell to the boiler. It is obvious therefore that, combustion being more perfect, a higher as well as a more regular temperature is attained, and therefore a higher rate of burning.

As the result of careful observation the author has found that the ratio of burning on each grate on a three-grate unit is as 3, 4, and 5. On the grate furthest from the combustion chamber the rate of burning was 55·21 lb. per square foot of grate area per hour; on the middle grate 74·6 lb., and on the grate next the combustion chamber 89·6 lb., which gives an average of 73 lb. per square foot of grate area per hour over the whole area.

In the cycle of operations which takes place after the delivery of the refuse into the storage bunker there are three distinct stages, in each of which the features

* A paper by Mr. William F. Loveday, read at a metropolitan district meeting of the Incorporated Association of Municipal and County Engineers, held at Westminster, March 26, 1909.

Digitized by Google

embodied in the furnace design play an important part. These stages are:—

(1) The charging stage.
(2) The burning stage.
(3) The clinkering stage.

With regard to (1) a storage hopper or bunker is provided. This is placed in a position convenient of access for the firemen, and just opposite the charging door to the furnaces. It is usual to provide for approximately half a day's supply of refuse in the bunker, but, of course, the hours of collection in general determine the amount of storage that should be provided for.

The refuse is shovelled direct from the hopper and spread over the furnace grate in one operation by the fireman.

Stage 2. At this stage the utility of the continuous furnace chamber and sectional grates is at once put into effect, as also No. 2 of the essential features in the furnace design, viz., the heated air-supply. Whenever the material is charged it is ignited by the flame from the adjoining fires, and the temperature of the furnace chamber is further increased by the forced draught air-supply, which is heated by means of the air-heater or regenerator. Control and regulation of the air-supply are of the utmost importance, and for this purpose a special valve is provided which can be manipulated and adjusted to meet all conditions.

Until recently the great object of the destructor furnace designer, viz., the maintenance of a uniform and normal ruling temperature in the furnace chamber, could not be attained, the chief difficulty being reached at the third stage in the process of clinkering the fires when an inrush of cold air inevitably reduces the temperature of the chamber. By an ingenious device it is now possible to automatically and continuously control the conditions determining the efficiency of combustion in the destructor furnace. This apparatus is an entirely new feature in destructor practice, and has been installed on the plant just put to work in New York, and has been an unqualified success.

House refuse ordinarily contains a high percentage of vegetable matter, which consists of upwards of 70 per cent. of moisture. Under these circumstances a steam jet as a means of supplying forced draught does not strike one as being as desirable as it would be, adding air saturated with steam to an already heavily charged moist fuel. The better method, therefore, of supplying forced draught or a pressure of air in the ashpit would be by fan. It is eminently desirable, however, that the air should be heated. This can be obtained from the waste gases after leaving the boiler by means of an air-heater through which the gases pass down a series of tubes, whilst on the outside of the tubes the air is driven from the fan into the ashpit.

There is thus a good exchange going on, the waste gases are made to give up a large amount of their heat to heating the air for forced draught. The heated air on entering the furnace absorbs whatever moisture there may be in the fuel, thereby saving the fuel to that extent which it would otherwise have to give up in the absorption of its own moisture and thus adding increased calorific value to an otherwise poor fuel. This is therefore a very important feature to bear in mind, that heated air rapidly takes up moisture from the refuse and thus materially decreases the time taken for burning. It also is a well-known fact that air heated previously to being discharged into the furnace has the effect of increasing the temperature about twice the temperature of the air so delivered.

The advantage of heating the air may be expressed in terms of coal. Thus with air at a temperature of 300° Fahr. is approximately equivalent in effect to the addition of about 1 cwt. of coal to each ton of refuse.

The ventilation of the destructor house should not be from the inside to the outside, but *vice-versa*. By this means any objectionable odour which may arise when the refuse is being delivered is not distributed to the surrounding neighbourhood, as is the case when the ventilation is from the inside to the outside. The best means of ventilation is by means of an air duct constructed in the roof, communicating with the shaft supplying the air for forced draught for the furnaces. The air is drawn from every part of the house simultaneously, heated and passed through the furnaces, and as the only means of ingress for the fresh air should be at the openings at the ground level, this method ensures that the inside of the building is as fresh as it is possible to be.

Incidentally, the fan thus serves a double purpose, as it extracts the air from the destructor house and affords a good system of ventilation, and also the purpose for which it was originally intended, namely, the supply of forced draught.

Generally speaking, the following are features which should be absolutely insisted upon in any destructor installation:—

(1) Cleanly operation, absolute freedom from nuisance to the neighbourhood, and maximum comfort for workmen.
(2) Minimum capital cost, consideration being given to the value of the steam and clinker, and general efficiency.
(3) Low maintenance charges combined with low labour cost.
(4) The necessity for heating the air supply has been more than ever demonstrated in recent years, and this can be most economically effected by placing the heater in the path of the waste gases just at the boiler outlet.
(5) Maximum evaporation.
(6) Regular steaming.
(7) Clinker of marketable quality.

The plant at Stoke Newington was erected by Messrs. Heenan & Froude, Ltd., of Manchester, and consists of two units of three grates each; each grate has an area of 25 sq. ft., and there is a separate ashpit to each grate. At the end of each unit is a large combustion chamber at right angles to the furnace, at right angles to this chamber and parallel with the furnaces are placed two Babcock & Wilcox water-tube boilers, each with a heating surface of 1,741 sq. ft. At the end of the boilers are the air-heaters, and the gases after leaving these pass direct into the main flue. Each unit is provided with a separate fan and engine which are used as before described for ventilating the building and supplying the forced draught.

There is also a Worthington pump and an injector for filling the boilers. The plant is in duplicate, and each unit is worked every alternate week.

The floor of the destructor house is 10 ft. 6 in. below the tipping-floor, from which the refuse is shot into hoppers immediately in front of the furnaces.

The furnaces are of the front feed type—that is, they are fed and clinkered from the same opening.

The average quantity of refuse received at the destructor in the summer is 30 tons per day, and in the winter 45 tons per day. This is dealt with by two shifts of two men each; the number of hours worked by each shift is eight in the summer and ten in the winter.

During the two years the plant has been in operation there has not been a sufficient use for the steam generated, and the author is therefore unable to give a complete year's working of the results which could be obtained.

At present, beyond the small amount of steam required for the fan and the pump, there is a crusher engine of 15 h.p., a disinfecting station, a small electric generating station with a dynamo of 77 k.w. capacity, which is worked nightly at a load of 170 amperes and 515 volts, and twenty-two public slipper baths. The boilers are set to blow off at 160 lb., and with the bye-pass damper partly open steam is constantly blowing off. During the winter six months, between the hours of 10 a.m. and 2 a.m., 2½ lb. of water are evaporated per pound of refuse, and in the summer about 1½ lb. per pound of refuse. In the summer work ceases at midnight.

The clinker is used for a large variety of purposes. During the last nine months the author has used some 1,000 tons, which has resulted in a saving of 330*l*. for ballast and sand.

The clinker has been used for concrete in foundations of walls, retaining walls, floors, roofs, concrete foundations for paved roads, both wood and granite, and also paving yards and footpaths. The divisions between the slipper baths were made of reinforced clinker concrete, 1½ in. thick, at a cost of 3s. 5½d. per square yard.

The cost for burning the refuse equals 7.3d. per ton. In addition there is the cost of cleaning the flues, amounting to 0.5d. per ton. A fitter is employed about the premises, a proportion of whose wages should be charged to the destructor. A boy on each shift is engaged for the purpose of picking out the tins from the refuse which he pulls forward for the stokers, but this is no charge on the destructor, as the amount received for the tins equals their wages. The cost of disposing of the clinker in the first year amounted to 196*l*., but during the second year there will be no charge for this, as the sales and use to which the clinker has been put will probably result in a profit.

Consulting and electrical engineers are now beginning to awake to the possibilities of the destructor. A few years ago these gentlemen would have nothing to do with them, but in those cases where the destructor has been run as an adjunct to electric and other installations, the results have exceeded their expectations.

Master Builders' Associations, etc.

SHEFFIELD BUILDERS AND CORPORATION CONTRACTS.

A deputation from the Sheffield Master Builders' Association recently had an interview with the Town Clerk and the City Architect, and urged that the period of twelve months for retention moneys (10 per cent.) after the completion of Corporation contracts should in the case of small contracts (such as repairs and alterations) be reduced, and that the present conditions of contract should be somewhat modified as regards works of a small nature. The Finance Committee reported this week having considered the matter. They had decided that, except in special cases where the Town Clerk otherwise advised, the clause in Corporation contracts as to the moneys to be retained by the Corporation on completion of the works be modified to the following extent, namely:—Contract price up to 100*l*., three months' retention; beyond 100*l*. and up to 1,000*l*., six months' retention; beyond 1,000*l*., twelve months' retention, as at present.

PETERHEAD MASTER BUILDERS.

The annual meeting of the Peterhead Master Builders' Association was held in the Town House on Thursday evening last week, the President, Mr. A. Scott, presiding. The Secretary and Treasurer submitted the abstract of accounts for the past year, which was approved of. The following office-bearers for next year were then elected:—President, Mr. W. B. Taylor; Vice-President, Mr. A. L. Williamson; Committee, Messrs. A. Farquharson, John Farquharson, W. Hadden, George Watt, James Craighead, D. Guthrie, A. Webster; Secretary and Treasurer, Mr. A. Clark Martin

HAWAIIAN BREAKWATER.—A breakwater, which, when completed, will be some 10,000 ft. in length, is now in course of construction at Hilo, in the Island of Hawaii, to protect shipping from the heavy seas that sweep from the north-east. At present some 400 ft. have been completed, and under the existing contract it is estimated that by the middle of next year a length of some 3,000 ft. will be in position. The material used for construction is a basalt rock resembling heavy granite, which is quarried some twenty-five miles away and transported to the works under contract with the Hilo Railway Company. According to the specifications, from a depth of 3 ft. below the water line to the top, boulders of not less than 8 tons in weight are to be used. The contractors are confident that the rock in question, which weighs 165 lb. to the cubic foot, will resist any action of the waves, without the use of cement to bind it.

THE BUILDER

SEPTEMBER 11, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 12s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 13s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, SEPTEMBER 10.

Manchester Society of Architects (Incorporated).—Visit to the Garden Village, Burnage.

SATURDAY, SEPTEMBER 11.

Northern Architectural Association.—Visit to Corbridge and neighbourhood.

MONDAY, SEPTEMBER 13.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. Cloudesley Willis on "Stained Glass." 8.15 p.m.

National Association of Master Painters and Decorators (Incorporated).—Opening of the annual conference at Sheffield. President's reception in the Exhibition Hall, Artillery Drill Hall, Shoreham-street. 7.30 p.m.

TUESDAY, SEPTEMBER 14.

National Association of Master Painters and Decorators Incorporated).—Annual conference at Sheffield.

WEDNESDAY, SEPTEMBER 15.

National Association of Master Painters and Decorators (Incorporated).—Annual conference at Sheffield. Annual dinner at the Royal Victoria Station Hotel. 7.15 p.m.

Provident Institution of Builders' Foremen and Clerks of Works.—Ordinary meeting of the members. 8 p.m.

Fifty Years Ago.

FROM THE *Builder* OF SEPTEMBER 10, 1859.

OUR STREET LAMPS.

THINGS constantly before our eyes become so familiar that we are liable to pass them by without any particular attention, although, if persons of educated taste had some of these objects put before them for the first time, they would be surprised at their deformity, and wonder how such things could have been so long tolerated. Amongst the most conspicuous objects in the streets of the metropolis are the thousands of lamp-posts which line the highways, and are distinctly in view during both night and day. A glance at one of these, which may be taken as a type of the majority, shows that it has been constructed without attention to any principle of design; it is neither beautiful in form nor symmetrical in its proportions; it is a matter which might have been planned, as no doubt it was, by some ordinary mechanic, who had no knowledge of, or feeling for, art; and yet, for more than half a century, since gas put out oil, the same form, with scarcely a shade of change, has continued to be manufactured in thousands, not only for the use of the metropolis, but also for the provincial towns; the same description of lamp is reared on the same pattern of pole in remote villages, in the railway stations, and in British possessions abroad. The shape of the street lamp is as strictly adhered to as if it were a matter of caste in India. In connexion with our public buildings, where the skill of the architect has been called in to devise the form of the gas-lamps, the improvement has been great. The chief lights at Buckingham Palace have a handsome appearance, so have those within the railing of the British Museum; and at the Houses of Parliament the lamps are of artistic design, and in harmony with the architecture. Some will say, "What can you do with a lamp-post?" An inspection of some of those to which we have referred will of itself show that elegance can be imparted to what are generally considered matter-of-fact objects.

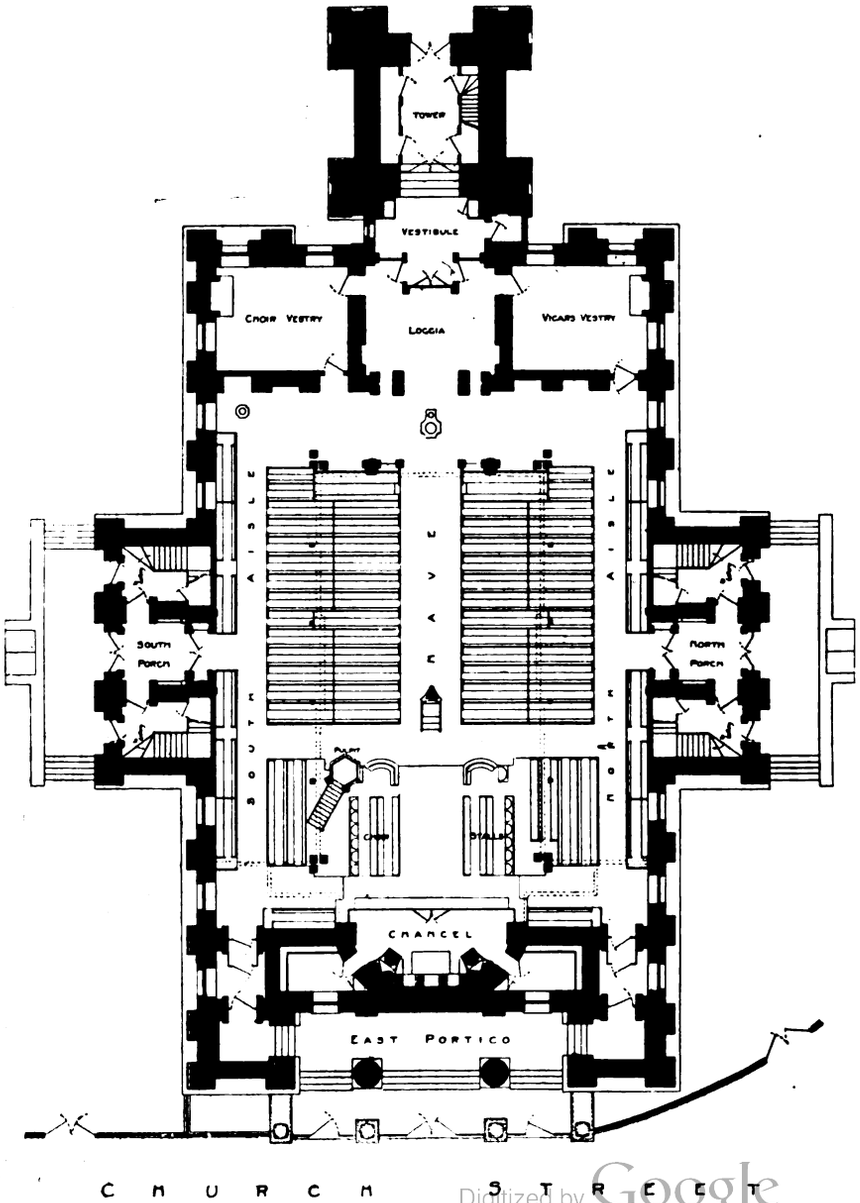
*** A reference to our article of August 21, and the sketches accompanying it, will show that in the fifty years which have elapsed little if any improvement has taken place in the design of street lamps.—ED.

Illustrations.

CHURCH OF ST. ALFEGE, GREENWICH.*

GREENWICH Parish Church was built for about 1,000 sittings in 1711-8 upon the reputed site of the death, at the hands of the Danes, in 1011, of St. Alfege, Archbishop of Canterbury. The tower, erected in 1730, was designed by John James, to whom also has been ascribed, albeit erroneously, the body of the fabric, which is by Hawksmoor. A rare print, lettered "designed by N. Hawksmoor, A.D. 1714," shows the former tower which escaped when the older church fell down, and remained until it was replaced with the tower by James. The organ, by G. England, was enlarged fifty years ago by Walker, and rebuilt by Robson in 1863. In the former church was a portrait on glass of Humphrey, Duke of Gloucester, son of Henry IV., who rebuilt the manor-house as the Palace of Placentia, and the "Castle" (on the Observatory hill), and enclosed the park. Therein were buried Robert Adams, with an inscription, "Egregio viro Roberto Adams, operum regiorum Supervisori, architecturæ peritissimo, *ob.* 1595," and Thomas Tallis,

* "St. Alphege" is, we believe, the usual spelling of the name; but as the authorities at this church spell it "Alfege" in their announcements, we have adopted the spelling in this case.



Plan of St. Alfege, Greenwich.

Digitized by Google

the composer (1585), to whom and his wife Joan was set up a brass bearing a quaint epitaph recording his career in the reigns of Henry VIII.-Elizabeth. There are monuments to John J. Angerstein, whose collection of pictures formed the nucleus of the National Gallery, and Major-General James Wolfe, who on November 20, 1759, was buried in a vault by the side of his father, Lieutenant-General Edward Wolfe, who died, in April of that year, at his residence, now Macartney House, in Chesterfield-walk, Blackheath. A bronze tablet, with medallion portrait, designed by Mr. A. Rost, of Oxford, was unveiled to Wolfe's memory on November 20 last; the window, with a figure of St. George and a representation of West's picture, was given by Mr. F. Fountain, a churchwarden, in 1896. The churchyard, three acres in extent, was laid out by the Metropolitan Public Gardens Association and opened in June, 1889. Five years ago Messrs. Thos. Dinwiddy & Sons were appointed architects for a structural renovation of the exterior of the church.

The design of St. Alfege possesses no very remarkable features; the interior is frankly a preaching-room; no attempt is made at a demarcation into nave and aisles; the gallery supports form the only longitudinal division. A shallow recess forms the chancel proper, decorated with painted coffering and strap-work, after the fashion of its neighbour, the Painted Hall at the Hospital. The saving grace of this interior is the solid and excellent workmanship exhibited in every detail of the joinery. The arrangement of the gallery stairs in shallow transepts, if we may be allowed so to term them, gives a welcome variety to the exterior. At the east end is a recessed portico of the Doric order, whose cornice, supported by pilasters, is continued round the whole building. This, and many other details (such as the broken pediment seen in the drawing, and the design of the base of the tower) show a remarkable similarity to the work of Archer at St. John's, Westminster. Indeed, did we not know to the contrary, it would be hard to believe that St. Alfege is the child of the same brain as St. George's, Hanover-square. The steeple is dignified in design, and takes its stand four-square on the ground, growing from square to octagon and octagon to circle. It may be noted that the belfry and clock stages show points of similarity to the corresponding stages in the steeple of St. Martin-in-the-Fields.

CATHEDRAL CHURCH OF ALL SAINTS, KHARTOUM.

THIS church is in progress, as the English church for Khartoum, from the designs of Mr. R. Weir Schultz.

For climatic reasons the church has been placed on an artificially formed terrace 2 ft. above the general level of the ground, and for similar reasons the floor of the church is raised 4 ft. above the terrace level.

The windows are placed well in from the outer face of the walls, allowing an ambulatory above the passage aisles, and the windows being on the inside of this ambulatory, will be proportionately shaded from the direct rays of the sun. Artificial lighting will be by small hanging electric lamps distributed over the church.

The walls are of sandstone in two colours, yellow and a pale red, from a site about 28 miles from Khartoum, brought down by boats from the quarry to the town. The vaults will be built with small local red bricks. The floor will be of Sudanese marble, and the roof covering of green glazed corrugated tiles, which it is hoped can be made locally. The church is thus being built as far as practicable with local material and almost entirely by local labour, and the design was kept very simple with this object in view from the first.

Mr. John Latimer is clerk of works; and the details of the design are being worked out by the architect, who will also design the furnishings and fittings; and these also, as far as possible, will be made by local craftsmen.

PROPOSED LONDON GOODS CLEARING HOUSE.

THIS is a design for a building for a great scheme which is still in the air, but which may, if it succeeds, effect a great change in facilitating and simplifying goods traffic in London.

The idea is to apply the system of the "Clearing House," as already practised in connexion with banking and railway accounts, to the handling of goods, and to create a great central depôt in London for the reception of goods from all railways and carriers, and their dispatch thence to their destinations. The following summary of the advantages claimed for this method we take from a paper on the subject by Mr. A. W. Gattie:—

"Owing to the speed at which business could be transacted in such a building, it would not only supplant the fourteen railway goods stations which now sprawl over about 680 acres of London's valuable area, but it would also render unnecessary many hundreds of sub-stations and carriers' receiving yards. In addition to this vast saving in space, the Clearing House system would minimise the number of transhipments of goods from vehicle to vehicle, and would greatly reduce the number of vehicles on the streets. In view of the fact that the Royal Commission have stated that an expenditure of some 60,000,000*l.* will be necessary to relieve the congested condition of traffic, this matter is evidently one of importance.

If we turn to the evidence given in 1904 by Mr. W. R. Pryke (the then Chairman of the Bridge House Estates Committee) before the Royal Commission on London Traffic, it would appear that more than half of the vans crossing bridges and traversing London streets are "empty," the remainder being described as "laden," under which category would be included everything from a full load to a single package.

Thus, if, as the Commissioners report, 60,000 vans enter and leave the City every day, 30,000 are empty and 30,000 are, on an average, semi-laden. The Clearing House system would tend towards the provision of a full load for each vehicle coming and going. But it would further minimise the number of vehicles by reducing the actual number of journeys to be performed. For example, under existing conditions, a package for Manchester is collected, say, from Oxford-street by a carrier and taken to his West-end depôt; it is there unloaded and subsequently despatched to the head depôt of the carrier somewhere in the City. It is there *again* unloaded and subsequently despatched to the required railway goods station; on arrival it is unloaded for the third time and placed upon a hand truck and tediously wheeled to the railway wagon destined for Manchester. This railway wagon is then "shunted," and eventually starts for Manchester, where a similar process ensues.

The Clearing House method involves only one loading from the premises of the consignor and one vehicle carrying goods for all destinations, all proceeding to the Clearing House.

On arrival the vehicle would be immediately relieved of its load, which would be removed from it in bulk in a detachable container by a suitable crane, and in a few minutes the same vehicle would be provided with a load in another detachable container, ready sorted for delivery in the district to which this vehicle would return.

To understand the magnitude of the proposed economy, it must be remembered that under existing conditions the detention of a carriers' van while loading and unloading is stated by carriers to extend over some eight to nine hours out of twelve, and that from calculations made from Board of Trade railway returns the detention of a railway wagon on an average extends over twenty-three hours out of the twenty-four, and that during its meagre percentage of activity it, on an average, carries only 1 ton 16 cwt., its full capacity being from 10 to 16 tons. This uneconomic condition of things does much to account for railway freight rates in this country being the highest in the world."

Looking at the section, it will be seen that the Clearing House is constructed on five levels, the lower three each with an area of nearly half a million square feet. The lowest of these levels is the railway level; or, where circumstances permit, the waterway and railway level. The next above it is the road level. These two levels would be served with a complete set of suitable travelling cranes, which would transfer goods from the 2,000 railway wagons which might be berthed beneath to the fleet of carts or motor lorries above, or *vice versâ*. By this arrangement it will be seen that vehicles engaged in transfer of their contents can be brought into immediate proximity to each other, instead of remaining a considerable distance apart, and that with the facilities provided a load of bricks or heavy stone blocks could be dealt with in minimum time and labour and with minimum risk. All goods requiring transfer in bulk would be dealt with on these two lower levels.

Above the road level would be the great sorting-room, also served by a set of travelling cranes enabling goods to be hoisted through wells in the floor to or from either the road or the rail. This sorting-room would be provided with a system of moving platforms connecting all portions of the floor space and also communicating with other moving platforms traversing other parts of the building. It will be necessary to describe these moving platforms in some detail to make the scheme intelligible. For this purpose we will select the platforms or "belts" serving the great sorting-room floor immediately above the road level (see plan). This floor is divided into a number of sorting bays or compartments, each bay representing a city, a district, or a route, as convenience may require. Each bay receives from the overhead crane serving it unsorted goods removed in bulk in a detachable container from the road or rail vehicle underneath. On the arrival of such a container in a sorting bay the contents will be removed one by one by the operator, who will place them one by one on a steel tray or receiving plate. For example, the address on the first parcel will be say, Manchester, it will therefore have to be sent to the Manchester bay, the scheduled number of which might show it to be at the other end of the building. The operator will strike the requisite keys of the "controller" (with which each bay is provided), and on depressing his starting switch the tray will from that moment pass under electro-magnetic control and automatically proceed to the desired destination. The next parcel will perhaps be for the Bristol bay, the scheduled number of which may be at some other part of the building. An empty tray having automatically taken the place of its predecessor, this will again be put under control in the same way, with the same result. Meantime all the other operators in the Clearing House will be doing the same thing, consequently any goods destined for any particular bay will be automatically received by the receiving officer of that bay, and the empty tray will go to supply the despatching side of the bay with the required sequence of "empties."

It will be noted that it is claimed that heavy bales of goods can be automatically taken from a position of rest, set in motion, and brought to a standstill at a predetermined point; and that this can be accomplished by a series of continuously-moving platforms. It will immediately occur to the reader that such an arrangement would involve shock. This, however, is not the case.

The platforms are divided into sections, and each section is provided with a double set of magnetic rollers. These magnetic rollers are mounted in loose bearings, and on being energised by their controllers (to be mentioned hereafter) they draw themselves up to the superimposed tray, which they magnetically seize, and, by revolving, drive this tray into the required position on the platform, and then drop back into their former position, shooting a pair of suitable bolts in so doing. The platform having traversed the required distance, the "controller" will again come into action and energise the rollers, which will again function in the desired manner. The controllers are arrangements of switch-disks, which are actuated by alternating current energising magnets which operate suitable ratchets, each half wave imparting an angular movement constituting a degree on any or all of the disks.

Of the architectural treatment of the proposed Clearing House readers can judge for themselves from Mr. Ayling's perspective view.

We should be glad to see the scheme seriously considered. It might go a good way to solve some of the difficulties in regard to London traffic.

Digitized by Google

HALL'S ALMSHOUSES, BRADFORD-ON-AVON.

THIS building was founded and endowed in 1700 by John Hall for four poor men. The founder was the last of an ancient family who had been associated with Bradford-on-Avon for centuries. It was one of this benefactor's ancestors, another John Hall, who built the interesting but over-elaborate Jacobean mansion of Kingston House near by. The almshouses are built of stone throughout, the blocks used on the front elevation being exceptionally large, even for such a stone-producing county as Wiltshire. Above the two centrally-grouped doorways a beautiful Renaissance panel exhibits on a shield the "three battleaxes" of the Hall family, and the motto "Deo et Pauperibus" (for God and the Poor). One chimney-shaft bears the letter H, surmounted by a coronet, for Hall, the second shaft an M, also with a coronet, for Manvers, the Earl of this name being a lineal descendant of the founder and the present administrator of the charity. The pleasing appearance of the building to-day is largely due to conditions as enviable as they are rare. In the first place the structure is complete, nothing having been added or taken away, while its situation at the junction of two main roads enables one to walk round and view the edifice from all points of the compass. Would that all good architecture could be seen to such advantage.

Bradford-on-Avon has managed to retain quite a number of its old domestic buildings, in addition to its wonderful little bridge chantry, one of three left in England (the others being at Rotherham and Wakefield), and its Saxon church, attributed to St. Aldhelm, the first Bishop of Sherborne, in Dorset.

SIDNEY HEATH.

WOOD FLOORS IN AUSTRALIA.*

"DURING the last few years a great deal has been said about the propriety of supporting local productions, and it is on the subject of Tasmanian and other hardwood floors that I wish particularly to make a few remarks.

About four years ago, I believe, the first blue gum floors were laid down here, and the impression created in my mind by the appearance of the floor after being dressed off, treated with ammonia, oiled and wax-polished, was most favourable. The surface was "satiny," and to the lay mind the floor might have been of oak. I have seen these floors laid down, and everything done in the way of dressing off, staining, and waxing, and the result was somewhat the colour of a paling fence which was well weathered. I found that this was due to the omission of the oil, which brings up and deepens the grain.

There sprung up a great demand for Tasmanian blue gum in consequence of the success of these first few floors; and another result was that, the demand being unexpected, the supply fell short, and the blue gum or messmate from the Otway Forest found its way into the market. This timber has not the good qualities of the Tasmanian, and has other defects of its own, principally Licteus Brunneus, generally known as Borer, which I will mention further on.

A peculiarity of blue gum floors is that, if well seasoned, they should not be laid in the summer, and if not well seasoned they should not be laid at all. In the case of the well-seasoned wood, if laid in the summer and well cramped up, the boards swell owing to the moisture of the winter, and the floor rises in the form of a bow. On the upper floors this is not noticeable, but on the ground floors it causes every piece of furniture to shake and rattle, and necessitates wedging up under the joists. This is often difficult to do, owing to the want of space under the floor. Of course, we cannot select exactly the right weather or time of year to do our building operations, otherwise there would be few defects, and an architect's life would be a most enviable one. But I have noticed that small matters like a shaky floor, or a bell which will not ring, cause more trouble to the client, and of necessity to the architect, than something of a really much more important nature.

Before I leave the blue gum to swell or shrink, as it apparently must do one or the other, I would like to mention the fact that borer is being introduced into our houses in large numbers. A good deal of it comes in the hardwood from the Healesville district, but it is very prevalent in blue gum. I have tried a number of remedies—kerosene, carbolineum, and corrosive sublimate. The latter I believe to be effective, and it is my opinion also that if the undersides of the floor boards were brushed over with carbolineum before being laid, it would be a wise and effective precaution.

Our choice of flooring timbers in this country is limited practically to the imported deals, kauri, blue gum, and jarrah, with occasionally a floor of rimu. In Sydney the tallow wood is largely used for factory and warehouse floors, and wears exceedingly well. Kauri, with its shrinking nature, is too well known to require comment, and I hardly like to speak about rimu, as my experience in this wood is limited, but

* A paper read before the Royal Victorian Institute of Architects, June 29, by Mr. F. L. Klingender, Fellow.

I shall be pleased if the mention of it here will produce some enlightening remarks later on.

I wish to put a strong case forward for the more extensive use of parquet floors for residential work. There is a class of parquet obtainable, consisting of small pieces of oak, walnut, etc., ¼-in. thick, laid to a design, and backed with strong canvas. This has the butting edges free, and the floor may be rolled up for convenience of carriage. The great advantage of this material is that it may be laid down on old floors, and the thickness is so slight that it is not necessary to cut down the floor below it. Of course the real parquet is immensely superior, but it necessitates such alterations, when applied to existing buildings, as to make it exceedingly expensive. A great advantage which parquetry possesses, and which is not generally recognised, is that valuable rugs and carpets will wear much longer than if laid on an ordinary floor.

I would like, before leaving the subject, to say a word or two about secret nailing. Occasionally we are asked by clients to adopt this method in connexion with kauri flooring. Personally I do not favour it, as I believe that the fixing is not sufficient, too much dependence being placed upon the wood itself. A kauri floor well cramped and nailed, and the nails punched and stopped, and the floor well dressed off, will make sure of good results where the other system may be in doubt.

In conclusion, I would emphasise the desirability of natural finish to our floors (that is, where suitable woods are used), as against stain and varnish and other similar horrors."

Legal Column.

THE COMPULSORY ACQUISITION OF PROPERTY.

In our issue for December 12 last we drew attention to a memorandum drawn up by Mr. J. F. MacIlwraith on the Small Holdings and Allotments Act, and to the protest of the Bar Council as to the provision in that Act as to disallowing counsel or expert witnesses without the leave of the Department on arbitrations. The procedure provided by the Small Holdings and Allotments Act for the compulsory acquisition of land is the model adopted by the present Parliament for various purposes; it reappears in the Housing and Town Planning Bill, and again in the Development and Roads Improvement Fund Bill; and public attention should be drawn to this very one-sided form of procedure on proceedings to acquire land compulsorily.

The Department, which has administrative functions in connexion with the working of the Acts and an interest in the arbitration, in the first place appoints the arbitrator under the Small Holdings Act and the Town Planning Bill, and the Department has an absolute discretion as to whether the parties interested may be represented by counsel or may call expert evidence. If the Department confirms an order it is absolutely conclusive and the Courts cannot interfere. The arbitrator nominated by the Department is selected by them as a person fit to act "on his own knowledge and experience," and his known views may have had something to do with his appointment; the authority acquiring the land may be represented by a highly-skilled advocate such as a Clerk to the Council, who may be counsel; but the person whose land is to be acquired is taken before this tribunal without the ordinary right accorded even to criminals of being represented by counsel and calling witnesses. Mr. Burns attempted to justify this procedure by saying that it was to the interest of the local authority to save money being spent upon counsel and witnesses, so that more money should be available to buy more or better land for the erection of more and better cottages. This argument loses sight altogether of one party to the arbitration, the person whose land is being acquired. Mr. Burns also alleged that the system had worked fairly under the Small Holdings Act, and that until evidence could be adduced that it worked unfairly it should be extended. He appears to have overlooked the case *ex parte* Ringer, noted in the *Builder* July 24, and the observations of the judges on the system and its results.

In the Development and Road Improvement Fund Bill one concession has been made—the arbitrator is to be appointed by the Lord Chief Justice in England, and this is one step in the right direction. We are strongly in favour of speedy and cheap procedure, but averse to departmental autocracy. Besides the impartiality of the tribunal which could be secured as in the Development Bill, the right to be represented by one counsel and an ultimate appeal to the Courts should be conceded where private rights are interfered with and private property is being compulsorily acquired. In nine cases out of ten the decision of the arbitrator should be accepted, but in the tenth case grave injustice may be done or more serious interests may be concerned, and the Department which is concerned in the administration of the Acts, and which appointed the arbitrator and directed how the parties should be represented and what class of evidence they might call, should certainly not be the final arbiter. Right of access to the Courts has been conceded in the Finance Bill, and it should be conceded in every case where private rights are expropriated.

NEW STREETS.

The case of Attorney-General *v.* Gibb (current *Law Reports*) is one of considerable importance to builders and landowners. One Gibb had purchased some land in the Borough of Tenterden, and he employed a builder (Weeks) to build some cottages upon it. One block of cottages was to face a road called Station-road; the other block lay some way back from this road, and the approach to these cottages was a pathway between an old agricultural hedge and a "spinal" fence which had been erected 6 or 7 ft. from the front of the second block of cottages. This pathway extended a distance of 202 ft. from Station-road, and was only 5 or 6 ft. in width. The Urban Sanitary Authority, under sect. 157 of the Public Health Act, 1875, had made by-laws with respect to the construction of new streets, and these by-laws provided that where a new street exceeded 100 ft. in length its width should be at least 36 ft., and it should be constructed for use as a carriage-road, if it formed the principal means of access to any building. The facts are rather complicated because, when the plans were submitted to the local authority, objection was taken to the footway, and the builder, without referring to the owner, undertook that as soon as land could be obtained a 36-ft. road should be constructed. Nothing having been done by the owner to carry out this undertaking, which was, in fact, not communicated to him, an action was commenced by the Attorney-General, at the relation of the Council, for a declaration that the defendant had laid out a new street in contravention of the by-laws, and for a mandatory injunction requiring the defendants to lay out a road of the prescribed character. Sect. 4 of the Public Health Act, 1875, defines "street" as including "any highway (not being a turnpike road) . . . and any road, lane, footway, . . . or passage whether a thoroughfare or not," and the Court held that "new street" in sect. 157 could not be confined to new streets in the popular sense of roadways with houses on each side, but that whatever was a street within sect. 4 might become a "new street" within sect. 157. The Court, having considered the by-laws, found that there was no reason for saying that the by-laws were *ultra vires* or that the width specified for the roads was unreasonable as applied to a footpath to cottages, and the injunction was granted, but its operation suspended.

It would appear that by-laws such as this must in certain districts hinder landlords from furnishing additional cottage accommodation, as to build six cottages is a trifling matter compared to laying out and constructing a carriage-road 36 ft. in width, but in urban areas such as that in the case in question they are possibly necessary as, for the removal of dust, etc., the cottages must be easy of approach; a consideration of such a case as this, however, well illustrates the undesirability of the local authorities in rural districts applying by-laws only applicable to urban areas, which is sometimes the case. Before leaving the subject, one word may be said about the position in this case of the builder and the owner. The Court held that, on an action for breach of by-laws, as Weeks was the agent for Gibb for the purpose of discussing the plans with the Borough Surveyor, his want of authority was no defence to the action for an injunction by the Attorney-General, but Weeks, not being a proper party to the action since he had not control of the land, would technically have the action dismissed as against him, the injunction being allowed as against Gibb.

LONDON AND DISTRICT BOROUGH COUNCILS.

Deptford.—In connexion with tramway developments the Improved Wood Pavement Company, Ltd., is to undertake wood paving works in Malpas and Shardeloes roads, the contract price being 8,669*l.* 11s. Messrs. W. H. Wheeler & Co., Ltd., are to undertake the paving of footways in the same roads, at a cost of 690*l.* 11s. The Lighting Committee recommended the acceptance of an offer by the South Metropolitan Gas Company to convert the whole of the burners of the street lamps to the inverted type, at an initial cost of 261*l.*, and at an increased expenditure per annum of 879*l.* The report was, however, referred back by the Council at their meeting on Tuesday evening with instructions to bring same up again in one month. Plans have been passed as follows:—Messrs. J. Shorter & Co., five houses, Ffinch-street; Messrs. Maynard Brothers, three houses, Briant-street.

East Ham.—Dr. G. Sowden, the Medical Officer of Health, in his annual report, says that the following improvements are required in the Public Health equipment of the borough:—A new mortuary, discharge block at isolation hospital, public health offices, covered public swimming-bath.

Hackney.—Owing to unexpected demands for power, the work of providing a new feeder for the Hackney Wick district, with certain distributor links, and which it was thought would not be necessary for some months, is to be put in hand immediately. The cost is estimated at 3,650*l.* A sewer in Durrington-road is to be reconstructed, and three new manholes provided, at a total cost of 340*l.* Plans have been passed as follows:—Messrs. Young & Hall, additions to mortuary and covered way at Metropolitan Hospital, Kingsland-road; Mr. S. H. Barclay, fifteen houses, Ashtead-road (Spring Hill). The following have submitted plans:—Mr. A. Monk, factory, offices, stables, etc., Berkshire-road, Hackney Wick; Mr. W. H. Elsdon, two-story storeroom at rear of 38, Albert-road, London Fields.

Harrow (Middlesex).—Dr. Little, the Medical Officer of Health, in his annual report, says that married men with large families have difficulty in finding housing accommodation, and he recommends the local authority to consider the desirability of providing accommodation which could be let at a moderate rent to meet this difficulty.

Hayes (Middlesex).—Dr. Higginson, the Medical Officer of Health, in his annual report, expresses the opinion that there would be a demand for cottages in that district at a rental of 5s. to 6s. per week, if such could be built.

Hendon.—Plans have been passed by the Rural District Council for four houses in Belmont-road, Pinner, for Mr. W. Strawbridge.

Stoke Newington.—Professor Henry Kenwood, the Medical Officer of Health, in his annual report, says that as the results of decentralisation a large number of empty houses are to be seen in most parts of the metropolitan area, but the reduction of the density of population per acre thereby involved is not accompanied by a reduction in the density per room, and overcrowding still continues. What is needed in the outskirts of the metropolitan area is accommodation at 2s. per

room per week. It is impossible to construct dwellings to be let at that rental, but it is worthy of consideration as to whether some of the older empty houses, which are now to be obtained at a very low price, could not be adapted structurally as tenement houses at 2s. per room. Meanwhile, it is clearly the duty of Public Health authorities to wage war against insanitary dwellings, so as to make them no longer profitable for the slum landlord. It is strange that as recently as twenty years ago the housing problem in London appeared to demand for its solution the provision of more houses, whereas to-day there is a superabundance of houses, and yet the problem remains as serious as ever.

Watford.—The Surveyor of the Rural District Council has prepared plans for making-up, draining, kerbing, etc., Abbots-road, Abbots Langley. The estimated cost is 6,430*l.* The work is being undertaken to meet the requirements of the County Surveyor, but an effort is to be made to reduce these requirements. Plans have been passed as follows:—Mr. W. G. Taylor, Chorleywood, two houses, Christ Church-crescent, Radlett; Mr. Wright, four cottages, North-road.

Wimbledon.—Repairs are to be carried out to five streets, at an estimated cost of 507*l.*, and four roads are to be made up, at an approximate cost of 440*l.* Richmond-road is to be made up immediately after a Local Government Board inquiry has been held into an application for a loan. Messrs. Stroode & Co. are to install a heating system at the Isolation Hospital, the contract price being 639*l.* 10s. There is other building work to be carried out in connexion with the installation which will cost 160*l.* The following plans have been passed by the Council:—Mr. C. W. Maplesden, addition to Christ Church, Aldwyne-road; Mr. T. Holloway, additions to Anglo Engraving Company's works, Kingston-road. Plans have been lodged as follows:—Messrs. Flood & King, for extensions to leather works, South-road; Messrs. Richard, Richardson, & Gill, conversion of Worple Hall into skating-rink; Mr. J. C. Walker, twenty-two houses, Panmuir-road.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERCYNON.—Chapel and school; Secretary, Presbyterian Forward Movement, Abercynon.

Abertridwr.—Men's institute, Windsor Colliery; Secretary, Windsor Colliery Company, Abertridwr.

Aldershot. — Secondary school (12,000*l.*); Messrs. Kingham & Kingham, architects, Grosvenor-road, Aldershot.

Anderston (Glasgow).—Extensions to St. Patrick's Church (10,000*l.*); Mr. F. W. Burke, architect, 32, Walter-street, Glasgow.

Astley Bridge.—Library; Messrs. Bradshaw & Gass, architects, Bolton; Mr. R. Carlyle, builder, Old Trafford.

Atherstone.—Extension to hospital; Clerk to the Guardians, Atherstone.

Beverley. — Mission hall, Church-lane; Trustees of St. Nicholas Church, Beverley.

Blarden.—School (10,000*l.*); Mr. J. M. Monro, architect, 28, Bath-street, Glasgow.

Blaydon.—Secondary school: Mr. W. Rushworth, architect, Shire Hall, Durham.

Bloemfontein. — School; Mr. Stafford, builder, Sunderland.

Bolton.—Library, Great Lever; Messrs. Bradshaw & Gass, architects, Bolton; Mr. J. Cocker, builder, Walkden.

Bootle.—Institute; Messrs. Shepherd & Bower, architects, Victoria-street, Liverpool.

Brechin.—Additions to infirmary; Mr. W. Fettes, architect, 31, St. David-street, Brechin.

Broadford.—Church and manse; Trustees, United Free Presbyterian Church, Skye.

Broughton Moor. — Hospital (3,500*l.*); Borough Surveyor, Mr. H. B. Williams, Workington.

Cambridge. — Pumping-station; Mr. J. Julian, Engineer, Town Hall, Cambridge.

Castle Douglas.—Drill hall (1,400*l.*); Messrs. McCrombie & McKenzie, architects, Dumfries.

Chapel-en-le-Frith.—P.M. church, for the Trustees.

Cheltenham.—Extensions, Ladies' College; Mr. E. Waller, architect, College Green, Gloucester.

Cowdenbeath.—Port-office; Mr. C. Barclay, architect, Cowdenbeath; Mr. D. E. Walker, builder, Cowdenbeath.

Cowpen.—School; Mr. J. Forrest, architect, Moot Hall, Newcastle-on-Tyne.

Cumberland.—Additions, Camerton Hall; Mr. J. H. Martindale, architect, Carlisle; Mr. T. Johnson, builder, Workington.

Deal.—Additions, Wesleyan school; the Trustees, Wesleyan Church, Deal.

Digby.—Extensions, parish church; Mr. A. Bond, architect, Grantham.

Eastbourne.—The Town Council has passed the following plans:—Addition, "Clovelly Kepplestone," Staveley-road, Mr. F. G. Cooke, architect; addition, Eastbourne Gasworks, Mr. J. Coster, architect; motor-house at "Carberry," Fairfield-road, Messrs. Miller & Selmes, builders; addition to Clifton Hotel, South-street, Mr. J. G. Ensor, architect.

Edinburgh.—Mills for Hill, Craig, & Co., paper manufacturers, Balerno.

Epsom.—The Rural District Council has passed plans lodged by Mr. P. M. Walters for buildings in Crampshaw-lane.

Goole.—Additions to Isolation Hospital; Clerk to the Guardians.

Govan (N.B.).—Skating-rink; Mr. G. A. Boswell, architect, 53, Bothwell-street, Glasgow.

Great Harwood.—Fifteen houses, Hartley-street; Mr. W. Griffiths, architect, Great Harwood. Twelve houses, Park-lane; Messrs. Scott & Proudlove, architects, Great Harwood.

Halliwell.—Library; Messrs. Henderson & Brown, architects, Bolton; Messrs. E. & D. McGuinness, builders, Bolton.

Hammish.—Church; Mr. W. Bowers, builder, Hereford.

Haslingden Crane. — Mission hall, St. Stephen's Church; Mr. H. Fielding, architect, Haslingden.

Hawarden.—Isolation hospital (3,500*l.*); Surveyor, Rural District Council.

Highampton.—School; Mr. P. Morris, architect, 1, Richmond-road, Exeter.

Highbridge.—School; Messrs. Samson & Cottam, architects, High-street, Bridgwater.

Hindley.—Grammar school (12,000*l.*); Mr. R. Pennington, architect, Wigan; Mr. A. Wigan, builder, Ince, Lancs.

Hove.—The Town Council has passed the following plans:—Eighteen pairs semi-detached houses, Lyndhurst-road, Mr. W. H. Overton, for Messrs. Curling & Co.; six pairs semi-detached houses, Wish-road, Messrs. Barnard & Son.

Hull (East).—Additions to Liberal club; Mr. A. Thorp, architect, Hull.

Hungerford.—School; Mr. E. Fisher, architect, 10, Buckingham-street, Strand, London, W.C.

Kenfil Hill (Bridgend). — Police-station; County Surveyor, County Hall, Bridgend.

Kilmallie.—Church; Mr. P. M. G. Chalmers, architect, 95, Bath-street, Glasgow.

Kirkcudbright.—Drill hall (3,000*l.*); Messrs. McCrombie & McKenzie, architects, Union-chambers, Dumfries.

Leigh-on-Sea.—Congregational church, for the Trustees.

Leith.—School (10,000*l.*): Mr. J. Craig, architect, 85, Duke-street, Leith.

Liverpool.—Flour mill, Soho-street: Messrs. R. Owens & Sons, architects, 3, Crosshall-street, Liverpool. Skating-rink; Mr. G. Dalton, architect, Lord-street, Liverpool.

Lumphinnasus.—Additions to school; Mr. J. Scott, architect, Inverkeithing.

Lurgan.—Bank; Mr. Vincent Craig, architect, 5, Lombard-street, Belfast.

Maesteg.—Nineteen houses, Meadow-street; Mr. Owen Jones, architect, Maesteg.

Newton Abbot.—Secondary school; Mr. P. Morris, architect, 1, Richmond-road, Exeter.

Newtownards.—Extension to church (1,300*l.*); Mr. T. Paisley, builder, Newtownards.

Ninebanks.—School; Mr. J. Forrest, architect, Moot Hall, Newcastle-on-Tyne.

Northampton.—The following plans have been passed by the Town Council:—Additions to factory, Magee-street, Messrs. Crockett & Jones; additions to factory, Ash-street, Messrs. Stead & Simpson, Ltd.; five houses, Garrick-road, Mr. R. Cosford; seven houses, Knight's-lane, Mr. W. S. Brown.

Old Trafford.—Deaf and dumb school; Messrs. Barker, Ellis, & Jones, architects, 20, Cooper-street, Manchester

Orsett.—Extensions to Workhouse; Mr. C. M. Shiner, architect, Grays, Essex.

Plymouth.—Laundry at Workhouse; Clerk to the Guardians.

Ramsey. — Isolation hospital; Surveyor, Urban District Council.

Rastrick.—Additions to Grammar School (2,000*l.*); Mr. Stocks Sykes, architect, St. Peter's-street, Huddersfield.

Runcorn.—Eighteen houses; Mr. M. Collins, Runcorn.

Ryhope.—School; Mr. W. Rushworth, architect, Shire Hall, Durham.

Sandbach.—School; Mr. Beswick, County Architect, Chester.

Seaforth.—Asylum (14,000*l.*); Clerk to the Lancashire Asylums Board.

Sheffield.—Offices and messroom at Lumley-street destructor; Messrs. Wellerman Bros., builders, 223, Attercliffe-road, Sheffield. The Town Council has passed the following plans:—Lodge at Firth Park, City Architect, Sheffield Town Council; additions to premises, Merton-lane, Messrs. Stringer & Co.; additions to premises, Newhall-road, Messrs. Sanderson, Bros., & Newbould, Ltd.; additions to premises, Bessemer-road and Faraday-place, Messrs. Jonas & Colver, Ltd.; seven houses and stabling, Mount View-road and Warminster-road, Mr. W. Hall; five houses, Woodbourn Hill, Mr. Albert Swift; four houses, Wincobank-avenue, Mr. G. E. Pye; additions and alterations to premises in South-street Moor, for the General Post Office; four houses, Holmhirst-road, Mr. S. Higton; six houses, Holmhirst-road, Mr. W. Stockton; additions to Montgomery Hotel, St. Mary's-road and Suffolk-lane, Messrs. Duncan Gilmour & Co., Ltd.; church, Bold-street, Mr. Oates; tramway depôt, Shoreham-street and Leadmill-road, for Sheffield Corporation Tramways Committee; additions and alterations to premises in Westbar and Workhouse-lane, also additions to Firvale Workhouse, for the Guardians; five houses, Dixon and Wynyard roads, Mr. W. H. Oldfield; six houses, Little-lane, Mr. A. J. Brown, jun.; forty-eight houses, Allerton-road, Spofforth-road and Harrogate-road, Mr. F. U. Laycock; additions to premises, Princess-street, for Messrs. J. Smith's Tadcaster Brewery Company, Ltd.; twenty houses and stabling, Frickley and Fulney roads, Mr. A. E. Gosling; seven houses, Clifford-road and Psalter-lane, Messrs. H. Brumby & Son; additions and alterations to premises in Norfolk-street, Messrs. Mappin & Webb; additions to premises, Sylvester-street, Messrs. Stephen Fisher & Co.; additions to premises in Shoreham-street, Messrs. S. S. Brittain & Co.; six houses, Wade-street, Mr. J. Lidster; sorting office, Smithy Wood-road, Messrs. H. Boot & Son; alterations to Prince of Wales Hotel, Westfield-terrace, Messrs. T. Berry & Co., Ltd.; four houses, Stanford Grove-road, Mr. C. H. Burden; vicarage house, Barnsley and Horndean roads, for the Rev. L. E. Day; four houses, Duncan-road, Messrs. J. & T. Andrews.

Silksworth.—Sunday-school; Mr. H. J. Cook, architect, Silksworth.

Southend-on-Sea.—Roman Catholic church, Southchurch-road; Father Van Meenen, Southend-on-Sea.

Stockton.—School; Mr. J. Sanderson, architect, 134, High-street, Stockton.

Stoneferry.—Oil mill, for Messrs. Barton & Waterhouse, Hull.

Strabane.—Additions to Workhouse; the Guardians, Strabane.

Tanfield.—School (3,500*l.*); Mr. Hunter, builder, Washington.

Trundon Grange.—Twenty-five villas. Mr. R. Downs, architect, Trundon Grange.

Wakefield.—Home for children; Clerk to the Guardians.

Wallasey.—House (1,500*l.*); Mr. R. Hulmes, architect, North John-street, Liverpool.

Warrington.—Administrative block at Sankey Sanatorium (783*l.*): Mr. J. Dolan, builder, Napier-street, Warrington. The Town Council has passed the following plans:—Alterations to auction-room, Knutsford-road, Mr. Atkin; lounge and lavatories, Rylands-street, for the Royal Court Theatre Company, Ltd.; premises, Market-gate, for Messrs. Boots, Ltd., head office, Nottingham; additions to skating-rink, Wilderspool Causeway, for the Palatine Rinks Company, Ltd.

Whinney Hill.—Church; Trustees, Parish Church, Rotherham.

Wigan.—The Town Council has passed the following plans:—Four houses, Northumberland-street, Mr. H. Dickinson; additions to workshop, Wallgate, Messrs. J. H. Peck & Co., Ltd.; workshop, Gidlow-lane, Mr. C. Mynekyme.

Wigglesworth.—Chapel; Trustees, Wesleyan Church, Wigglesworth.

Withypool.—Residence; Messrs. Tollit & Lee, architects, St. Aldate-street, Oxford.

Woodhall Spa.—Additions to St. Peter's Church (1,000*l.*); Trustees of Church.

Competition News.

EXTENSION TO GRIMSBY TOWN HALL.

The assessor, Sir W. Alfred Gelder, F.R.I.B.A., was to present his award to the Finance Committee of the Corporation at their meeting on Wednesday, the 8th inst., and the Committee were to report to the Town Council at its meeting on the 10th. The Committee will arrange the dates between which the drawings will be on view, and the decision of the Town Council will be published during the week following the 10th. One hundred and four architects applied for particulars. Of these forty-five returned the papers and had their deposits refunded, leaving fifty-nine deposits in the hands of the Corporation. Fifty architects sent in fifty-one designs (one competitor submitting an alternative scheme).

[By telegraph we are informed that the Committee recommend Messrs. Eade, Johns, & Browne (Ipswich) for the 1st premium; Messrs. Withers & Meredith (London) for the 2nd; and that the question of the 3rd premium is

referred back to the assessor. We give the information as worded, without exactly understanding why the Committee and not the assessor are named as awarding the premiums.]

NEW COUNTY COUNCIL OFFICES, READING.

At the Assize Courts, Reading, on Saturday, the designs of Messrs. Warwick & Hall, of South-square, Gray's Inn, London, W.C., were chosen for the proposed new offices of the Berkshire County Council in The Forbury, Reading. The second and third premiums were awarded respectively to Mr. E. J. Shrewsbury, of Maidenhead; and to Messrs. Wills & Anderson, Bloomsbury-square, London.

Trade Catalogues.

MESSRS. LOCKERBIE & WILKINSON (Tipton) have sent two well-produced and interesting catalogues. The first contains full details and prices of various kinds of ball-bearing fittings for sliding doors, folding partitions, etc., and of overhead runways for warehouses and workshops. Illustrations of wrought-iron sliding doors are also given. The other catalogue deals with ornamental and constructional work in wrought and cast iron, and contains examples of well-designed railing and gates, balustrades, balconies, grilles, weather-vanes, signs, lamps, dog-grates, etc.; the constructional work includes conservatories, roof principals, and fire-escape stairs. The same firm have sent us from their Birmingham head office a catalogue containing numerous illustrations of ornamental rainwater heads and pipes, which are made of either lead or iron; many of the designs are excellent. The rainwater and soil pipes of lead or iron have special ears of simple but interesting design, and some of them are provided with the "Duecless" patent fixing. Rainwater gutters, ornamental wrought-iron railings, and constructional steel and iron work are also illustrated. Leaflets and cards have been sent us by the same firm containing particulars of their automatic penny-in-the-slot locks for public lavatories, etc., door springs, ball-centre-bearing axle pulleys, kitchen ranges, the "Locwil" firegrate without front bars, and the N.A.P. weightless window fittings. From Messrs. Lockerbie & Wilkinson we have also received a very artistic catalogue entitled "A Few Examples of Select Brasswork for Architects." The illustrations are printed on toned paper, and include door-knobs, lever and grip handles, finger-plates, thumb handles and plates, rim-locks with ornamental cases, bell-presses, casement stays, bolts, and fasteners, letter plates, etc. All the designs are interesting, and the catalogue will certainly be appreciated by architects.

The Nautilus Fire Company have sent us a four-page catalogue containing fifteen illustrations of their patent "Bush" fire. This is a firegrate without front bars. The bottom consists of a pyramidal firebrick, with a narrow grating on three sides between it and the firebrick body. An ashpan is provided to collect the ash, and the metal front is fitted with a ventilator. The illustrations lead us to think that the grate will be economical and efficient, and some of the designs for the metal surrounds are decidedly above the average.

The Albion Clay Company (Woodville, Burton-on-Trent) have sent us useful illustrations of their well-known "Paragon" pipes, and of gullies with "Paragon" joints, and also of intercepting traps, with the clearing-arms fitted with screw plugs, "Lever" air-tight brass stoppers, etc. The "Lever" stopper can be opened from the surface of the ground by means of a chain attached to the lever of the stopper.

The North of England School Furnishing Company (Darlington) have sent us their new catalogue of school furniture, gymnastic apparatus, chairs, and stools, Wilks's patent "Climax" folding partitions, technical and art school fittings, church seating and pulpits, library and office furniture, etc. The catalogue contains 140 pages, and is well bound and fully illustrated. Architects will find it a very useful reference book.

Messrs. Previté & Co. send us a pamphlet entitled "Trinidad Lake Asphalt," giving particulars concerning the concession for working the pitch lake in Trinidad, the average output of which has reached the total of about 150,000 tons per annum. The book also contains useful data relative to the nature, chemical composition, and properties of crude and purified asphalt, together with other information interesting to users of this valuable substance.

Messrs. Edmond Coignet send us an illustrated circular on the Coignet system of armoured concrete construction as applied to mining and similar industries. Among the works illustrated and briefly described are coal-washery bunkers at the Powell Duffryn Colliery, South Wales; coal bunkers at Gennevilliers, Paris; a pit head at Marles, France; coal bunkers at Rainham, Essex; and ore bins at West Hartlepool. These and some other structures not mentioned by name are examples suggesting the suitability of reinforced concrete for various industrial purposes where strength and durability are important factors.

We have received from Messrs. J. C. Fuller & Son, Bow, a pamphlet describing the Fuller Electric Geyser for giving an instantaneous supply of hot water for baths and domestic, trade, and professional purposes. The device seems highly ingenious, and where there is an electric supply it could generally be installed at once without any difficulty. It is necessary, however, to find out whether the water used is "hard" or "soft." In London, for instance, the water is fairly hard, and so its resistance to electric flow is less than the resistance of the water in Manchester or Liverpool, which is very soft and pure. Hence the applied electric pressure has to be less in London than in other towns. When small quantities of water are required, as for a washstand in a bedroom, etc., we think that this geyser will prove most useful. But for those who want a hot bath containing at least 5 cubic ft. of water (32·5 gallons) the expense seems to us to be prohibitive. From tests quoted in the pamphlet, which seem to us to be quite trustworthy, it appears that it would take more than half an hour to get the requisite quantity of hot water, even assuming that no heat was lost in the process. It would also cost at least 8d.

We have received from Messrs. Wm. Geipel & Co., Vulcan Works, S.E., illustrated leaflets and a description of their "economical lamps." The economical "pull-string" type of lamp has two filaments, one of ordinary, and the other of very low candle power. By simply pulling a string either filament is put in circuit. These lamps are of value in bedrooms, passages, etc., as appreciable economies can be effected by their use. They are extensively used in America. The "hylo" long cord lamp is an improved type. The switch has a rotary action when pulled by a flexible chain. The first pull turns the lamp on to its full power, the next reduces it to one candle, and the last turns the light out. Everything is then in exactly the same state as at the start, and so the action can be repeated.

BOOKS RECEIVED.

NORMAN ARCHITECTURE IN CORNWALL. By Edmund H. Sedding, F.R.I.B.A. Pp. 464. (Ward & Co. 7s. 6d.)

BRITISH RAINFALL, 1908. By Hugh Robert Mill. Pp. 304. (Edward Stanford. 10s.)

SHIPPING MARKS ON TIMBER: 1909 Edition. Pp. 98, and maps. (W. Rider & Son. 7s. 6d.)

BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND. By R. W. Billings. Parts XV. and XVI. (T. N. Foulis, Edinburgh. 1s. each Part.)

THE CONCRETE INSTITUTE: *Transactions;* Vol. I. Part 3. (Offices of the Concrete Institute.)

Correspondence.

REINFORCED CONCRETE.

SIR,—May I ask to whom the credit is due for the invention of reinforced concrete? I was with some friends the other evening and we got talking about the durability of this method of construction, and then as to where it was first used. An American, who was present, gave the credit to New York. If he was correct, it seems strange that there have been—as stated in your current issue—more failures with reinforced concrete in the United States than in any other country. LONDONER.

*** In England reinforced concrete started by the use of iron beams in concrete floors. In America several people followed our example, and long ago began to develop fire-resisting floors on that principle. In France, we believe, reinforced concrete grew out of the flower-pot patent of Monier (1865), the regular Monier system of reinforced concrete following and being gradually developed a few years after Then came Hennebique and Coignet, and after them the deluge. We do not think any one person can be given the credit for actually inventing reinforced concrete.—ED.

DOMESTIC ENGINEERING.

SIR,—We notice in your esteemed publication of the 4th a letter signed by G. A. Humphreys (page 265), wherein he refers to *Domestic Engineering* as the publication of the National Radiator Company, Ltd. This firm has no interest whatsoever in this paper beyond being advertisers of long standing, and as this statement in your paper may lead to a serious misconception, we would be glad if you will have it corrected.

L. BABBITT,
Publisher and Proprietor,
Domestic Engineering.

General Building News.

ST. PAUL'S CHURCH, TRURO.

It has been decided to build the tower of St. Paul's, Truro. The church was to a large extent remodelled from designs of the late J. D. Sedding. Mr. Edmund Sedding has been appointed architect for the tower.

WESLEYAN CHAPEL, LYNTON.

The foundation-stones were recently laid at Lynton of a new Wesleyan Methodist Chapel. The building will have seating accommodation for 300 worshippers. The cost, including site, will be about 3,200*l.*, and it is intended to also provide class and school rooms. The scheme has been planned by Messrs. La Trobe & Weston, Bristol, the contract, amounting to 2,000*l.*, having been secured by Messrs. Bovey & Son, Torquay.

SCHOOL ENLARGEMENT, BOLLINGTON CROSS.

The Bollington Cross Church schools have been enlarged and improved, at a cost of about 2,000*l.* The work was carried out by Mr. W. T. Beard, and Mr. Oakley, architect, of Manchester, was responsible for the plans.

SUNDAY-SCHOOL SCHEME, NODDFA.

With the object of modernising the Sunday-school in its methods and organisation, the members of the Baptist church at Noddfa, Treorky, have a scheme on hand, involving an expenditure of over 6,000*l.* Their new building, Beulah, which has just been opened, forms a part of that scheme, and has cost 1,450*l.* The plans were drawn by Mr. T. D. Thomas (of the firm of Messrs. W. D. Morgan, Pentre), and the contractor was Mr. Gwynne Edwards, of Treorky.

GRAMMAR SCHOOL FOR GIRLS, HANDSWORTH.

The Governors of King Edward's Foundation have undertaken the erection of a new grammar school for girls at Handsworth, and a beginning has now been made with the work of construction. The school is being erected on a site in Rosehill-road, and will cost a sum of 36,000*l.*, exclusive of the outlay necessary for furnishing. Accommodation will be provided for 450 girls. The building will be constructed of thin brown "Black Country" bricks and white Hollington stone. It will comprise two floors and a basement. In the centre will be the assembly hall, 100 ft. long, 44 ft. wide, and 42 ft. high. Corridors will be constructed throughout the school on both floors, so that each classroom can be reached without passing through any other room or even entering the assembly hall. On the upper floor the assembly hall will be overlooked by windows from the corridors, and it will be possible to utilise these as galleries for spectators on the occasion of prize givings and other gatherings. A principal feature of the construction of the school is that the classrooms, of which there will be nine on each of the two floors, will all have the same dimensions, 22 ft. 6 in. by 23 ft. 6 in. Main staircases will be placed at each end of the central portion of the building. The south wing will contain on the ground floor the room and office of the head mistress, classrooms, mistresses' common-room, a special room for stationery and the storing of books, and a library. The north end of the building will have on the ground floor a cookery-room, 54 ft. 9 in. by 74 ft., with pantries and larders in addition. A scholars' dining-room, 42 ft. by 75 ft. 6 in., as well as a caretaker's house, will also be comprised in this part of the building. The classrooms on the upper floor include a small one additional to the other nine of uniform dimensions. Upstairs the south wing comprises a special room for needlework, and a science-room. Attached to this will be a special lecture-room, and another room, provided for the botany classes, will have a small conservatory adjoining, where the pupils can observe the growth of their plants. The northern end of the first floor will contain two art-rooms and a small room for special classes, while a room called the hospital will be provided for the first-aid treatment of accidents. In regard to the basement advantage has been taken of a decided slope in the ground to the north to place the heating apparatus and coal store at a low level, so that the coal carts can be backed straight in and can deposit their loads beside the boiler. Adjoining the boiler-house will be a large fan-room, and apparatus will be installed to circulate the air throughout the building by means of exhaust fans. Each room in the school will

Digitized by Google

be separately connected with the special heating and ventilating systems. The basement will also contain the gymnasium, 54 ft. by 23 ft., a cloakroom, with special provision for drying clothes on wet days, lavatories, special cloakroom, and lavatories for the mistresses, and a bicycle-room. In addition there will be a playroom, 120 ft. by 22 ft., from which there will be an exit into the playground. It is intended that a portion of the plot shall be converted into an Alpine garden. The architects of the new school are Messrs. J. A. Chatwin & Son (Architects to the Foundation), and the contractors Messrs. Collins & Godfrey, of Tewkesbury. The estimate of Messrs. Ashwell & Nesbit for the heating and ventilating apparatus has been accepted.

NEW BUILDINGS IN LONDON.

Rebuilding No. 102, Hatton-garden, E.C., for Messrs. John Jaques & Sons, 53, Hatton-garden, E.C.; rebuilding 19-21, Oxford-street, W., Messrs. Rice & Son, builders, 15, Stockwell-road, S.W.; business premises, flats, and houses, corner of Henrietta-street and Wimpole-street, W., Messrs. Elliott, Son, & Boyton, surveyors, 6, Vere-street, W.; shop, showrooms, etc., corner of James-street and Gray-street, W., Messrs. Ford & Walton, builders, 242, High-road, Kilburn, W.; extensive alterations, 500, Oxford-street, W., Messrs. Fred Sage & Co., 58-62, Gray's Inn-road, W.C.; extensive buildings, corner of Rathbone-place and Oxford-street, W., Messrs. Prestige & Co., builders, 149, Grosvenor-road, S.W.; buildings, Bond-street and Brook-street, Mr. C. F. Kearley, builder, 4, Great Marlborough-street, W.; electric theatre and tea-rooms in Oxford-street, Mr. Melville S. Ward, architect, 104, Victoria-street, S.W.

NEW BUILDINGS IN SWANSEA.

The Swansea District Council Plans Committee has approved the plans of the following:—D. J. Evans, Tirdeunaw, eight houses; W. T. Davies, Morriston, one house; Geo. Jeremiah, Loughor, stable and scullery; Evan Thomas, Upper Loughor, one house; Henry Davies, two houses, Dunvant; new chapel, Loughor; Richard Hughes, Llangyfelach, additions; D. Francis, Loughor, one house; — Jenkins, Gowerton, one house; — Pugsley, Gowerton, two houses; F. Simpson, Gowerton, workshop; Methodist chapel, Cwmrhydyceirw. A plan, submitted by Mrs. Martha Richards, for a skating-rink at Gorseinon, has been adjourned, and also a plan submitted by J. Davies, Llangyfelach, for a bungalow; and by John Davies, Pontlliw, for a house, disapproved.

PROPOSED VILLAS, ETC., MARKET RASON.

At a recent meeting of the Market Rason Urban District Council, plans of two semi-detached villas, to be erected by Mrs. Barker, on the Caistor-road, were submitted by Mr. C. E. Kendall, architect, and approved. Mr. Kendall also submitted at the same meeting a plan of the proposed laying out of the new burial-ground.

KINNAIRD HALL, DUNDEE.

A scheme of improvement is being carried out on the Kinnaird Hall. The alterations have been designed by Mr. Leslie Ower, architect.

POST-OFFICE, TAUNTON.

The erection has been begun in this town of a new post-office. The building will be occupied on the ground floor by the public office, which will be 37 ft. long and 30 ft. wide. The remainder of the ground floor will be taken up by the sorting office and rooms for the engineers, postmen, and telegraph messengers. The postmaster's room is to be placed on the first floor, and rooms for the chief clerk and writing staff will also be provided on this floor, the remaining space being occupied by the sorting clerks' retiring-room, telephone test-room, etc. The second floor will be almost wholly taken up by the telegraph instrument-room. In the basement will be placed the power and battery rooms. The building will be warmed by a low-pressure hot-water apparatus, and the lighting will be electric. Internally the walls generally will be faced with glazed brickwork. The front elevation will be of stone up to the height of the first floor window sills, the upper portion to be in red sand-faced brickwork, with stone dressings. The cost, including fittings and furniture, will be about 9,000*l*. Mr. John Rutherford, of H.M. Office of Works, is the architect.

NEW BUILDINGS, ETC., IN YORK.

At a recent meeting of the Streets and Buildings Committee of the Corporation, the following plans were dealt with, viz.:—British Petroleum Company, spirit store, Foss Islands-road, approved; F. Clark, new stables and additions to house, 14, Vine-street, approved; W. E. Jackson, alterations and additions to warehouse, Hallfield-road, approved; G. H. & H. Douglas, two houses, Siward-street, approved; York Race Committee, entrance hall to county enclosure, Knavesmire, disapproved; W. West, four houses, Knavesmire-crescent, approved; W. Walls, eight houses, Westwood-street, approved; E. Relton, six houses, Lower Sutherland-street, approved; A. D. Stuart, alterations, Crown Cottage, Heworth Green, approved; York Central Mission, mission hall, Swinegate, disapproved; J. J. Hunt, Ltd., roof covering, Queen Victoria-street, approved; W. H. Waudby, new shop, Fossgate, approved; C. Reynolds, workshops, 86, Gillygate, disapproved; Mrs. Forth, re-drainage, 32 and 34, New York-terrace, approved; Barclay & Co., reconversion of shop into dwelling-house and shop, 36, Parliament-street, approved.

CO-OPERATIVE PREMISES, PENRHIWCEIBER.

The Cwmbach Co-operative Society have opened new shops at Penrhiwceiber. The buildings have been erected at a cost of 10,000*l*. The heating apparatus, which is on the low-pressure steam system, has been carried out by Messrs. Hampton & Co., Oxford-lane, Cardiff. The architect was Mr. T. Roderick, Aberdare, and the contractors Messrs. D. Davies & Son, Cardiff.

TRADE NEWS.

The Carron Company have just executed an important order for firegrates for the Ameer of Afghanistan's new palace in course of erection at Cabul. These firegrates—twenty-two in number—are fitted with dogs to harmonise, together with heavy canopies of various designs. The designs, which have been approved by the Ameer, are Oriental in style, and on the brasswork, of which the firegrates are almost wholly composed, much hand labour has been involved. A special feature of these firegrates is the unusually large fire, on the asumption that wood will be burned as fuel.

The new Strand Palace Hotel is being fitted with a system of elevator service by Messrs. R. Waygood & Co. There are two main passenger lifts, each capable of carrying a load of 10 cwts., or seven persons, at a speed of 300 ft. per minute. These lifts are specially designed for smooth running at high speed, and with special controlling arrangement so that they can be started and stopped with accuracy at the various levels. One of these lifts is worked by hydraulic power from the high-pressure main of the London Hydraulic Power Company, and the other one by electric power, the latter being arranged with winding gear and special electrical control with car switch in the cage. Special electrical indicators are also fitted on each lift showing the position of each lift at every floor by means of ornamental fitting with electric light. The guides run on round steel runners so as to give the smoothest possible travel. The cages are provided with special safety apparatus to prevent the descent of the cage in case of suspension ropes failing, also safety appliances to guard against over travel in either direction. There are two goods lifts travelling up through the building, one operated by hydraulic power, and capable of carrying loads of 15 and 20 cwts., and one direct-acting platform lift from basement to ground floor. There is a very complete installation of electric service lifts—fifteen in number—serving the various floors and operated by push-button control, with automatic stopping at each end of travel. There are also three small hand-power lifts for carrying wine and papers respectively.

The Auto-Controller & Switch Company's Fluxite soldering paste has now been adopted in the Chatham Royal Dockyards, and after exhaustive tests had been made they have received an order for a large quantity of the flux from the Dockyard.

The Excellence Wood Block Flooring Company are carrying out the oak flooring at the additions to Radley College, Oxford, for which Mr. T. G. Jackson, R.A., is the architect. They are also carrying out the flooring at St. John's College, Battersea, under the supervision of Mr. Rynn Tenison, architect.

The new Golf Club, Irvine, N.B., is being warmed and ventilated by means of Shorland's patent Manchester stoves, with descending smoke flues, supplied by Messrs. E. H. Shorland & Brother, of Manchester, who are also placing their stoves in St. John's School, King's Lynn.

A large chiming clock has just been erected in the parish church at Rangemore, Burton-on-Trent, as a memorial to the late Lord Burton. It was formally started on Saturday, the 4th inst., by Lady Burton. It shows time on four large dials, and is fitted with all the latest improvements, being made to the designs of the late Lord Burton by John Smith & Sons, Midland Clock Works, Derby, who made the Burton Town Hall clock for the late Lord Burton many years ago. The same firm have also just erected a large clock in the parish church at Blackwell, near Alfreton, which chimes the quarters, strikes the hours, and shows time on three large dials. The clock was formally started in the tower on Thursday evening, the 2nd inst.

Stained Glass & Decoration.

TRINITY WESLEYAN CHURCH, REDLAND, BRISTOL.

Five panels have been designed and painted by Mr. W. A. Chase, for Trinity Wesleyan Church, White Ladies-road, Bristol, which is now undergoing alterations, under the supervision of Mr. James Hart, architect. The panels represent five parables—"The Lost Sheep," "The Good Samaritan," "The Lost Piece of Silver," "The Prodigal Son," and "The Sower." They are placed in niches above the Communion-table, and the dimension of each panel is 10 ft. by 2 ft. 7 in.

Appointments.

The Airdrie Town Council have appointed Mr. Hugh Inglis, North British Railway Surveyors' Office, Edinburgh, to be their Surveyor.

Mr. Frederick Chatterton, A.R.I.B.A., has been appointed to the position of Assistant Lecturer in Architecture and Building Construction at the School of Engineering, Giza, Cairo.

Sanitary and Engineering News.

WATER SUPPLY, NORTHAMPTON.

Mr. M. K. North, M.Inst.C.E., Inspector to the Local Government Board, held an inquiry recently at Northampton into the application by the Corporation for sanction to borrow 6,600*l*. for water supply purposes, including a service reservoir at Boughton. The Town Clerk, Mr. Herbert Hankinson, in giving the grounds on which the application had been made, stated that of late there had come forward the necessity of making an additional provision, particularly to increase the pressure and the supply to the high-level district of the town. Owing to special circumstances the Board had sanctioned the acceptance of a tender for the pipes, etc., before sanction was given to the loan. The estimate for the mains was 2,529*l*., and the figure held good at the present moment. The estimate for the covered service reservoir was 4,070*l*., but the actual lowest tender was for 4,365*l*., and that had been accepted. It therefore became necessary to amend the application to the extent of the difference in the amounts, rightly speaking from 6,600*l*. to 6,900*l*. Mr. Tomlinson, Water Engineer, gave a detailed statement as to the plans. There was no opposition, and at the close of the inquiry the Inspector paid a visit to the site.

THE LOWER HUDSON TUNNELS, NEW YORK.

By the opening of the new tunnels constructed beneath the Hudson River by the Hudson and Manhattan Railway a new stage is reached in the development of suburban traffic between New York and outlying districts. The tunnels afford direct connexion between the terminus of the Pennsylvania Railroad in New Jersey and the immense underground station built in New York by the Hudson and Manhattan Railway. At the New York end the tunnels are connected by loop tracks passing under the Hudson Terminal Buildings, while the western end is linked up by a new line to the upper tunnels, which have been in operation for about twelve months. The lower tunnels, giving direct access from Jersey City and Hoboken to the business centre of Manhattan Island, will take much of the traffic hitherto conducted by ferry boats, and the upper tunnels afford convenient means of communication with the shopping, theatre, and hotel districts of New York. The value of the completed scheme is greatly augmented by the facilities arranged for the transference of traffic to and from the systems of the Erie, Pennsylvania, and Lackawanna lines and the Rapid Transit Subway.

Miscellaneous.

CORDWAINERS' HALL, CANNON-STREET.

The demolition of the Cordwainers' Hall has been begun. The hall was built, 1788, by Sylvanus Hall, in Great Distaff-lane; since incorporated in Cannon-street. The south façade, in stone, was designed by Adam. The Company was first incorporated by

Digitized by Google

Henry IV. in 1410 as the Cordwainers and Cobblers—that is to say, shoemakers and workers in Cordovan leather. A few years ago the ceilings of the lower hall and court-room on the ground floor were decorated with plaster-work in the Adam style, and oval medallions were fixed on the walls beneath the original enriched frieze, under the superintendence of Mr. H. Chatfeild Clarke, Surveyor to the Company. The first hall was built, on the present site in Cordwainers' Ward, in 1440, after a charter had been given to the Guild in 17 Henry VI. A stained-glass window, set up thirteen years ago, commemorates a benefactor, John Came, who in 1782 bequeathed to the Company in trust an estate yielding about 1,100*l.* per annum on behalf of widowed and blind, deaf, and dumb annuitants.. The Came urn and tablet was sculptured by Nollekens. John Wild, 1662, bequeathed property at Edmonton (including the Bell Inn) and Winchmore Hill for charitable purposes, and the "reparation of the common hall"; Camden, the antiquary, gave them 16*l.* wherewith to buy a piece of plate.

ROYAL ARTILLERY MEMORIAL, LONDON.

The memorial to their comrades which the regiment will erect in the Mall is being executed by Mr. W. R. Colton, A.R.A. A central group, in bronze, rising to about 30 ft. in height, represents Peace, a winged figure, restraining a charger—symbolical of the Spirit of War. The stone plinth bears a bronze frieze, with a high relief of types of the Royal Horse and Field Artillery; an elliptical platform, with steps, carries a wall, at the end of which are two stone piers, with bronze basreliefs of the Mountain and Garrison Artillery. The inscriptions will commemorate those of the regiment who fell in the South African War, 1899-1902.

BIRMINGHAM UNIVERSITY.

The Council have decided to confer, on October 20, the honorary degree of LL.D. upon many distinguished persons in commemoration of the recent opening of the new buildings. Amongst the recipients are Mr. M. P. Fitzmaurice, C.M.G., Chief Engineer to the London County Council, Sir Archibald Geikie, F.R.S., Sir Alexander B. W. Kennedy, F.R.S., Mrs. Henry Sidgwick, Principal of Newnham College, Cambridge, and Professor Silvanus P. Thompson, F.R.S.

BIRMINGHAM MUNICIPAL SCHOOL OF ART.

In connexion with this school, which offers several important prizes in connexion with work in applied art, there is also a day school of architecture, the object of which is to provide architectural students in the Midlands with a thorough training in all the branches of their profession, and to prepare them for the examinations of the Royal Institute of British Architects. The school course will be spread over four or five years. It is intended that the first two years shall be spent at day classes, and that they shall take the place of the first two years of articled pupilage. The latter two or three years will be spent at evening classes, and will run concurrently with articled pupilage. The syllabus is as follows:—First year—Lectures on architectural history, building construction, elementary physics and geometry; demonstrations and practical work in stone-masonry, carpentry, and bricklaying; simple planning, elementary design (doors, roofs, windows, etc.); perspective; drawing and lettering. Second year—Studies in ancient architecture, including measuring; practical work; lectures on the historic styles and on iron and steel construction, physics, etc.; design. Third and fourth years—Mainly design and advanced physics and kindred subjects. It is hoped that third and fourth year students will be able to take some of their science subjects and carry out tests as to the strength of materials, etc., at the Birmingham University, which possesses full machinery and equipment for this purpose. The fee for the day school will be 40 guineas per session; the fee for the evening school will be 10 guineas per session. It is anticipated that students who follow the full course will be exempted from the Intermediate examination of the Royal Institute of British Architects.

AN ANTHRACITE HEATING STOVE.

The Carron Company send us an illustration and description of their "Alpha" stove, specially constructed for burning anthracite coal or coke. The fire-chamber is brick lined and fitted with movable bottom grates operated by outside handles, thus removing all ash or dust into the ashpan at the foot of the stove. All joints are air-tight to insure perfect combustion, which is regulated by the ventilator in the ashpan front. The fire door is fitted with a mica front and nickel-plated handle. There is a hinged ashpit door and nozzle at the back.

WORKMEN'S DWELLINGS, MERTHYR.

In the House of Commons, on September 2, Mr. Keir Hardie asked the Prime Minister whether his attention has been drawn to the action of the Proprietors of the Wingfield and Mackintosh estate, Abercanaid, Merthyr, who have refused to sell or lease land to the Merthyr Borough Council for the erection of workmen's dwellings, on the plea that the housing scheme of the Council does not seem to be of any advantage to the estate; and whether it is intended, by legislation or otherwise, to take from landowners the power to withhold land when required for houses or other public uses? The President of the Local Government Board (Mr. Burns) replied:—The Prime Minister has asked me to reply to this question. The Town Council have sent me a copy of a letter which they have received from the solicitors to the owners of the estate referred to, and which is to the effect stated in the question. Local authorities are already empowered by sect. 57 of the Housing of the Working Classes Act, 1890, to apply to the Local Government Board to enable them to purchase land compulsorily for the purpose of providing houses for the working classes, and, I may add, that under the Housing, Town Planning, etc., Bill, now before Parliament, the procedure in relation to this matter is proposed to be considerably simplified and improved.

PORT SAID AND SUEZ.

Plans have been drawn up for the complete drainage of Port Said, but the work will hardly be taken in hand before the end of the year. ——A new railway-station has been opened on Navy House Quay, on land leased to the Egyptian Government by the British Admiralty. By the use of this station passengers arriving or departing avoid the necessity of passing through the town, and are thereby saved considerable trouble with their luggage.——The work of building a British Consulate in a central part of Port Said has been commenced.——The Suez Canal Company have under consideration the erection of a block of villas on the seashore at Port Said for the use of their employees, and the tenants can become proprietors on the instalment system. The scheme was needed, as the community suffers from want of house room, as well as from high rents, the price of an unfurnished flat of five or six rooms varying from 5*l.* to 7*l.* per month, whilst larger flats cost from 8*l.* to 10*l.* per month.——A new quay wall has recently been constructed in the south basin of the Suez (Port Ibrahim) docks. It is between 500 ft. and 600 ft. long, and is almost entirely built of 18-ton blocks of Portland cement concrete, resting on rubble foundations laid on the dredged sea-bed. A large area behind the new wall was reclaimed by depositing a considerable quantity of sand, and afterwards paving with volcanic slabs.——A fine new post-office is at present in course of construction at Port Tewfik, and when completed the business of the head office in Suez Town will be transferred thither.——Both Suez Town and Port Tewfik are now lighted throughout by electricity, the wires being partly aerial and partly underground.——The waterworks at Suez are situate close to the sweet water canal about half a mile out of the town. Three large water towers and new reservoirs are in course of construction.——The British firm who have for some time past worked the old stone quarries situated at Ataka, which is just across Suez Bay, have a large contract with the Canal Company for the construction of the quay walls of the new basin at Port Said, and also for the new breakwater at that port. The average output of stone per month is 1,800 tons, and this is conveyed from Ataka to Port Said through the canal by several large steam barges owned by the firm. The average number of men employed, including skilled labour, is 420.

THE BRITISH ASSOCIATION.

In a paper on "Excavations on Neolithic Sites in North Greece," Messrs. A. J. B. Wace, M. S. Thompson, and T. E. Peet stated that they had examined in the early summer of 1909 two new sites, both full of interest, interpreting their excavations at Zerelia last year, and raising fresh problems for future excavations to solve. At Lianokladhi there were three clearly marked strata. The lowest (I.) was a stratum of finely-made and well-painted red on white neolithic pottery patterns. Shapes differed from Chaeronea and Zerelia, and so were probably local. With this local ware they found a little imported Thessalian red on white ware. There was also another class of red on white ware that did not seem local. This stratum was about 2·50 metres thick, and the pottery was beginning to degenerate towards the top and end of this stratum. The intermediate stratum (II.) was sharply divided from I., and was marked by fine well-made ware painted thinly all over with black lustrous paint; with it occurred a reddish-yellow ware, unpainted, but of the same fabric and technique. Both classes of pottery were handmade. The top stratum (III.) was also clearly separated from II., and was marked by an abundance of coarse, hand-made, unpainted ware, red and blackish, often unpolished, and by a peculiar hand-made black on red geometric ware. This was dated to about 1200 B.C., by the appearance with it of "Minyan" grey ware from Orchomenos. To this stratum belonged a three-roomed house, one room of which contained six large pithoi and several complete vases. Very few implements were found, but in the house were discovered two bored stone celts, and some fine flint knives with jagged edges, and saws. Good flint knives also came from the second stratum. Obsidian, which occurred in I. and II., was rare. The authors believed I. and II. to be neolithic, and III. to be of early Bronze Age. The importance of Lianokladhi was that it gave parallels on one hand to Zerelia and Thessaly, and on the other to Orchomenos and the south. At Tzani Maghoula, a little due east of Sophadhes and the classical Kierium, the same thing seemed to have happened as at Zerelia—*i.e.*, a steady degeneration of good pottery to plain, coarse ware. So far four or five settlements of plain ware had been passed through, in which the pottery was better as the depth increased, and black on red Dhimini ware had just been struck, which seemed to overlie red on white ware like the Zerelia type, and closely allied to the third class of red on white from Lianokladhi, which might be local in Western Thessaly. With the red on white ware appeared an entirely new ware, finely-made vases of grey clay, with linear patterns in grey-black. Above the painted ware were some important sherds of the black lustre ware already noted at Lianokladhi, which should give a date. In the top stratum there were some vases like Zerelia VIII., and a grey ware that looked like a local imitation of "Minyan." There were several good bone pins and gouges, and plenty of obsidian, one or two celts, and only one flint knife.—*Times.*

LIGHTNING CONDUCTORS AT ELY CATHEDRAL.

Lightning conductors were first fitted to Ely Cathedral about the year 1859, to the specification of Sir William Snow Harris, F.R.S., advisor on lightning conductors to the Crown, but doubts were entertained as to whether these were still in an efficient condition. Mr. Alfred Hands, F.R.Met.S., was therefore instructed by the Dean and Chapter to make tests and report as to the advisability of adopting more modern methods. Snow Harris's conductors, formed of short copper tubes screwed together, proved to be so defective that it has been found necessary to instal an entirely new system of copper tapes. This comprises two conductors on the western tower, with branches from the flagstaff and four turrets, two from the towers over St. Catherine's Chapel, and four from the eastern or lantern tower, as well as from the nave, choir, transepts, and lady chapel. The system has been arranged so as to be scarcely noticeable, and does not detract from the appearance of the cathedral. The work has been carried out by Messrs. J. W. Gray & Son, of London, under Mr. Hands's direction.

NORTHAMPTON POLYTECHNIC INSTITUTE.

We have received the volume of educational announcements for the session of this Institute; a scheme which appears to include almost every branch of study in technical work and applied art. The building, which was designed by the late Mr. Mountford, is now completely finished and available for the extended work of the Institute.

THE FINANCE BILL AND DEVELOPED LAND.

In the House of Commons on Monday Mr. Harold Cox asked whether land which had been developed by being built upon, under clause 10 of the Finance Bill, meant land upon which buildings had been erected.—Mr. Hobhouse: It does not follow that land upon which buildings have been erected is land "which has been developed by being built upon." The question of some alteration of language is under consideration in connexion with the case of greenhouses, and also with that of land reverting to the condition of undeveloped land.

MANCHESTER BUILDING AND SANITARY TRADES EXHIBITION.

This exhibition will be held at the City Exhibition Hall, Manchester, in March, 1910. As the City Hall is larger than the St. James's Hall, in which the last exhibition of the kind was held in Manchester, advantage will be taken of the space to extend the scope of the exhibition, especially in regard to the sanitary section. All inquiries should be addressed to the manager, Mr. Walter Cawood, 16, John-Dalton-street, Manchester.

MISCELLANEOUS—*Continued on page 300.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxvi.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 28.—**Lyminge.**—SEWAGE DISPOSAL.—The Elham R.D.C. invite schemes and estimates for the disposal of the sewage of Lyminge Parish. Mr. R. Lonergan, Clerk, 11, Cheriton-place, Folkestone.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

* NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite designs for new grammar school in Moor Park-avenue, Preston. Three premiums are offered. See advertisement in this issue for further particulars.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

* NO DATE. — **Bognor.** — PIER IMPROVEMENTS.—The Bognor Pier Company, Ltd., invite designs or suggestions for improvements on the pier. See advertisement in this issue for further particulars.

* NO DATE. — **Warrington.** — SCHOOL.—The Warrington B.C. Education Committee invite designs for a public Elementary School. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

* SEPTEMBER 13. — **Doncaster.** — SCHOOL. — The Governors of the Doncaster Municipal High School for Girls invite tenders for school. See advertisement in this issue for further particulars.

SEPTEMBER 13. — **Handsworth.** — BRIDGE RECONSTRUCTION.—The West Riding C.C. invite tenders for the partial reconstruction of Woodhouse Mill Bridge, carrying the Worksop and Attercliffe main road over the River Rother, in the Urban District of Handsworth. Conditions, etc., may be obtained on deposit of 1*l.* with the West Riding Treasurer, County Hall, Wakefield, at the office of Mr. F. G. Carpenter, West Riding Surveyor, Wakefield, where plans may also be inspected.

SEPTEMBER 14.—**Kinsale.**—COTTAGES, ETC.—The Kinsale R.D.C. invite tenders for building cottages, for fencing plots, and for additions to and repair of existing cottages. Schedules of cottages to be erected and plots to be fenced, and any other particulars, as well as tender forms, can be had on application to Mr. John Murphy, Clerk of Council, Council Office, Kinsale Workhouse.

SEPTEMBER 15.—**Bristol.**—HARBOUR WALL.—For pile foundations and harbour wall at the Liverpool Wharf. Particulars to be obtained of Mr. W. H. Brown, M.S.A., Standard-buildings, Leeds.

SEPTEMBER 15. — **Pontypridd.** — PAVILION. — The Pontypridd Golf Club invite tenders for the erection of a pavilion. Plans and specifications may be seen at office of Mr. Arthur Ll. Thomas, architect and surveyor, Church-street chambers, Pontypridd.

SEPTEMBER 15.—**Tomintoul.**—SCHOOL ADDITIONS.—Tenders are wanted for (1) additions to the Public School, including a science room, at Tomintoul; (2) cooking and laundry department at St. Michael's, Tomintoul. Plans and specifications may be seen at the North of Scotland and Town and County Bank, Tomintoul, and with Mr. John Wittet, architect, Elgin.

SEPTEMBER 16.—**Bristol.**—Tenders are invited for new warehouse, mill, and bridges at Redcliffe Wharves. Particulars may be obtained of Mr. W. H. Brown, M.S.A., Standard-buildings, Leeds.

SEPTEMBER 16. — **Edinburgh.** — LABORATORY.—The Commissioners of H.M. Works, etc., invite tenders for the erection of laboratory buildings, Royal Botanic Garden, Edinburgh. Drawings, etc., may be seen on application at His Majesty's Office of Works, Parliament-square, Edinburgh, where bills of quantities and forms of tender may be obtained on payment of 1*l.* 1s.

SEPTEMBER 16. — **Pontardawe.** — UNION OFFICES.—The Guardians of the Pontardawe Union invite tenders for the erection of the proposed Union Offices in Holly-street, Pontardawe. Plans may be seen, and specification, form of contract, etc., may be obtained from Mr. Chas. Bevan Jenkins, Clerk to the Guardians, Herbert-chambers, Pontardawe, S.O., Glam., or at the office of the architect, Mr. Arthur M. Leon, Working-street, Cardiff, on deposit of 2*l.*

SEPTEMBER 16. — **Truro.** — WAREHOUSE, ETC. — New warehouse, mills, and river walls, also reconstruction of partly destroyed premises. Particulars can be obtained from Mr. W. H. Brown, M.S.A., Standard-buildings, Leeds.

SEPTEMBER 17.—**Halifax.**—HOUSES.—Tenders are invited for the mason's (labour only), joiner's, plumber's and glazier's, plasterer's and concretor's, and slater's work required in the erection of seven houses at Stump Cross, Halifax. Plans may be seen, and bills of quantities obtained, at the offices of Messrs. Joseph F. Walsh & Graham Nicholas, architects, Harrison-road, Halifax.

SEPTEMBER 17. — **Sands.** — CHAPEL AND SCHOOLS.—Tenders are invited for the erection of a Primitive Methodist Chapel and Schoolrooms at Sands, near High Wycombe. Plans and specifications can be obtained of the architect, Mr. A. W. Nash, Priory-avenue, High Wycombe.

* SEPTEMBER 18. — **Athlone.**—SCHOOL.—Tenders are invited for a schoolhouse and premises in Ballymahon-road, Athlone. See advertisement in this issue for further particulars.

* SEPTEMBER 18. — **Cardiff.** — COUNTY HALL.—The Glamorgan C.C. invite tenders for a County Hall in Cathays Park, Cardiff. See advertisement in this issue for further particulars

SEPTEMBER 18. — **Lightcliffe.** — MOTOR GARAGE AND LODGES.—Tenders are invited for the erection of two lodges and appurtenances, also a motor garage, at Lightcliffe. Plans and specifications will lie for inspection, and bills of quantities may be obtained, at the offices of Messrs. Clement Williams & Sons, architects, Post-office-buildings, Commercial-street, Halifax.

SEPTEMBER 18. — **Philleigh.** — WAIN HOUSE, ETC.—Tenders are invited for the erection of a wain house and alterations at Tolverne Farm, in the Parish of Philleigh. Plans, etc., can be inspected at the Farm House at Tolverne.

SEPTEMBER 21. — **Greenock.** — IMPROVEMENTS. — Greenock (Burgh) School Board invite tenders for the various works required in connexion with the addition and alteration to Greenock Academy, according to plans by Messrs. Baston, Menzies, & Morton, architects, Greenock. Schedule of quantities and form of tender can be obtained on application to Mr. A. F. Niven, Clerk of Board, Burgh School Board Offices, Municipal Buildings, Greenock, on deposit of 1*l.* 1s. for each schedule.

SEPTEMBER 22.—**Bodedern.**—SCHOOL IMPROVEMENTS.—Tenders are invited for certain additions and alterations to the Council School at Bodedern, Anglesey. Plans, etc., may be inspected at the school, and forms of tender will be supplied on application to the Schoolmaster, Bodedern.

SEPTEMBER 22.—**Ilfracombe.**—BUSINESS PREMISES.—Tenders are invited for the erection of business premises, the Promenade, Ilfracombe, for Mr. T. D. Harding. Drawings, etc., may be obtained at the office of Mr. Allen T. Hussell, F.R.I.B.A., Market-square, Ilfracombe.

SEPTEMBER 22.—**Newcastle, Co. Down.**—CHURCH IMPROVEMENTS.—Tenders are invited for enlarging and remodelling the Church of Our Lady of the Immaculate Conception, Newcastle, Co. Down, for Rev. James M'Ilvenny, P.P. Copies of the plans and specification can be obtained from Mr. J. J. M'Donnell, architect, 27, Chichester-street, Belfast.

SEPTEMBER 23.—**Leeds.**—SCHOOL ADDITIONS.—For the erection of boys' and girls' departments at the Kirkstall-road Council School for the Leeds Education Committee. Applications to be made to the Education Department (Architect's Section), Calverley-street, Leeds.

SEPTEMBER 23. — **St. Annes-on-Sea.**—ELEMENTARY SCHOOL.—The Lancashire Education Committee invite tenders for the erection of a new elementary school at St. Annes-on-Sea. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Lattler, 16, Ribbleadale-place, Preston, by payment of a deposit of 2*l.*

SEPTEMBER 23.—**Swansea.**—ELECTRIC POWER STATION.—The Swansea Harbour Trustees invite tenders for the erection of an electric power station on the eastern side of the Prince of Wales Dock Lock. Drawings and specification may be seen, and form of tender obtained, at the office of the Trustees' Engineer, Mr. A. O. Schenk, M.Inst.C.E., Harbour Offices, Swansea.

* SEPTEMBER 23.—**Tunbridge Wells.**—POST-OFFICE EXTENSIONS.—The Commissioners invite tenders for extension of the Tunbridge Wells Post-office. See advertisement in this issue for further particulars.

* SEPTEMBER 27.—**Fermoy.**—SOLDIERS' QUARTERS.—The Secretary of State for War invites tenders for twelve "A" married soldiers' quarters, Fermoy, Ireland. See advertisement in this issue for further particulars.

* OCTOBER 1. — **Porth.** — SCHOOL. — The Rhondda U.D.C. invite tenders for new school at Porth. See advertisement in this issue for further particulars.

* OCTOBER 1.—**Treherbert.**—SCHOOL.—The Rhondda U.D.C. invite tenders for two new departments at school, Treherbert. See advertisement in this issue for further particulars.

* OCTOBER 7. — **Toddington.** — SCHOOL.—The Bedfordshire C.C. invite tenders for new Council School at Toddington. See advertisement in this issue for further particulars.

NO DATE.—**Guernsey.**—STORES AND COAL HOPPERS.—Tenders are invited for the erection of new stores, and also for coal hoppers. Particulars may be obtained from Mr. W. H. Brown, Standard-buildings, Leeds.

NO DATE.—**Kill, Co. Kildare.**—PAROCHIAL HOUSE.—Tenders are invited for the erection of a Parochial House at Kill, Co. Kildare, according to plans and specification, which may be seen at the office of Mr. Francis Bergin, civil engineer and architect, 36, Westmoreland-street, Dublin.

NO DATE.—**Solva.**—WAREHOUSE.—A new warehouse. Further information can be obtained from Mr. W. H. Brown, M.S.A., Standard-buildings, Leeds.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 13. — **Dublin.** — ELECTRIC METERS.—The Lighting Committee of the Dublin Corporation invite tenders for the supply of 750 meters. Specification, etc., may be inspected at the office of the City Electrical Engineer, Fleet-street, Dublin, and obtained on deposit of 1*l.*

SEPTEMBER 13.—**Manchester.**—BOILERS.—The Manchester Corporation invite tenders for the supply and delivery at Harpurhey Baths of two Lancashire boilers and one economiser of ninety-six pipes, and engine, etc., to same. Specification and further particulars can be obtained at the office of the City Architect, Town Hall, upon payment of 1*l.* 1s.

SEPTEMBER 13. — **Rawmarsh.** — HEATING.—Rawmarsh U.D.C. invite tenders for heating the scarlet fever block at the new Isolation Hospital. Plans and specifications may be seen, and any information obtained, by applying at the office of the architect, Mr. J. Platts, High-street, Rotherham.

SEPTEMBER 16. — **Merthyr Tydfil.** — IRON STAIRCASES.—Tenders are invited for the construction and erection of outside fire-escape iron staircases at the Union Workhouse, Merthyr Tydfil. Plans and specifications may be seen at the office of the architect, Mr. Thomas Roderick, Clifton-street, Aberdare.

SEPTEMBER 16. — **Mitcham.** — IRON BUILDING AND FENCING.—The Croydon R.D.C. invite tenders for supplying and erecting an iron building 100 ft. by 25 ft., and for supplying and erecting about 540 yds. run of galvanised-iron fencing at Homewood-road, Mitcham. Plans and specifications prepared by the Council's Surveyor, Mr. R. M. Chart, F.S.I., can be inspected, and forms of tender obtained, at his office, Katherine-street, Croydon, on deposit of 2*l.* 2s.

SEPTEMBER 16.—**Ormskirk.**—HEATING.—The Guardians invite tenders for the heating of a block of premises at the Ormskirk Workhouse. Plan and specification may be seen at the Workhouse, and any further information may be obtained from Mr. James Dod, architect, D 16, Exchange-buildings, Liverpool.

SEPTEMBER 18. — **Cardiff.** — STEAM RADIATORS.—The Cardiff Guardians invite tenders for provision of steam radiators, etc., at the Cardiff Workhouse, in accordance with specification prepared by Mr. S. W. Allen, M.Inst.M.E., and conditions of contract annexed to the form of tender, to be obtained from Mr. Arthur J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.

SEPTEMBER 18.—**Glasgow.**—STEEL WORK.—The Corporation invite offers for the steel work required in connexion with the construction of a parapet on Queen Margaret Bridge. Specifications and forms

Digitized by Google

ENGINEERING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

of offer may be had on application at the Office of Public Works, City-chambers, 64, Cochrane-street.

SEPTEMBER 20.—**Monaghan.**—RAILWAY COAL STORE.—The Directors of the Great Northern Railway Company (Ireland) invite tenders for the construction and erection of a coal store at their Monaghan Station, with corrugated-iron roof, sides, etc., and steel framing and wooden roof principals. Drawings and specification may be seen at the office of Mr. W. H. Mills, Engineer-in-Chief, Amiens-street Terminus, Dublin, or copies of them at the office of the District Engineer, Belfast, and forms of tender can be obtained at these offices on payment of 1s. each (not returnable).

SEPTEMBER 21.—**Bristol.**—HEATING AND VENTILATING.—The Bristol Education Committee invite tenders for the heating and ventilating of the Council school to be erected at Alexandra Park, Fishponds. General conditions, etc., and the drawings may be inspected, and (on payment of a deposit of 1*l.* 1s.) specification, etc., may be obtained at the office of the architects, Messrs. Rodway & Dening, Gaunt House, Orchard-street, Bristol.

NO DATE.—**Usworth.**—ELECTRIC LIGHTING.—The Great and Little Usworth P.C. invite tenders for the lighting of certain roads in the Parish by electricity. Those desirous of tendering for the work of erection of poles, etc., to send their names to Mr. Jos. R. Elliott, Clerk to the Council, Fern House, New Washington.

MISCELLANEOUS.

SEPTEMBER 13.—**Devizes.**—STEAM ROLLING.—Devizes R.D.C. invite tenders for scarifying and steam rolling in their district. Conditions and specification of the work can be obtained of the Council's Surveyor, Mr. S. W. Saunders, The Wharf, Devizes.

SEPTEMBER 13. — **Hereford.** — DEMOLITION.—The Hereford T.C. invite tenders for the demolition of the remainder of the property now standing on the Bewell-street area. Plan and form of tender may be seen, and other information obtained, upon enquiry at the City Surveyor's Office, Town Hall, Hereford.

SEPTEMBER 16. — **Denton.** — HEATING.—U.D.C. of Denton invite tenders for heating the Town Hall, Denton, by hot water, on the low-pressure system. Specification of work required and any further information may be obtained from Mr. J. B. Cooke, Surveyor to the Council, Town Hall, Denton, on payment of 1*l.* 1s.

SEPTEMBER 21.—**Clifton, York.**—FURNISHING.—Tenders are invited for furnishing two new blocks, each containing 100 beds, at the North Riding Asylum, Clifton, York. For specifications apply to the Clerk and Steward.

SEPTEMBER 25.—**Braintree.**—CAST-IRON PIPES, ETC.—Braintree R.D.C. invite tenders for the supply and delivery at Kelveden (G.E.R.) of about 550 tons of 7-in., 6-in., 5-in., 4-in., and 3-in. cast-iron pipes, well cylinders, specials, and other works. Specification, etc., may be obtained from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham, on payment of 3*l.* 3s.

SEPTEMBER 27. — **Chadwell-St.-Mary.** — HOUSE REFUSE REMOVAL.—Orsett R.D.C. invite tenders for the work of collection and removal of all house refuse and the emptying of all cesspools and closets in the Parish of Chadwell-St.-Mary. Further details and particulars can be obtained of Mr. J. Hurst, 100, New-road, Grays, or of Mr. James Beck, Clerk to the Council, 2, Orsett-road, Grays.

OCTOBER 4.—**Kilkenny.**—TELEPHONE INSTALLATION.—Kilkenny Corporation invite tenders for the installation of telephonic communication in Kilkenny City between the Fire Brigade Headquarters, the Waterworks at Radestown, and Military and Police Barracks, etc., in the City. Plans and specification can be inspected at the office of Mr. P. J. Morrissey, Borough Treasurer.

OCTOBER 9.—**Shropshire.**—DREDGING.—Tenders are invited for cleaning, deepening, widening, and diverting a portion of the River Rea, Asterley and Minsterley Brooks. Plans and specifications may be inspected at the office of Messrs. T. Hickman & Son, Pride-hill-chambers, Shrewsbury, or copies may be obtained upon payment of a deposit of 2*l.* 2s.

NO DATE.—**St. Buryan.**—SAND, ETC.—Tenders are invited (1) for the supply of building sand, delivered on the site of St. Buryan new Council School; (2) for the carting of stone, granite stones, and building materials of various descriptions. Apply Messrs. George Miners & Son, builders, Marazion.

PAINTING, etc.

SEPTEMBER 13. — **Macclesfield.** — PAINTING.—The Water Committee invite tenders for painting at the Waterworks, Langley. Specifications may be obtained on application at the office of Mr. Chas. W. Stubbs, Waterworks Engineer, Macclesfield.

SEPTEMBER 13.—**Rothwell Haigh.**—PAINTING.—Guardians of the Hunslet Union invite tenders for certain painting and lime and colour washing required at their Children's Homes at Rothwell Haigh. Forms of tender, etc., may be obtained on application at the office of Mr. Fred W. Mee, Clerk to the Guardians, Union Offices, Hunslet, Leeds.

SEPTEMBER 14. — **Eastby.** — PAINTING.—Bradford Guardians invite tenders for painting the Sanatorium at Eastby, near Skipton, also Union Offices, 22, Manor-row, Bradford. Specifications and forms of tenders may be obtained (on receipt of 1*l.* 1s. deposit) at the Architect's office, 22, Manor-row, Bradford.

SEPTEMBER 14.—**Knaresborough.**—PAINTING.—The Guardians of the Knaresborough Union invite tenders for painting the outside wood and ironwork and inside work at the Workhouse Infirmaries. Specification may be obtained from the Workhouse Master, Knaresborough.

SEPTEMBER 14.—**Sheffield.**—PAINTING.—The Sheffield Guardians invite tenders for painters' and whitewashers' work required at the Union Workhouse and Union Hospital, Fir Vale. A copy of the specifications may be seen, and further particulars obtained, on application to the Workhouse Master and Hospital Steward respectively.

SEPTEMBER 15. — **Carshalton.** — PAINTING.—The Carshalton U.D.C. invite tenders for painting the sewer ventilating columns, direction posts, fences, etc., throughout the district. Particulars may be obtained on application to the Council's Surveyor, Mr. W. Willis Gale, A.M.Inst.C.E., D.C. Office, The Square, Carshalton.

SEPTEMBER 16.—**Whiston.**—PAINTING.—The Prescot Guardians invite tenders for cleaning and painting various sections of the Workhouse Buildings, Whiston. Specifications can be seen at the office of Mr. J. Gandy, architect, Masonic-buildings, St. Helens, or at the office of Mr. T. Whitehouse, Clerk of Works, Workhouse, Whiston, Prescot.

SEPTEMBER 24.—**Derby.**—PAINTING, ETC.—The Visiting Committee of the Derby County Asylum invite tenders for the painting and decorating of three wards, and distempering and limewashing. Specifications may be obtained from Mr. A. McWilliams, Resident Engineer.

ROADS, SANITARY, AND WATER WORKS.

SEPTEMBER 13. — **Belfast.** — EARTHENWARE PIPE SEWER.—The Improvement Committee invite tenders for the construction of about 186 lin. yds. of 24-in. earthenware pipe sewer in Knock-road. Drawings and specification can be seen, and bill of quantities obtained, at the office of the City Surveyor.

SEPTEMBER 13.—**Blackburn.**—STREET WORKS.—The Highway Committee invite tenders for excavating, forming, and paving of the following, viz.:—St. Clement-street and the back roads behind Lynwood-road, May-street, June-street, July-street, and Lambeth-street, within the Borough of Blackburn. Plans and specifications may be seen, and all information obtained, on application at the office of Mr. William Stubbs, A.M.Inst.C.E., Borough and Water Engineer, Municipal Offices, Blackburn.

SEPTEMBER 13.—**Hanley.**—PRIVATE STREET WORKS.—Tenders are invited for the following private street improvement works:—Contract No. 405.—Davis-street. Contract No. 406.—Edward-street. Contract No. 407.—Bedford-street West. Contract No. 408.—Back Davis-street West. Contract No. 409.—Back Lomas-street North. Specifications, etc., may be obtained, and plans inspected, at the office of Mr. Joseph Lobley, Borough Engineer and Surveyor, Town Hall, Hanley.

SEPTEMBER 15. — **Inverkeithing.**—SEWER.—Offers are invited for the laying of about 550 yds. of a 9-in. sewer, with the necessary cutting of rock and soil, etc., at west end of the Burgh. Plans, sections, etc., can be seen at the office of Mr. James C. Sim, architect, 16, High-street, Inverkeithing.

SEPTEMBER 15. — **Paignton.** — WATER MAIN. — The Paignton U.D.C. invite tenders for supplying and laying a 3-in. cast-iron water main, with valves, specials, and contingent works, along and adjoining the Oldway-road in their district. Drawings, etc., can be seen, and bills of quantities obtained, at the office of the Engineer, Mr. Fred. Wm. Vanstone, Palace-chambers, Paignton, upon payment of 1*l.* 1s.

SEPTEMBER 16. — **Greenwich.** — STONE. — The Greenwich B.C. invite tenders for supplying tooled York stone. Specifications, forms of tender, and other particulars can be obtained at the Borough Engineer and Surveyor's Office, Town Hall, Greenwich-road, S.E., during office hours.

SEPTEMBER 16. — **Pendleton.** — ALTERATIONS TO DRAINS.—Tenders are invited for alterations to drains and water-closets to six cottages in Wardleworth-road, near Hope Church, Eccles Old-road, Pendleton. Plans and specification may be seen, and quantities obtained from Mr. H. Lord, architect, 42, Deansgate, Manchester.

SEPTEMBER 16. — **Wallington.**—EARTHENWARE PIPE SEWER.—Croydon R.D.C. invite tenders for the construction of about 3,000 lin. ft. of earthenware pipe sewer, with manholes, etc., in Manor-road, Wallington. Plans and specification may be seen at the office of the Council's Highway Surveyor, Mr. J. S. Killick, A.M.Inst.C.E., Katharine-street, Croydon, and form of tender, with copy of the bill of quantities, obtained on deposit of 2*l.* 2s.

SEPTEMBER 16.—**Wem.**—WATER SUPPLY.—The R.D.C. of Wem invite tenders for the laying down of a new water scheme in the districts of Barkers Green and Aston, in the Parish of Wem Rural. Specifications and plans may be seen at the office of Mr. W. S. Salt, Clerk to the Council, Noble-street, Wem, Salop.

SEPTEMBER 17.—**Barking.**—PRIVATE STREET WORKS.—The U.D.C. of Barking Town invite tenders for the execution of private street works at Bifrons-street (eastern portion), within the Urban District of Barking Town. Plans and sections may be seen, and specification, etc., obtained from Mr. C. F. Dawson, Surveyor to the Council, Public Offices, Barking.

✱ SEPTEMBER 17.—**Barking Town.**—SEWER.—The Barking Town U.D.C. invite tenders for laying patent jointed stoneware pipe sewer and surface-water drain, etc., in Hertford-road. See advertisement in this issue for further particulars.

SEPTEMBER 17. — **Preston.** — STREET WORKS. — The Preston Corporation invite tenders for the works required in levelling, paving, flagging, etc., and making good Maitland-street, from Caroline-street to Acregate-lane. Plan, etc., may be seen, and schedule of quantities and form of tender obtained, at the office of the Borough Surveyor, Town Hall, Preston.

SEPTEMBER 18. — **Burntisland.** — FIRECLAY PIPES.—The T.C. of the Burgh of Burntisland invite tenders from contractors for laying spigot and faucet fireclay pipes in and alongside the Dour Burn at Cullaloe Reservoir. Schedules of measurement may be obtained from Mr. J. A. Waddell, Burgh Surveyor, Burntisland, on payment of a deposit of 1*l.*, accompanied by priced and signed schedules, where plans may also be seen.

✱ SEPTEMBER 20. — **Beckenham.** — ROAD-MAKING.—The Beckenham U.D.C. invite tenders for making-up Shortlands-grove and a new road between Belmont and Hamnden roads. See advertisement in this issue for further particulars.

SEPTEMBER 20. — **Shalford.** — SEWERAGE WORKS. — The R.D.C. of Hambledon invite tenders for sewerage works in the Parish of Shalford, near Guildford. Plan and specification can be seen at the office of Mr. Henry Moon, the Surveyor and Engineer, 96, High-street, Godalming, and copies of the bill of quantities and form of tender can there be obtained on deposit of 3*l.* 3s.

SEPTEMBER 20. — **Solihull.** — SEWERAGE. — Solihull R.D.C. invite tenders for carrying out the second section of a scheme for the sewering of parts of the Parish of Solihull. The drawings and specifications may be seen, and form of tender, together with bill of quantities, obtained, on payment of a deposit of 5*l.* 5s., at the office of Mr. A. E. Currall, Engineer to the Council, Solihull, between 10 a.m. and 4 p.m. on and after September 13.

SEPTEMBER 22. — **Bournemouth.** — MAKING-UP.—Bournemouth B.C. invite tenders for making-up Evelyn, Limited, Brassey, Oswald, Elmes, Stanfield, Castle, and Edgehill roads. Full particulars can be obtained of the Borough Engineer, Mr. F. W. Lacey, M.Inst.C.E., Municipal Offices, Bournemouth, where drawings can be seen on deposit of 1*l.* 1s. in respect of each tender.

SEPTEMBER 22. — **Neath.** — WATER SUPPLY.—The Water Works Committee of the Neath R.D.C. invite tenders in connexion with the Neath Valley main pipe conduit (contract No. 7). Drawings may be seen, and copies of the specification, etc., may be obtained, at the offices of the Engineer to the Council, Mr. D. M. Davies, Council Offices, Neath, upon receipt of the sum of 3*l.* 3s. (2*l.* 2s. only of which will be returned). A limited number of complete sets of drawings can be lent to contractors tendering (in order of application) upon the payment of 3*l.* 3s., which will not be returned.

SEPTEMBER 23. — **Evesham.** — PIPE SEWER. — The Evesham T.C. invite tenders for the laying of a 12-in. pipe sewer from Bridge-street to near the outfall works in the Borough, including the provision of pipes, manholes, etc. Specifications, etc., can be seen during office hours at the office of the Borough Surveyor, Town Hall, Evesham, and the Surveyor will, on application, supply any further information.

SEPTEMBER 25. — **Fillongley.** — SEWERAGE. — The Meriden R.D.C. invite tenders for the carrying out of a sewerage scheme for the Parish of Fillongley, in the County of Warwick. Plans, etc., may be seen, and copies of the bill of quantities with form of tender obtained, at the offices of Mr. W. H. Simpson, A.M.Inst.C.E., The Corridor-chambers, Market-place, Leicester, on payment of 3*l.*

SEPTEMBER 27.—**Bacup.**—PAVING.—Bacup Corporation invite tenders for the paving, etc., of Industrial-place, Bacup. Plans may be seen, and specifications and quantities obtained, at the office of Mr. W. H. Elce, A.M.Inst.C.E., Borough Engineer, Bacup, on payment of 1*l.* 1s.

✱ SEPTEMBER 27 — **Wandsworth.** — ROADMAKING.—The Wandsworth B.C. invite tenders for making-up and paving new streets. See advertisement in this issue for further particulars.

SEPTEMBER 28. — **Markyate.** — WATERWORKS.—The Hemel Hempstead R.D.C. invite tenders for the construction of waterworks at Markyate, Hertfordshire. Plans can be seen at the offices of the engineers, Messrs. Elliott & Brown, Burton-buildings, Parliament-street, Nottingham, from whom copies of the specification, bill of quantities, and form of tender can be obtained on deposit of 2*l.* 2s.

✱ SEPTEMBER 28. — **Willesden.** — DRAINAGE.—The Willesden D.C. invite tenders for constructing drainage intercepting sewer. See advertisement in this issue for further particulars.

OCTOBER 5.—**Aldershot.**—MAKING-UP.—The Aldershot Council invite tenders for the making-up of Eland-road. Plans and specifications may be seen, and full particulars obtained, on application to Mr. Fred C. Uren, A.M.Inst.C.E., Surveyor to the Council, Municipal Buildings, Aldershot.

STONES, MATERIAL, AND STORES.

SEPTEMBER 14. — **Edmonton.** — GRANITE. — The Edmonton U.D.C. invite tenders for the supply of blue Guernsey and Aberdeen granite. Forms of tender and full particulars may be obtained of Mr. G. Eedes Eachus, Engineer to the Council, Town Hall, Edmonton.

SEPTEMBER 14. — **Edmonton.** — STONEWARE PIPES.—The Edmonton U.D.C. invite tenders for the supply of stoneware pipes. Forms of tender and full particulars may be obtained on application to Mr. G. Eedes Eachus, Engineer to the Council, Town Hall, Edmonton.

SEPTEMBER 14. — **Merthyr Tydfil.** — MATERIALS.—The Merthyr Tydfil Corporation invite tenders for the supply of (*a*) ironmongery goods and engine stores, and (*b*) paving stones, etc. Forms of tender may be obtained upon application to the Borough Engineer.

SEPTEMBER 15.—**Carshalton.**—FLINTS AND GRAVEL.—The U.D.C. of Carshalton invite tenders for the supply of 600 yds. of hand-picked surface-weathered land flints, and of 100 yds. of small sandy gravel. Full particulars in each case may be obtained on application to the Council's Surveyor, Mr. W. Willis Gale, A.M.Inst.C.E., D.C. Office, The Square, Carshalton.

SEPTEMBER 16.—**Cuckfield.**—MATERIALS.—The Cuckfield Board of Guardians invite tenders for supplying the Workhouse with bricklayers', carpenters', plumbers', painters', and ironmongers' materials and work as per scheduled prices. Forms of tender can be obtained of Mr. Edward J. Waugh, Clerk, Haywards Heath.

SEPTEMBER 23.—**Romford.**—GRANITE.—The Romford U.D.C. invite tenders for the supply of about 1,300 tons of best blue Guernsey granite. Forms of tender can be obtained on application to either Mr. J. Turvey, the Surveyor, or Mr. Charles T. King, Clerk, at the Council Offices, Romford.

SEPTEMBER 24.—**Brighton.**—GRANITE.—The Brighton B.C. invite tenders for the supply of 600 tons of broken granite. Specification and form of tender may be obtained on application at the office of the Borough Surveyor, at the Town Hall, Brighton.

Digitized by Google

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*INSTRUCTOR IN CABINET MAKING	London C.C.	100*l.* per annum	Sept. 18
*INSTRUCTOR IN METALWORK	London C.C.	100*l.* per annum	Sept. 18

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*STOCK OF STONE, ETC., OXFORD—On the Premises	Hamlet & Dulake	Sept. 13
*MISCELLANEOUS STOCK, BETHNAL GREEN, E.—On the Premises	William F. Laing	Sept. 15

MISCELLANEOUS—*Continued from page 297.*

THIRD INTERNATIONAL CONGRESS OF SCHOOL HYGIENE, PARIS.

Owing to unforeseen material difficulties, and in order to give its due importance to the Exhibition attached to the Congress, the French Organising Committee have decided to postpone the date of the Congress until the first week of August (2nd to 7th), 1910.

AYR AULD BRIG.

At the annual meeting of the Executive Council of the Burns Clubs Federation at Dunfermline last Saturday, the Chairman, Bailie Houston, reporting on the progress of the preservation works at the Auld Brig o' Ayr, said that what had been carried on during the past twelve months had been eminently satisfactory up to a certain point. The whole of the work had been accomplished with the exception of the restoration of the parapet and the roadway. It had been decided to take in offers for a contract to complete the work. New piers had been constructed without the arches being taken down, the work being done bit by bit. Further operations would proceed at once, and it was almost certain the work would be finished this year.

Patents.

APPLICATIONS PUBLISHED.*

16,777 of 1908.—James Humphreys and William Willis: Means for preventing the entry of draughts, dust, or rain beneath doors.

16,908 of 1908.—Alphonse Theyskens: Means for mounting sliding doors and the like.

19,006 of 1908.—Alfred Charles Burton: Means for preventing rattling of window sashes.

21,359 of 1908.—David John: Means for fixing rain-water pipes and the like.

21,671 of 1908.—Frank Bettridge: Cowls, ventilators, and the like.

23,984 of 1908.—Carl Kusch: Saw and guard or frame therefor.

23,988 of 1908.—John Gustaf Adolf Rhodin: Manufacture of slag cement.

24,584 of 1908.—David Hague: Door lock.

26,521 of 1908.—Langbein-Pfanhauser-Werke Aktiengesellschaft: Process for rust-proof coating iron and steel.

26,706 of 1908.—Charles Buell Bishop: Door closers and checks.

27,885 of 1908.—William Dyce Cay: Reinforcing or strengthening concrete, cement, mortar, and such-like material.

27,944 of 1908.—Charles Wesley Gray and Betram Lawrance Hurst: Metal skeletons for the reinforcement of structures of concrete or artificial stone.

4,099 of 1909.—Edward Arthur Verger: Ventilators.

14,075 of 1909.—John Thenser: Means for securing glass in window sashes and the like.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

August 25.—By WILLIAM HOPE (at Wigton).
Wigton, Cumberland.—The Highmoor Estates, 1,126 acres, f. and c. £37,035
August 26.—By J. HANNAFORD & SON (at Winkleigh).
Winkleigh, Devon.—Smytham Farm and other holdings, 373 a. 3 r. 13 p., f. 5,573
September 2.—HERBERT HOOKEY & CO.
Charlton.—194, Woolwich-rd, (s.), u.t. 61 yrs., g.r. 4*l.* 4s., y.r. 35*l.* 500
337, Woolwich-rd., (s.), u.t. 67 yrs., g.r. 7*l.* 10s., y.r. 40*l.* 400
Milford-on-Sea, Hants.—Shorefield-rd., two cottages, f. 315

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

By JAMES R. MCDONALD.
Upton Park.—2, 4, and 6, Walton-rd., u.t. 83 yrs., g.r. 6*l.*, w.r. 85*l.* 16s. £465
By WHITE & SONS (at Dorking).
Coldharbour, Surrey.—Village stores and post office, f. 1,525

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	,, delivered
Flettons	1 4 6	,, at railway depôt.
Best Fareham Red	3 12 0	,, ,, ,,
Best Red Pressed Ruabon Facing	5 0 0	,, ,, ,,
Best Blue Pressed Staffordshire	3 15 0	,, ,, ,,
Do. Bullnose	4 0 0	,, ,, ,,
Best Stourbridge Fire Bricks	3 14 0	,, ,, ,,
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	,, ,, ,,
Headers	9 17 6	,, ,, ,,
Quoins, Bullnose, and Flats	13 17 6	,, ,, ,,
Double Stretchers	15 17 6	,, ,, ,,
Double Headers	12 17 6	,, ,, ,,
One Side and two Ends	16 17 6	,, ,, ,,
Two Sides and one End	17 17 6	,, ,, ,,
Splays and Squints	15 7 6	,, ,, ,,
Best Dipped Salt Glazed Stretchers	10 7 6	,, ,, ,,
Headers	9 17 6	,, ,, ,,
Quoins, Bullnose, and Flats	13 17 6	,, ,, ,,
Double Stretchers	15 17 6	,, ,, ,,
Double Headers	12 17 6	,, ,, ,,
One Side and two Ends	16 17 6	,, ,, ,,
Two Sides and one End	17 17 6	,, ,, ,,
Splays and Squints	15 7 6	,, ,, ,,
Second Quality White and Dipped Salt Glazed	1 5 0	,, less than best.
	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	,, ,,
Best Portland Cement	28 0	per ton, ,,
Best Ground Blue Lias Lime	19 0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	,, ,,
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	,, ,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	,, ,,

STONE (*continued*).

	s. d.		
Ancaster in blocks	1 10	per ft. cube	deld. rly. dep.
Beer ,,	1 6	,, ,,	,, ,,
Greenshill ,,	1 10	,, ,,	,, ,,
Darley Dale in blocks	2 4	,, ,,	,, ,,
Red Corsehill ,,	2 2	,, ,,	,, ,,
Closeburn Red Freestone	2 0	,, ,,	,, ,,
Red Mansfield ,,	2 4	,, ,,	,, ,,

YORK STONE—*Robin Hood Quality.*

	s. d.		
Scappled random blocks	2 10	per ft. cube,	deld. rly dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super.	,,
6 in. rubbed two sides ditto, ditto	2 6	,,	,,
3 in. sawn two sides slabs (random sizes)	0 11½	,,	,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	,,	,,
1½ in. to 2 in. ditto, ditto	0 6	,,	,,

HARD YORK—

Scappled random blocks	3 0	per ft. cube,	,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft super.	,,
6 in. rubbed two sides ditto	3 0	,,	,,
3 in. sawn two sides slabs (random sizes)	1 2	,,	,,
2 in. self-faced random flags	0 5	,,	,,

SLATES.

In. In.	£ s. d.		
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.	
20×12 ,, ,,	13 17 6	,,	,,
20×10 first quality ,,	13 0 0	,,	,,
20×12 ,, ,,	13 15 0	,,	,,
16×8 ,, ,,	7 5 0	,,	,,
22×10 best blue Portmadoc	12 12 6	,,	,,
16×8 ,, ,,	6 12 6	,,	,,
20×10 best Eureka unfading green	15 17 6	,,	,,
20×12 ,, ,,	18 7 6	,,	,,
18×10 ,, ,,	13 5 0	,,	,,
16×8 ,, ,,	10 5 0	,,	,,
20×10 permanent green	11 12 6	,,	,,
18×10 ,, ,,	9 12 6	,,	,,
16×8 ,, ,,	6 12 6	,,	,,

TILES.

	s. d.		
Best plain red roofing tiles	42	0 per 1000 at rly.	dep.
Hip and Valley tiles	3	7 per doz.	,,
Best Broseley tiles	50	0 per 1000	,,
Do. Ornamental tiles	52	6 ,,	,,
Hip and Valley tiles	4	0 per doz.	,,
Best Ruabon red, brown, or brindled do. (Edwards)	57	6 per 1000	,,
Do. Ornamental do.	60	0 ,,	,,
Hip tiles	4	0 per doz.	,,
Valley tiles	3	0 ,,	,,
Best Red or Mottled Staffordshire do. (Peakes)	51	9 per 1000	,,
Do. Ornamental do.	54	6 ,,	,,
Hip tiles	4	1 per doz.	,,
Valley tiles	3	8 ,,	,,
Best "Rosemary" brand plain tiles	48	0 per 1000	,,
Best Ornamental tiles	50	0 ,,	,,
Hip tiles	4	0 per doz.	,,
Valley tiles	3	8 ,,	,,
Best "Hartshill" brand plain tiles, sand-faced	50	0 per 1000	,,
Do. pressed	47	6 ,,	,,
Do. Ornamental do.	50	0 ,,	,,
Hip tiles	4	0 per doz.	,,
Valley tiles	3	6 ,,	,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6 per 1000	,,
Hand-made sand-faced	45	0 ,,	,,
Hip tiles	4	0 per doz.	,,
Valley tiles	3	6 ,,	,,

WOOD.

BUILDING WOOD.	At per standard.			£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	£ 13	s. 10	d. 0	... 15 0 0
Deals: best 3 by 9	13	0	0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.
Deals: seconds	1	0	0	less than best.
Battens: seconds	0	10	0	,,
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	... 9 10 0

Digitized by Google

WOOD (*continued*).

BUILDING WOOD—(*continued*)—	At per standard.
Foreign Sawn Boards—	£ s. d. £ s. d.
1 in. and 1¼ in. by 7 in.	0 10 0 more than battens.
¾ in.	1 0 0 ,,
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0 ... 5 0 0
Seconds	4 0 0 ... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6 ... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0 ... 3 10 0
Swedish balks	2 10 0 ... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0 ... 4 15 0

JOINERS' WOOD.	At per standard.
White Sea: first yellow deals,	
3 in. by 11 in.	24 0 0 ... 25 0 0
3 in. by 9 in.	22 0 0 ... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0 ... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0 ... 20 0 0
3 in. by 9 in.	17 10 0 ... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0 ... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0 ... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0 ... 12 0 0
Petersburg: first yellow deals,	
3 in. by 11 in.	21 0 0 ... 22 10 0
Do. 3 in. by 9 in.	18 0 0 ... 19 10 0
Battens	13 10 0 ... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0 ... 17 0 0
Do. 3 in. by 9 in.	14 10 0 ... 16 0 0
Battens	11 0 0 ... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0 ... 14 0 0
Do. 3 in. by 9 in.	12 10 0 ... 14 0 0
Battens	10 0 0 ... 11 0 0
White Sea and Petersburg—	
First white deals, 3 in. by 11 in.	14 10 0 ... 15 10 0
" " 3 in. by 9 in.	13 10 0 ... 14 0 0
Battens	11 0 0 ... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0 ... 14 10 0
" " 3 in. by 9 in.	12 10 0 ... 13 10 0
Battens	10 0 0 ... 11 0 0
Pitch-pine: deals	18 0 0 ... 21 0 0
Under 2 in. thick extra	0 10 0 ... 1 0 0
Yellow pine—First, regular sizes	44 0 0 upwards.
Oddments	32 0 0 "
Seconds, regular sizes	33 0 0 "
Oddments	28 0 0 "
Kauri Pine—Planks, per ft. cube	0 3 6 ... 0 5 0
Danzig and Stettin Oak logs—	
Large, per ft. cube	0 3 0 ... 0 3 9
Small " "	0 2 6 ... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6 ... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½ ... 0 0 9½
¾ in. do. do	0 0 7 ... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9 ... 0 1 0
Selected, Figury, per ft. super. as inch	0 1 6 ... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10 ... 0 1 0
Teak per load	17 0 0 ... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0 ... 0 5 0
Prepared Flooring, etc.—	Per square.
1 in. by 7 in. yellow, planed and shot	0 13 6 ... 0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0 ... 0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0 ... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0 ... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6 ... 0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0 ... 0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0 ... 0 13 6
1 in. by 7 in. " "	0 14 0 ... 0 18 0
¾ in. by 7 in. white " "	0 10 0 ... 0 11 6
1 in. by 7 in. " "	0 12 9 ... 0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.
	£ s. d. £ s. d.
Rolled Steel Joists, ordinary sections	7 0 0 ... 7 10 0
Compound Girders, ordinary sections	9 0 0 ... 10 0 0
Steel Compound Stanchions	11 0 0 ... 12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0 ... 10 0 0
Flitch Plates	9 0 0 ... 9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0 ... 8 10 0

METALS.

IRON—	Per ton, in London. £ s. d. £ s. d.
Common Bars	8 10 0 ... 9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0 ... 9 5 0
Staffordshire "Marked Bars"	10 10 0 ... —
Mild Steel Bars	8 15 0 ... 9 5 0
Hoop Iron, basis price	9 5 0 ... 9 10 0
" " Galvanised	17 0 0 ... —

(*And upwards, according to size and gauge.)

Sheet Iron, Black—	
Ordinary sizes to 20 g.	9 15 0 ... —
" " 24 g.	10 15 0 ... —
" " 26 g.	12 5 0 ... —
Sheet Iron, Galvanised, flat, ordinary quality—	
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0 ... —
Ordinary sizes to 22 g. and 24 g.	15 10 0 ... —
" " 26 g.	18 10 0 ... —
Sheet Iron, Galvanised, flat, best quality—	
Ordinary sizes to 20 g.	18 0 0 ... —
" " 22 g. and 24 g.	18 10 0 ... —
" " 26 g.	20 0 0 ... —
Galvanised Corrugated Sheets—	
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0 ... —
" " 22 g. and 24 g.	14 15 0 ... —
" " 26 g.	16 5 0 ... —

METALS (*continued*).

IRON (*continued*)—	Per ton, in London. £ s. d. £ s. d.
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0 ... —
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0 ... —
" " " 26 g.	15 0 0 ... —
Cut Nails, 3 in. to 6 in. (Under 3 in., usual trade extras.)	10 10 0 ... 11 0 0

LEAD, &c.	Per ton, in London. £ s. d.
LEAD—Sheet, English, 3lb. and up.	16 2 6 ... —
Pipe in coils	16 12 6 ... —
Soil pipe	18 12 6 ... —
Compo pipe	19 12 6 ... —
ZINC—Sheet—	
Vielle Montagne	27 5 0 ... —
Silesian	27 0 0 ... —
COPPER—	
Strong sheet per lb.	0 1 0 ... —
Thin " "	0 1 1 ... —
Copper nails "	0 0 10 ... —
Copper wire "	0 0 10 ... —
BRASS—	
Strong Sheet "	0 0 11 ... —
Thin "	0 1 0 ... —
TIN—English Ingots "	0 1 5 ... —
SOLDER—Plumbers' "	0 0 7 ... —
Tinmen's "	0 0 9½ ... —
Blowpipe "	0 1 0 ... —

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d " "
" fourths	4½d. " "
Flute Sheet, 15 oz	3½d. " "
" 21 oz	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅛ "	2⅝d. " "
⅛ "	2¾d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 2
" " ,, in barrels	"	0 2 3
" " ,, in drums	"	0 2 6
Boiled ,, ,, in barrels	"	0 2 6
" " ,, in drums	"	0 2 9
Turpentine in barrels	"	0 3 3
" in drums	"	0 3 5
Genuine Ground English White Lead	per ton	20 10 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ALDERSHOT.—For making up Holly-road, for the Council. Mr. F. C. Uren, A.M.Inst.C.E., Surveyor to the Council:—

A. H. Ball & Co., Ltd	£2,768 2 7
Fulford & Crow	2,633 13 0
A. Wilcox	2,574 13 2
J. C. Trueman	2,519 16 6
W. H. Wheeler & Co., Ltd	2,388 19 0
T. C. Starkey	2,379 0 8
Martin, Wells, & Co., Ltd.	2,106 10 8
G. A. Franks	2,089 6 6
G. Kemp & Co.	2,034 0 0
Ripley, Strong, & Co.	2,018 9 8
W. Norris, Hale, Farnham*	1,990 7 6

ALVESTON.—For the erection of a cottage. Mr. Albert H. Callaway, architect and surveyor, Union-chambers, Stratford-on-Avon. Quantities by architect:—

Fincher & Co.	£385 10	Whateley & Sons	£310
Hirons	351 17	E. T Kennard	298
J. Cox	319 0	Harris & Sons, Stratford-on-Avon*	290
Price & Sons	317 0		

AYLESBURY.—For new stables, stores, sheds, etc. Cambridge-street, for the Urban District Council. Mr. W. H. Taylor, Engineer and Surveyor, Town Hall, Aylesbury. Quantities by Engineer:—

A. H. Frydd	£2,187 0 0
W. Y. Green & Co.	2,143 10 0
J. Moseley	1,925 0 0
Bosworth & Lowe	1,922 15 0
Mayne & Son	1,898 0 0
W. G. Stone	1,830 0 0
R. Jewell & Sons	1,796 15 6
J. Honour & Son	1,749 0 0
E. H. Gibson & Sons	1,747 0 0
R. W. Locke	1,687 0 0
Webster & Cannon, Aylesbury*	1,668 0 0
Crook & Judd	1,647 12 6
W. & D. Wilkins	1,645 0 0

BARTON.—For erecting new premises, High-street, for the Stamford, Spalding, and Boston Banking Co. Mr. Arthur Stamp, architect. Barton-on-Humber:—

Bricklayers, Plasterers, etc.: B. Aston & Sons, Barton*	£417 14 6
Slaters: Dawber, Townsley, Grimsby*	45 2 6
Masons: King & Sons, Barton*	145 0 0
Joiner: J. Stamp, Barton*	349 0 0
Plumber, Glazier, Electrician, Painter, etc: H. Flower, Barton*	117 0 0

BURNOPFIELD.—For erecting four houses, for Mr. John Simpson. Mr. J. J. Eltringham, architect and surveyor, Blackhill:—

A. & R. Davis, Burnopfield, R.S.O., Co. Durham	£764 12 0

DERBY.—For alterations to the Union Workh: use, for the Guardians. Mr. F. C. Coulthurst, architect, 4, Albert-street, Derby:—

J. Young, Wallbrook-road, Derby*	£439 9 0

[Ten tenders received.]

DOVEHOLES (near Buxton).—For a concrete service tank, etc., for Chapel-en-le-Frith Rural District Council. Messrs. Swann & Brady, Engineers, Town Hall, Chapel-en-le-Frith:—

T. Goddard & Son, Dale-road, Doveholes	£146 3 5

FAREHAM.—For erecting a house for Mr. Charles Cole. Messrs. Hall, Pain, & Goldsmith, architects, 48, West-street, Fareham. Quantities by Mr. C. W. Ball, Whittington-chambers, King's-road, Southsea:—

R. Scammell	£1,581 0 0	E. Willcox	£1,285 0 0
Chance & Sons	1,422 7 0	W. G. Latty	1,250 0 0
C. Wright	1,408 16 4	H. Plummer	1,250 0 0
J. Hunt	1,406 0 0	Glover & Son	1,246 0 0
W. T. Dugan	1,378 6 6	T. Draper	1,209 0 0
F. A. Lane	1,338 0 0	A. J. Fry, Fareham*	989 0 0
F. J. Privett	1,305 0 0		
H. Buckett	1,300 0 0		

FELLING.—For erecting a boundary fence and gates and laying on water to the centre of land for allotments, for the Urban District Council. Mr. C. W. Hall, Surveyor Felling:—

Bye, Elsdon-street, Felling*	£79 16 3

HEYWOOD.—For new Primitive Methodist school Messrs. J. D. & S. J. Mould, architects, Walmersley-road, Bury, and 52, Queen Victoria-street, London. Quantities by architects:—

S. Barker	£1,869	F. W. Porter, Bury*	£1,687
J. Twelves	1 860		

LEYLAND.—For Thirlmere water supply works (Contract 1, pipes, etc.), for the Urban District Council. Mr. M. H. Wilkinson, M.Inst.C.E., Surveyor, Public Hall Buildings, Leyland:—

Supplying Pipes, etc.

Stanton Iron Works Co., Ltd., near Nottingham*	£1,081 5 11

Excavating, etc., Laying and Jointing Pipes, etc., Loading and Unloading, etc.

T. Jackman, jun., 65, Union-street, Chorley*	£810 5 0

For Supply and Delivery of Valves, Meters, Cases, and Fittings.

J. Blakeborough & Sons, Woodhouse Works, Brighouse*	£104 9 0

LIVERSEDGE.—For wrought iron fencing and gates, Mark-street improvement, for the Urban District Council. Mr. F. Langley, Engineer and Surveyor, Council Offices Liversedge:—

A. Wood	£121 5 6	S. Clough	£78 0 0
Motley & Green	103 5 0	J. Tordoff & Son	78 0 0
A. Lister	96 10 0	G. F. Hirst	76 10 0
E. W. Proctor	93 0 0	J. Ellwell	76 0 0
Firth Bros.	90 10 0	Bayliss, Jones, & Bayliss	74 0 0
J. S. Hardwick	88 7 8	W. P. Snell	74 0 0
S. Parsons & Co.	82 0 0	G. H. Robinson	72 0 0
Cuniffe & Dean	80 0 0	W. Miller & Sons	68 19 6
Thompson & Walton	79 0 0	F. Ashton, Mirfield*	65 0 0
Hill & Smith	78 6 6		

LONDON.—For the erection of a new Police Section House at Beak-street, W. Mr. J. Dixon Butler, F.R.I.B.A. Surveyor to the Metropolitan Police, New Scotland-Yard S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

Higgs & Hill, Ltd	£10,740
Ashby & Horner	10,653
Prestige & Co., Ltd.	10,576
Lovatt, Ltd.	10,430
Mowlem & Co., Ltd.	10,425
Leslie & Co., Ltd.	10,295
Patman & Fotheringham	10,271
Appleby & Sons	10,247
F. & H. F. Higgs	10,196
Lole & Co.	10,099
Godson & Sons	10,027
Kilby & Gayford, Ltd.	9,936

LUTON.—For reinforced concrete floors and a circular dome in connexion with the new library, for the Town Council:—

Lewis, Rugg & Co., Westminster, S.W.*	£580

Digitized by Google

LUTON.—For improvement works in Kenilworth-road, Hampton-road, West Hill-road, etc., for the Town Council:—

G. Powdrill, Luton*	£434	4	5	Kenilworth-road.
	428	2	2	Hampton-road.
	242	15	2	West Hill-road.
	17	19	6	Ivy-road.

MELTON MOWBRAY.—For laying a new pitch-pine floor in the large hall, for the Corn Exchange Co.:—
T. & H. Denman, Melton Mowbray* £70 8

NEWPORT (Isle of Wight).—For foundations for new suction gas-engine to be supplied to waterworks, Carisbrooke, Isle of Wight, for the Corporation. Mr. J. W. Way, Engineer:—

G. F. Quinton	£162	W. F. Williams ..	£135 0
A. P. Williams	147	H. Scott, Newport*	127 10
R. Couldrey	138		

ORPINGTON.—For painting works to twenty houses in High-street. Mr. St. Pierre Harris, architect, 8, Laurence Pountney-hill, E.C., and Orpington:—

R. Large	£134 0	W. R. Taylor*	£126 10

OSWESTRY.—For sewage disposal works for the Town Council. Mr. G. William Lacey, M.Inst.C.M.E., Borough Engineer and Surveyor, Guildhall, Oswestry:—

O. Wright & Co.	£8,817 8 1
S. Hutton & Co.	8,420 0 0
H. A. Jones	6,800 0 0
G. P. Trentham	6,781 13 11
R. Williams	6,780 10 0
Jowett Bros.	6,768 12 2
R. C. Brebner & Co.	6,317 6 1
L. Woodland	6,185 14 4
A. J. Cottle	5,855 10 8
W. Underwood & Bro.	5,804 19 1
G. Bell & Sons, Ltd.	5,749 0 0
J. Taylor & Son	5,679 11 0
W. Morley & Sons	5,553 4 10
Johnson Bros.	5,529 0 0
A. Hill & Co	5,447 12 0
W. Cunliffe & Sons	5,248 0 0
W. H. Thomas, Oswestry*	5,150 0 0

[Borough Engineer's estimate, £5,637 18s. 1d.]

OSWESTRY.—For alterations and additions to the Round House in the Smithfield, for the Town Council. Mr. G. W. Lacey, C.E. Borough Engineer and Surveyor, Guildhall, Oswestry:—

J. Higgins	£110 4 0	J. C. Vaughan, Roft-street* ..	£71 17 6
W. Felton	95 10 0		
Jones & Evans	94 6 7		

PLUMSTEAD.—For erecting open-air wards at the Infirmary, for Woolwich Guardians. Messrs. Church, Quick, and Whincop, architects, William-street, Woolwich:—

E. Mills	£1,655 0 0	Gathercole Bros.	£1,355 0 0
G. H. Gunning	1,596 0 0	Batley, Son, & Holness	1,345 10 0
T. W. Moss ..	1,546 17 6	A. J. Ware ..	1,343 0 0
E. Proctor & Sons	1,537 0 0	J. W. Jerram	1 341 0 0
H. L. Holloway	1,483 0 0	Multon & Wallis	1,341 0 0
A. S. Douglas	1,480 11 0	H. Kent.....	1,340 0 0
Stephens & Son	1,419 0 0	Sanford & Co.	1,332 0 9
B. E. Nightingale.....	1,408 0 0	F. & G. Foster, Sunny Bank, Norwood Junction* ..	1 224 0 0
W. Harris	1,405 0 0		
Thomas & Edge	1,383 0 0		
W. H. Hyde & Co.	1,361 10 0		

PLYMOUTH.—For alterations and repairs at No. 36, Looe-street, for the Guardians. Mr. F. A. Wiblin, architect, 92, Old Town-street, Plymouth:—
A. G. Huddy, Higher Batter-street, Plymouth £265

RADCLIFFE.—For new United Methodist church in Ainsworth-road. Messrs J. D. & S. J. Mould, architects, Walmersley-road, Bury, and 52, Queen Victoria-street, London. Quantities by architects:—

Blomley & Co.	£2,880	R. & T. Howarth ..	£2,625
Gibson & George ..	2,860	F. W. Porter, Bury*	2,527
J. Allen	2,705		

RYDE (Isle of Wight).—For the first part of the St. John's Parish Hall, Oakfield. Mr. George Boughton, architect, Ryde:—

T. & E. W. Jenkins	£697 10	A. E. Hayden....	£598 10
J. Newnham	674 10	Wheeler Bros.....	597 10
A. P. Williams ..	670 0	J. Wheeler & Sons, Ryde*	585 0
J. Ball & Son	648 0	Adams & Mitchell	547 18
G. Gallienne	605 0	J. Attrill	516 12
F. H. Holland....	600 0		

SAHAM TONEY (Norfolk).—For work in connexion with Saham Toney Hall. Mr. Herbert J. Green, A.R.I.B.A., architect, Norwich and Kings Lynn:—

	Main Estimate.	Extra for Alternatives.
J. Thompson & Co.	£8,968 0 0	£1,154 15 5
G. Riches	8,740 0 0	685 0 0
Cubitt & Gotts	7,806 14 0	988 6 5
J. Youngs & Son	7,297 0 0	950 0 0
R. Shanks	7,198 0 0	856 0 0
J. Cracknell, Peterborough‡	7,168 0 0	796 0 0

‡ Accepted conditionally.

ST. PAUL'S CRAY (Kent).—For additions to the Cray Valley Cottage Hospital. Mr. St. Pierre Harris, architect, 8, Laurence Pountney-hill, E.C., and Orpington:—

R. A. Lowe & Co..	£2,400	T. Knight	£2,209
T. D. Graty	2,377	W. Blay, Ltd.	2,175
T. Rider & Son	2,276	H. Somerford & Son*	2,025

STEVENAGE.—For reservoir works, for the Urban District Council. Messrs. W. R. & W. Phillips, engineers, Luton:—

W. J. Spratt	£2,595 0 0
H. V. Smith & Co.	2,303 4 1
Edwards & Co.....	2,298 5 3
Wallace & Inns	2,274 16 7
F. G. Brummell	2,254 17 3
L. Lown & Co.....	2,242 14 10
T. J. Davies.....	2,201 14 4
A. Jewell	2,184 8 0
Wilkinson & Co.	2,159 0 0
R. C. Brebner & Co.	2,120 0 0
Dean & Perkins	2,097 17 6
P. R. Paul	2,097 0 0
Rowell & Sons'.....	2,081 8 6
Shrouder & Matthews	2,062 0 0
W. French	2,056 19 6
G. Bell & Sons, Ltd.	1,893 0 0
A. E. Farr	1,860 0 0
J. Willmott & Sons, Hitchin*	1,830 0 0
Ekins & Co.....	1,813 0 0

WEST WINCH.—For erecting a house at West Winch, for Mr. Oakes, Lynn. Messrs. W. Jarvis & Son, architects, Paradise-parade, Lynn. Quantities by architects:—

Cater & Co....	£430 17 0	S. Hampton ..	£342 8 6
F. & S. Dickerson	375 0 8	Pitcher	338 19 0
J. Medwell	367 10 1	Reeder	335 0 0
Ives & Sons ..	360 3 1	Hall & Lawson	327 12 1
F. Ashby, Ltd.	360 0 0	Anderson	317 4 0
H. W. Barnes & Co.	344 0 0	W. White, Lynn*.....	272 18 11

WINTON.—For erecting new elementary schools in the Sherborne-road, for the Education Committee, Bournemouth. Mr. F. W. Lacey, F.R.I.B.A., Architect to the Education Committee, Municipal Buildings, Bournemouth:—
J. & M. Patrick, Wandsworth, S.W.* .. £13,930

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone Nos. 511 and 831 Deptford.

Registered Trade Mark.
Polonceau Asphalte.

PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE,
WHITE SILICA PAVING.
SEYSSEL ASPHALTE (*Direct from the Mines*).

JOHN BOLDING & SONS LTD.
MANUFACTURERS OF
WATER CLOSETS, BATHS, LAVATORIES, etc.
IRON AND BRASS FOUNDERS.
EXTENSIVE SHOWROOMS. INSPECTION INVITED.
JUST PUBLISHED
NEW ILLUSTRATED CATALOGUE.
CROSVENOR WORKS, DAVIES STREET, LONDON, W.

No. 68.
"FIOS"
W.C. Suite,
comprising White Glazed Pedestal W.C. and Seat Extension, Mahogany Seat, 2-gallon Cistern, Brackets, Earthenware Pull, Brass Chain, Lead Flushing Pipe, Brass Clips, and Lead Collar.

EWART'S
Cures in 19 cases out of 20.
"EMPRESS"
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
Established 1834.
Telephone: 751 North.
SMOKE-CURE

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3476. SEPTEMBER 18, 1909.

Contents.

	PAGE
BARCELONA	303
THE TRADE UNION CONGRESS	306
NOTES	307
THE STRENGTH OF RIVETED JOINTS	308
BLACKFRIARS BRIDGE WIDENING	311
THE WORK OF THE ROYAL COMMISSION ON SEWAGE DISPOSAL	311
NOTES FROM FRANCE	313
LEGAL COLUMN	313
MEETINGS	314
FIFTY YEARS AGO	314
ILLUSTRATIONS:—	
LAVENHAM CHURCH TOWER	314
BERKSHIRE COUNTY COUNCIL OFFICES, READING	314
PROPOSED CHURCH AT BATTS CORNER, FRENSHAM	315
ALMSHOUSES AT STRATFORD-ON-AVON	315
APPLICATIONS UNDER THE 1894 BUILDING ACT	316
ARCHITECTURAL SOCIETIES	317
THE "BEST" ENLARGING AND REDUCING SCALE	317
LONDON AND DISTRICT BOROUGH COUNCILS	317
PROJECTED NEW BUILDINGS IN THE PROVINCES	318
COMPETITION NEWS	318
TRADE CATALOGUES	318
BOOKS RECEIVED	318
CORRESPONDENCE:—	
REINFORCED CONCRETE	318
ELTHAM PARISH HALL COMPETITION	319
ST. ALFEGE, GREENWICH	319
INSECTS IN TIMBER ROOFS	319
OBITUARY	319
GENERAL BUILDING NEWS	319
STAINED GLASS AND DECORATION	320
SANITARY AND ENGINEERING NEWS	320
MISCELLANEOUS	321
PATENTS	321
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	322
PRICES CURRENT	324
TENDERS	325

SUPPLEMENT:—

REVIEWS OF BOOKS.

E. H. Sedding's "Norman Architecture in Cornwall"; R. J. Haddon's "Australian Architecture: A Technical Manual for all those engaged in Architectural and Building Work"; R. W. Billings's "The Baronial and Ecclesiastical Antiquities of Scotland," Parts XII. to XVI.; G. S. Coleman's "Reinforced Concrete Diagrams"; W. N. Twelvetrees's "Reinforced Concrete Construction"; T. Potter's "Concrete. Its Uses in Building from Foundations to Finish"; A. C. Davis's "Portland Cement"; A. L. Colby's "Reinforced Concrete in Europe"; "The Concrete Institute; Transactions and Notes," Vol. 1., Part 3; H. R. Mill's "British Rainfall, 1908"; H. B. Richey's "The Building Mechanics' Ready Reference"; C. Xydis's "Handbook on Tacheometrical Surveys"; W. C. Easdale's "The Practical Management of Sewage-disposal Works."

MAGAZINES AND REVIEWS.

Illustrations.

LAVENHAM CHURCH TOWER. MEASURED AND DRAWN BY MR. ALAN G. BRACE.

FIRST PREMIATED DESIGN FOR BERKSHIRE COUNTY COUNCIL OFFICES, READING. BY MESSRS. WARWICK & HALL.

1. ELEVATIONS AND PLANS.
2. DETAIL ELEVATION.

CHAPEL OF EASE, FRENSHAM, SURREY. MR. W. CURTIS GREEN, A.R.I.B.A., ARCHITECT.

Illustrations in Text.

	PAGE
BARCELONA:—	
BARCELONA CATHEDRAL; VIEW OF THE TRANSEPT TOWERS FROM THE ROOF OF THE CLOISTERS	304
SKETCH PLAN, BARCELONA	305
BRIDGE OVER THE LLOBREGAT, NEAR BARCELONA	306
THE STRENGTH OF RIVETED JOINTS:—	
FIG. 1	308
FIGS. 2 TO 5	310
PLANS OF LAVENHAM TOWER	314
ALMSHOUSES AT STRATFORD-ON-AVON	315

Barcelona.

BARCELONA, the scene of such a remarkable revolution within the past few weeks, is a noteworthy place from an architectural standpoint, or rather from several architectural standpoints, both ancient and modern.

In ancient days the province of Catalonia furnished a school of architects and masons, who, evidently following the course of the semi-crusading, semi-buccaneering enterprise and commerce of the XIth-XIVth centuries, established a perceptible influence on the design and decoration of the great Frank monuments which still survive in the Levant. The great abbey of Bella Pais, and the cathedral of Famagusta in Cyprus, are of a distinctly Catalan character, just as the cathedral of Nicosia, Cyprus, and the Gothic buildings of Jerusalem are of the earlier French importation.

It is to be hoped that the great and beautiful Gothic churches of Barcelona, the XIVth-century cathedral, and Santa Maria del Mar have not been injured to any great extent during the recent rioting. A venerable building, the convent of S. Pablo, was wrecked by the mob, which, not for the first time perhaps in Spanish history, seems to have been actuated by a spirit of anti-religious fanaticism. The district swept by the guns of the fortress on Mount Juich is, however, comparatively modern and uninteresting, and lies outside the confines of the ancient city marked by the Rambla (*Arab*, Ramleh, a sandy place), which is perhaps one of the earliest instances of a fortification turned into a boulevard. S. Pablo during the middle ages would have been a suburban church; and after its enclosure within the fortification of a later period it has, of course, been much "restored" and modernised. Another ancient church—S. Pedro de Puellas—shared the same fate, but this was an even less important example of mediæval art, its tower being the only portion remaining of an artistic character.

During the XIXth century Barcelona underwent a most remarkable transformation. As the most important city of Spain, competitor with Marseilles, Genoa, and Naples in the world-commerce which centres in the Western Mediterranean, Barcelona has become an enormous commercial centre on a scale which rivals any European city or urban district, with the exception of London. The carrying out of the extension of the urban district is one of the most remarkable things of the kind on record. How it could have been brought about in so complete a manner remains a matter of surprise to the visitor. The idea of this wonderful scheme is attributed to the alcalde Ruis y Taulet, to whom a monument has been erected in a prominent position in the midst of the new quarters of which he was the originator.

Up to the middle of the XIXth century Barcelona remained an old-world city within the usual earthwork fortifications of a now entirely obsolete character, with a large citadel standing at the north-east corner to defend the already important port. At the present day not a trace of these old-world appearances survives. The citadel has been levelled with the surrounding area, and the site converted into a large public park, an ancient palace once within its walls having been preserved to the use of a municipal museum. The old enceinte of the city has, of course, long since been demolished and converted into the usual boulevards (*Span.* "rondas") of the ordinary continental city.

The most remarkable development of city extension has, however, taken place during the last twenty years. During that period the surrounding country and suburbs have been brought within the operation of a building scheme which regulates the planning of new streets and quarters according to the rectangular block system adopted in some modern American cities. The area taken within the new limits of Barcelona is considerable; the principal street, if ever completed, will be 10 kilometres long, and of an average width of 40 metres, or more than 130 ft. The shorter sides of the new city will have a length of more than 5 kilometres. Within this area the land is divided up into more than 1,000 square blocks, all of precisely the same dimensions, 100 metres by 100 metres, with their four corners cut off for the convenience of the thoroughfare. Each of these block sites is apparently supposed to meet all the requirements of house-owners, who are, of course, not expected or permitted to make use of more land for any one house or manufactory than the area of 10,000 sq. metres. Certain exceptions were, of course, inevitable: the railway-stations break through the exact regularity of the scheme on account of the necessarily large area they occupy,

Digitized by Google

and certain important buildings, such as a hospital, a prison, etc., have to be accommodated with two or three blocks. This vast area of about 50 sq. kilometres is only partially occupied by the new buildings, all set square with each other, and the presence of irregular old buildings which still survive in certain parts tends to prevent, for the present, the square planning of the city from being very noticeable. In course of time, as the new streets are lined up with houses, the rigid regularity of the suburbs will give a marked character to Barcelona.

The objects in view with the schemers and planners of these cities built on the block system are somewhat obscure and unaccountable. Æsthetically, no one is prepared to instance Turin or Mannheim as especially beautiful or interesting as old examples of the idea, and certainly the great American examples of such civic planning have never excited much public praise. For "viability" (to coin a word from the Italian) or convenience as thoroughfares, streets planned at right angles to each other are as inconvenient as any other arrangement if a person wishes to proceed in a diagonal direction. The only two practical

Barcelona Cathedral; view of the transept towers from the roof of the cloisters.

Digitized by Google

objects which the arrangement facilitates are perhaps drainage and street lighting. In the matter of police supervision there may also be some slight advantage, although Barcelona as an example of such towns seems to be but little better off, to judge by recent events.

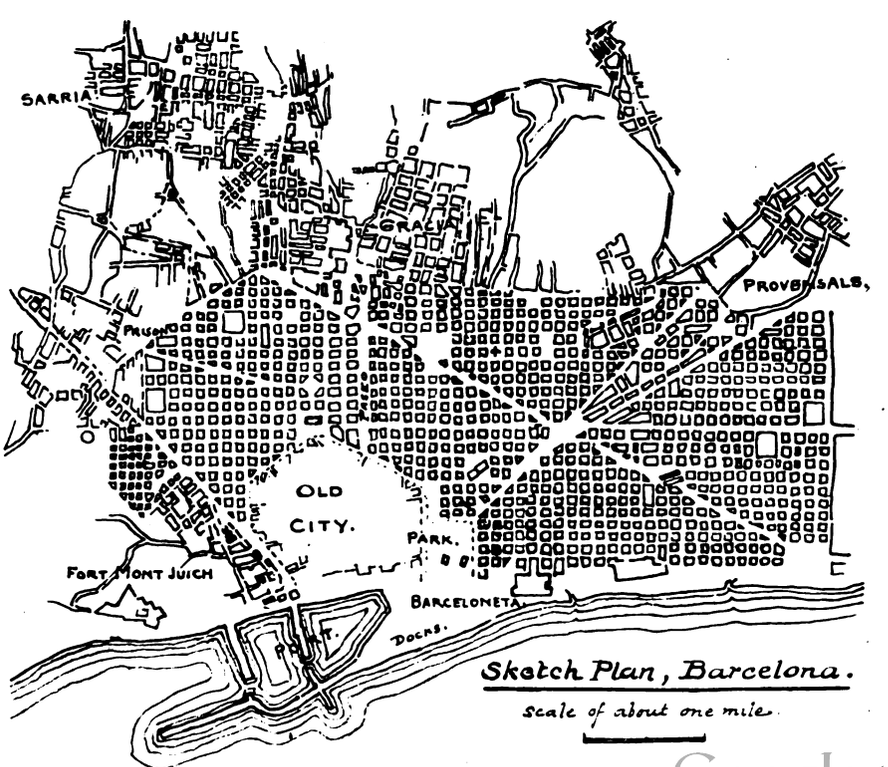
The planning of a town on the square block system has one or two serious drawbacks at the present day which would not have been within the experience of such enthusiasts in the matter as Ruis y Taulet. All modern towns are intersected by tramway-lines on which the majority of the citizens are continually travelling, and only those persons who have lived in such square-built towns can tell of the tiresome and even injurious effect on the eyes of continually passing endless successions of streets, with the long perspectives presented in rapid and regular rotation to the sight. Another inconvenience connected with the trams and railways is the necessity of laying them with many right angles. In the case of Barcelona several of the tramways and railways preceded the laying-out of the new districts, and in some cases their lines cut across the chessboard plan.

Æsthetic arguments against such a mode of laying out a city must, however, always be of the greatest importance. Turin, with its 300 or 400 years of age and its massive brick buildings of a pompous and magnificent style, and, above all, from its being built all in one taste, has a certain grandeur of effect. It must also be remembered that many parts of Turin are laid out with a view to impressive and special scenic effect. In Barcelona, on the other hand, and in most modern cities of the type, a mere utilitarian object is kept in view, and as a consequence the effect is poor and sordid to an extreme degree. As everywhere else, the better-class quarters of the new town are characterised by buildings in all sorts of styles, and with various attempts to impart originality and variety within each 1,000 metres. The poorer classes are, of course, content with less pretentious exteriors to their homes, and their quarters are of the usual uninteresting type, and of the same squalid monotonous character which, alas! seems to be inseparable from the dwellings of the poor in all our great modern centres of population. In the poorer districts of all Spanish and Italian cities which have sprung up within recent years, a perceptible deterioration in some of the outer appearances of the houses is perhaps due to attempts at greater pretension and less fulfilment than in the old-fashioned slums of the last century. Unlike London or other northern capitals, the working-class districts have a ruinous, half-finished look which compensates in some degree of picturesqueness, perhaps, for the extreme ugliness of design usually adopted.

In reference to the quadrilateral, chessboard planning of the modern city, it may be supposed, without improbability, that Ruis y Taulet and his supporters were influenced by considerations of a strategical kind in anticipation of some such disorders as have recently taken place. For long past Barcelona has been known as one of the most turbulent cities of Europe, and the hotbed of socialistic revolutionary movements. This unenviable reputation may have aroused the civic authorities to a sense of the importance in city planning of arrangements for controlling unruly mobs. Experience seems, however, to have shown that it was as easy for the rioters to erect barricades in this most modern of cities as in the tortuous streets of old Paris; and it is a little curious to find that some of the most serious street fighting took place amongst the rectangular streets of Clot and San Martino de Provensals. This very serious and sanguinary revolutionary riot from which Spain has lately been suffering was possibly subdued, but not without difficulty, in a shorter time, owing to the still somewhat unusual planning of the scene of operations. The straight and rectangular plan would naturally afford an easier passage for troops, and especially for the use of artillery, than the more ancient type of city. Baron Haussmann is generally credited with the idea of rendering Paris less liable to the consequences of revolutions and social disturbances by driving long boulevards through the slum quarters, and paving them with asphalt. It was supposed that an asphalt road would scarcely lend itself to barricade erection, but in our modern times it would seem that a revolutionary mob finds materials for barricades in overturned electric tramcars and motor-buses, and even finds these modern materials easier to handle than the old piling-up of paving-stones.

Perhaps the most remarkable architectural feature in modern Barcelona is a church which is being built in the north-west quarter of the new city, occupying the greater part of one of the 1,000-metre enclosures. It is dedicated to the Sagrada Familia (*Iglesia erpiatoria*), and is being erected from the designs of an architect named Gaudi. The only portion completed of this very remarkable-looking edifice is the crypt, which contains seven large chapels, to which the public is admitted by two important staircases. Above ground the church has an appearance which is rather difficult to describe. It appears to be planned as a great circular interior surrounded by a series of vaulted chapels of immense height; the walls between the chapels, radiating from the centre of the monument, will eventually serve to support the thrust of the immense dome. The method of construction is certainly mediæval, although the plan of the church can hardly be said to belong to the style. At one side of the building is a square nave with two flanking towers of great height somewhat suggestive of the plan of the Dom, Aix-la-Chapelle. The whole style of the building is intended to be an exact copy from the native Catalan. Each of the surrounding chapels is lighted by tall traceried windows of Geometrical design, and the pier walls between the chapels are surmounted by enormous pinnacles, each one a small tower with crocketed spire. This remarkable church is at present but half completed; it is being built in a curious way—each of the immense chapels surrounding the rotunda seems to be completed as funds come in, and it may be years before the central dome is executed. At present five of the chapels stand exposed to view both inside and outside, and, with the unfinished nave and towers, form a singular landmark in the midst of the new suburbs. The church when completed will perhaps have an appearance of competing in general character and dimensions with the cathedral of Gerona, but on a circular plan instead of a square.

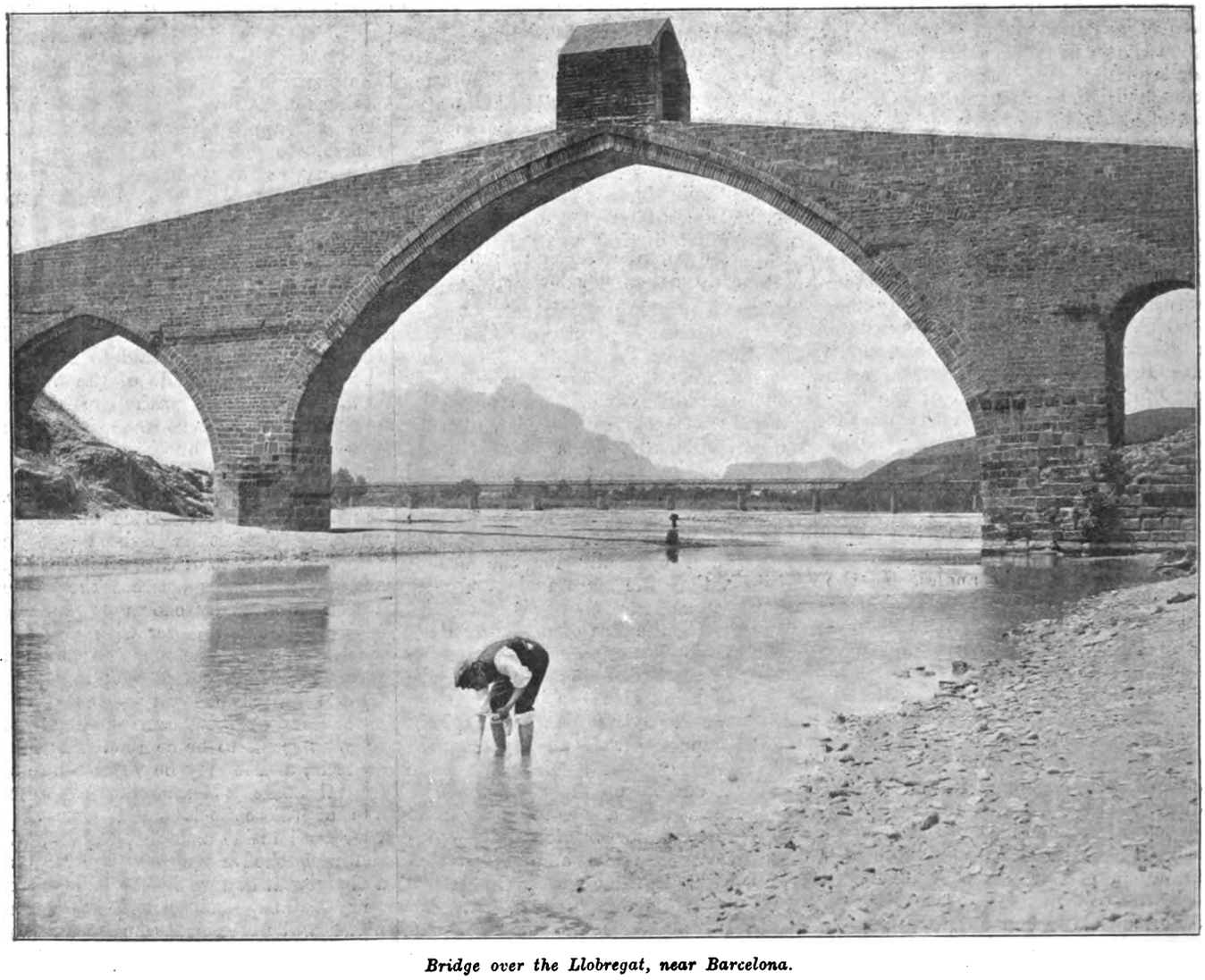
Nearly fifty churches and monasteries are said to have been destroyed in Barcelona during the recent rioting. Many of these institutions would be small buildings of no importance—more



Sketch Plan, Barcelona.

Scale of about one mile.

Digitized by Google



Bridge over the Llobregat, near Barcelona.

or less mere private houses. The larger examples of modern churches thus ruined were no great loss to art, for the typical modern Spanish church is usually as deplorable an example of "church-furnishers' Gothic" as can be found in any other modernised country.

The enormous destruction of church property by a frenzied mob animated by the most futile of motives will give scope for a large amount of rebuilding. The desecrated churches and convents will doubtless be replaced in course of time, and perhaps before very long the money which always flows into such channels with a sentiment of expiation will amply replace all that has been ruined. It will be interesting to see if any particular means against a repetition of such scenes as Barcelona has just passed through will be employed by the rebuilders of the ruined properties.

A kind of class hatred seems to have been the principal cause of the Barcelona revolution. The mob was composed of the lower working-classes, and the motive assigned for the destruction of some fifty religious institutions was a certain immunity from taxation, and other privileges which the clergy still enjoy in Spain. It may not be unjustifiable to conclude that the rigid regularity and "classification" which necessarily divides a community in one of these modern rectangular cities into its component parts apportioned to different districts may accentuate the divisions between the different grades of society. The anarchists attacked the religious class to begin with, because it was the most easily distinguishable; the revolution was fortunately suppressed before other classes of the community had begun to suffer very severely.

As already remarked, the two great mediæval monuments of Barcelona—the XIVth-century cathedral and the church of S. Maria del Mar—are perhaps untouched. The cathedral, which recalls the plan of our Exeter, with its transeptal towers, is at present being completed by the addition of a west front. This, which will certainly be a great improvement to the building, is being carried out in accordance with some mediæval designs for the purpose which still survive. The style is of the XVth-century Geometrical, which the modern Spaniards seem apt enough to imitate with a certain fidelity. The cost of the work is borne by a single munificent benefactor to the church.

As pointed out by Street in his "Architecture of Spain," there is a curious approximation in the plans of Barcelona and Exeter cathedrals, and the episcopal thrones in the two churches have also some slight resemblance. Barcelona Cathedral seems to be the only one in Spain retaining its mediæval choir with a western entrance from the nave.

THE TRADE UNION CONGRESS.

THE forty-second Congress of Trade Unions, the first to be held at Ipswich, has not been marked by any features of special importance. Year by year these Congresses lose little by little any characteristic of discussions relating to trade, and assume the nature of political meetings. This year there were fewer delegates than assembled last year at Nottingham—495, as compared with 518—but the membership of the Unions they represented remains much the same, viz., 1,701,000, as compared with 1,776,000.

Perhaps the most striking feature of the Congress may be said to be found in its negative characteristics. The Congress recognised that the country has been passing through a period of great trade depression, and that the coming winter may witness a repetition of the serious want of employment experienced last year, yet we find no discussion raised as to the best means of stimulating productive employment and increasing the resources upon which labour must depend, no reference to co-operative principles or to anything likely to promote industrial activity, but rather a grudging attitude towards the eleemosynary schemes that have been promoted to meet a time of distress. Perhaps this is hardly to be wondered at when Parliament and the nation are taking the same attitude, but all the

Digitized by Google

same it is not a wholesome symptom. Thus the Parliamentary Committee have urged the Prime Minister to "take immediate steps to promote large and comprehensive schemes of work of public utility so as to provide large numbers of people with employment, and thereby minimise the distress as far as possible," and the Prime Minister has replied that a palliative must still be sought in the provision of work by the Central Unemployed Body and the Distress Committees. Relief Works and Distress Committees are a sorry last resort for the highly-skilled labour represented by the Unions, even if, as was suggested in the Report of the Local Government Board on Unemployment, they do not tend to increase rather than diminish the numbers out of regular employment (see the *Builder*, August 28 last), and Mr. Keir Hardie's reception of the Development Bill, as meeting the demand of the Labour Party for the recognition of the principle of "the right to work," is not without significance.

Again, the attitude of the Congress towards the new Labour Exchanges is not satisfactory. These Exchanges are to be founded to assist the circulation of employment amongst all classes and to give mobility to labour, but the Trade Unions would appear to use them solely for their own ends. Thus a resolution was carried unanimously, "That no system of Labour Exchanges will be satisfactory unless Boards of Administration are composed equally of representatives of recognised Trade Unions and Employers, with a neutral Chairman appointed by the Board of Trade; and, further, that provision be made to prevent these Exchanges being used to undermine the Trade Union rates and conditions of working by the supplying of labour at less than the Union rate. That under no circumstances shall these Exchanges be used as agencies for the supply of labour to assist any firm who may have a dispute with their workpeople." As, according to Mr. Keir Hardie, in Great Britain and Ireland there are some 14,000,000 wage-earners eligible to become members of Trade Unions, of which only about 3,000,000 are actually members of Trade Unions, it is obvious that Labour Exchanges should not be delivered over to the Unions or used by the minority as a means of controlling the majority. The Parliamentary Committee did not advocate the Labour Exchanges being closed during trade disputes, but the debate disclosed the fact that the Committee entertain the hope that the Exchanges may be of service to the Unions in controlling what they term "blackleg labour."

The scheme of State insurance is at present so nebulous that little can be said about it, but from the observations of one speaker at the Congress, at least there are indications that, as in the case of Old Age Pensions, an effort will be made on the part of some of the "workers," or perhaps we should rather say some of the "talkers," to prevent any contributions on the part of labour. One satisfactory note was struck showing some spirit of independence when a resolution to ask the Government for grants in aid to Unions giving out of work benefits was defeated.

It might have been thought that the persons who held themselves out as representing the interest of labour would have shown some disquietude at the vast increase in the number of Government officials which is necessitated by the new policy of State interference, the salaries of whom are entirely unproductive and divert capital from productive channels, but it is a melancholy fact that the distinction between productive and unproductive expenditure is being lost sight of by all classes, and that whilst capital is discredited thrift in every form is being discouraged.

The resolution in favour of an eight-hour day, as might have been anticipated from past experience, was carried, but a resolution affirming the principles of arbitration and conciliation, both voluntary and compulsory, and to present a Bill with this object to Parliament, was lost.

Unemployment may be due, to a certain extent, to bad trade and general depression, but it is seriously contributed to by the general want of confidence engendered by attacks on capital, extravagant and non-productive schemes, artificial restraints of trade, and a lack of patriotism and self-dependence which discourages thrift.

NOTES.

Thorwaldsen's Lion. It should be a matter for world-wide regret, and that on more counts than one, that Thorwaldsen's celebrated lion carved in the rock at Lucerne is reported to be in a nearly hopeless process of effacement by the action of the weather. In the first place, it is the memorial of a noble sacrifice to duty; in the second place, it is undoubtedly the finest thing which Thorwaldsen—a sculptor somewhat over-estimated in his own day—ever produced. In the inspiration derived from celebrating an act of heroism he for once forgot his second-hand classicism, and produced a work which is modern, simple, grand, and original. The moral of the matter seems to be—if you wish to carve a perpetual memorial out of living rock, do not select sandstone. Can nothing be done? Why not try an application of Szerelmey's stone liquid to the surface of the sculpture?

The American Report on Reinforced Concrete. At the annual meeting of the American Society of Civil Engineers the Report of the Special Committe on Concrete and Reinforced Concrete was brought up for consideration. Several members then read discussions which will be published in the *Proceedings* for September, and other members briefly stated their views. So far nothing has been said which tends directly towards the improvement of the proposed regulations, although the criticism evoked will probably be useful as a guide to the Committee. On the motion of Professor L. J. Johnson it was decided that the Report should be taken as one of progress and that the work of the Committee should be continued. Consequently the Report and (as we read the *Proceedings* of the annual meeting) the minority Report also will be printed and circulated among the members of the Society. The Special Committee will doubtless receive a good many useful suggestions, and we hope that the final Report may prove to be a document fully deserving the confidence of engineers and architects, and at the same time reflecting credit upon the important Societies and Associations jointly concerned in its production.

The Strength of Columns. In the *Transactions* of the Institution of Civil Engineers of Ireland Dr. Lilly describes the experiments conducted by him at Trinity College, Dublin, with the object of determining the constants to be used in formulæ for the design of solid cylindrical round-ended columns. One point worthy of note is that, although the Rankine-Gordon formula is an empirical one, and the method of deriving it more or less irrational, Dr. Lilly finds that the equation for solid columns is justified in its use, and errs on the side of safety. For hollow columns the Rankine-Gordon formula in less suitable, and, as shown by the previous investigations of the author, a new term is required to express the phenomena of secondary flexure. Another paper in the same volume of *Transactions* is one read by Dr. Cowan, M.Inst.C.E., and entitled "Notes on Modern Road-Making." These notes have been collated from various sources and embody the ideas of the author for the general improvement of roads in Ireland. The most urgent necessity in that country is money for the purpose of enabling county and other highway authorities to apply methods such as those enumerated and advocated by the author.

Walnut Lane Bridge, Philadelphia. In the *Proceedings* of the American Society of Civil Engineers, Mr. George S. Webster and Mr. Henry H. Quimby give a long and fully-illustrated description of the reinforced concrete bridge over the Wissahickon Creek, Philadelphia. The type of structure selected is that of the Luxemburg masonry bridge, which is virtually two bridges side by side and connected by a platform. The Walnut Lane Bridge comprises a central arch of 233 ft. and five end arches each of 53 ft. span. The main arch with the rise of 70 ft. 3 in. carries the roadway at the height of about 147 ft. above water-level, and consists of arch ribs with spandrel columns surmounted by small arches for support of the roadway. The end arches have spandrel walls of the usual type. It was found that the lowest initial cost would have been secured by a steel viaduct with timber decking, but the character of the surroundings rendered a structure of that kind quite inappropriate. Moreover, the possibility of future neglect of maintenance emphasised the necessity of adopting the most permanent form of construction. Owing largely to the satisfactory experience gained in Philadelphia of concrete bridges it was decided to adopt reinforced concrete as the structural material for the new bridge, which is

Digitized by Google

remarkable as including the longest arch of its kind hitherto built, as well as for the admirable design and proportions embodied.

Fineness and Strength of Cement.

OTHER things being equal, the strength of Portland cement is proportionate to its fineness, but it is very necessary for the user to make close inquiry into the parity of the other things involved. Underburned clinker is readily ground into cement of exceeding fineness unaccompanied by the strength and other properties desired. The Reports of Mr. George S. Webster, City Engineer of Philadelphia, show that since the year 1904 the fineness of all brands of cement tested by him before use on public works was represented by the average residue of only 18 per cent. on a 100-mesh sieve and less than 25 per cent. on a 200-mesh sieve as required by the standard specification of the American Society for Testing Materials. Nevertheless, the tensile tests of the same cements exhibit results of extremely variable character bearing out the statement that the finest-ground cement is not necessarily the strongest. While not underestimating the value of fine grinding we may point out that the most important factors to be considered by the architect are tensile strength in the 1 : 3 sand test, permanency, and constancy of volume. Fineness is an additional merit, but, as shown by Mr. Webster's reports, it must not be accepted by itself as a criterion of strength.

Electric Water-Heater.

A DEVICE for heating water electrically for domestic purposes which has been perfected by Messrs. Spagnoletti, of London, is at present exciting great interest amongst electricians. The apparently almost insuperable drawback to the use of electricity for heating is the cost. A whole unit of electricity converted into heat will at the most only give two gallons of boiling water, and at the present prices ruling in London this is practically prohibitive. Messrs. Spagnoletti have shown how by the help of their device supply stations will be enabled to quarter their present prices. The consumers are supplied with a current of electricity which is always flowing and heating a "Therol" water-heater. In its simplest form the apparatus consists of a block of iron, which stores most of the heat generated, cast round a coil of pipe. At the top of the block the heating coils, which are insulated with mica, are inserted. Layers of magnesia form a suitable heat-lagging for the block, which is being continually heated by the electric currents flowing in the coils. By moving a tap suitably either cold, tepid, or hot water can be obtained. There are no noxious gases, and no flue or chimney is required. When current is required for lighting or cooking the required amount is diverted from the heating apparatus. We think that the great advantages of the system are that the consumer knows exactly what he has to pay, and the engineer could run his station with maximum economy. No meters would be required. Further, improvements in lamps would not necessitate the Supply Company raising the price, and domestic labour would be lightened. Some problems have still to be settled. For example, the ordinary householder does not use the same amount of hot water in summer and winter. Assuming, however, that the device will stand rough usage, a distinct advance has been made in the applications of electricity.

A Note at Bruges.

A CORRESPONDENT writes:—"With a thoroughness that does credit to the artistic tastes and the justifiable pride of the Brugeois in their ancient architectural gems, a fresh step has recently been taken in that city, this time on the Bourg—nothing less than the demolition of the painted plaster front of the Palais de Justice, to make way for a façade in the local style of architecture, based, as far as possible, on the charming model of the Palais des Comtes de Flandre that overlooks the canal at the rear. It is certainly time the disfigurements of that side of the Bourg were removed; and when that eyesore's successor is completed, may we hope that the Yzergietery alongside the beautiful staircase to the Chapelle du Saint Sang will also have its hideous front treated in the same way as is now being done to the Palais de Justice. Probably the celebrated Zandvoorde bricks are being used in the new front of the Palais de Justice."

Houses of Historical Interest.

MEMORIAL tablets have recently been affixed upon "The Cedars," Portway, West Ham, E., the home of Mrs. Elizabeth Fry; No. 1, Moreton-gardens, South Kensington, the home of Madame Goldschmidt ("Jenny Lind"); No. 70, Knightsbridge, overlooking Hyde Park, where Charles Reade lived; St. Philip's Vicarage, Stepney, the home of the Reverend John Richard Green; and No. 28, Herne-hill, where John Ruskin lived in his early life. Hawthorne's "House of the Seven Gables" at Salem, Massachusetts, has been bought for the purposes of a settlement; it was built in 1662, and was altered about forty years ago, when it was shorn of some of the gables. It is proposed to open a fund for the purchase of the house at Blantyre, Lanarkshire, which was the birthplace of David Livingstone, and to preserve as a memorial museum.

THE STRENGTH OF RIVETED JOINTS.

IN every steel structure the strength of riveted joints is a consideration of primary importance, and one which will appeal more than ever to architects when steel-framed buildings are completely recognised by the amendment of the London Building Acts, as proposed by the County Council. While the effective resistance of a riveted member is furnished by the friction of the plates and the shearing strength of the rivets, the usual plan is to consider the latter as the governing factor. The resistance of rivet steel in shear is taken at about four-fifths of its resistance in tension, and a factor of safety is applied so that the working stress shall not exceed, say, one-fifth of the ultimate strength of the metal. But it is worth remembering that the elastic limit of steel in shear is far lower than the elastic limit in tension, and that in consequence the metal would commence to deform under shearing stress of intensity not very much greater than the working stress customarily assumed to be safe.

The saving clause, in practical work, is that the resistance actually operating is that due to friction of the plates rather than the shearing strength of the metal. If the latter were relied upon alone the effect would probably be gradual shearing of the rivets and rapid deterioration of the joints. The fact is that metallic structures have generally to withstand shocks in addition to the purely statical loads upon which calculations are based. Hence, to provide for permanent endurance it is necessary that the stresses due to shocks should be elastically absorbed in order to obviate permanent local deformation.

Considering a joint where friction of the plates is adequate for the resistance to the forces developed, the assembled plates form a solid mass capable of absorbing shock in an effective manner, the maximum strain per unit of volume being relatively small, and therefore causing no permanent deformation.

On the other hand, in a joint where resistance is afforded by rivets, acting simply as pins, there is great risk that the elastic resistance of the rivets would be insufficient for the absorption of shock, and that the edges of the holes in the plates would cut into the shank of the rivets. The only way of obviating such effects would be to employ rivets of very ample collective area—a costly and inconvenient remedy.

From the foregoing it is evident that the friction between the plates of a riveted joint is an important factor, and one whose value together with the values of the factors causing variation are well deserving of study.

A series of very careful tests has recently been completed by M. C. Fremont on the strength of riveted joints, his investigation having been directed mainly to the effects of friction between the plates, or, as we may briefly say, the adherence of the riveted parts. The results of the tests in question are fully stated in the *Bulletin* of the *Société d'Encouragement pour l'Industrie nationale*, from which the subjoined notes have been collated.

In all investigations of the kind it is difficult to arrange things so as to obtain results showing adherence, without the risk of serious errors. The method of M. Fremont was devised with a special view to the avoidance of similar causes of error, and is briefly described below.

In order to enable him to determine the adherence produced by a rivet, M. Fremont conceived the idea of causing the sliding of the connected plates by rotation about the axis of the rivet, thus eliminating the resistance of the rivet to shear. As shown in Fig. 1, the plate *a* was placed between

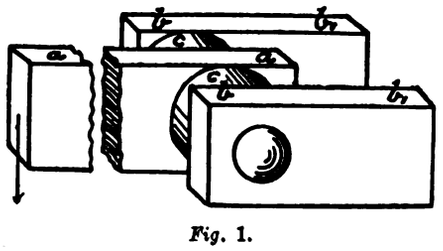


Fig. 1.

two other plates *b*, but separated from them by two collars, *c*, the five pieces being connected by one rivet, inserted under hydraulic pressure.

During the conduct of tests the arrangement was held horizontally while weights were successively added to a tray suspended from the end of the plate *a*.

The adherence caused by the pressure of the rivet was calculated by a simple mathematical process which we need not here repeat.

The tests of riveting were conducted with rivets taken from a collection of seventeen samples of metal, one specimen being of

Digitized by Google

wrought-iron and sixteen of mild steel with the ultimate tensile strength of from 22½ to 42½ tons per square inch. In every case the tensile strength and elastic limit of the metal were carefully determined, and from the samples of metal rivets were made, these being heated before use throughout their entire length to about 930° C., and put in place under the hydraulic pressure of 50 tons.

Several tests were made with rivets of the same metal by maintaining the pressure sometimes for two or three seconds, and sometimes for as long as sixty seconds. By means of a stop the movement of the lever *a* could be arrested where desired so as to permit several successive slidings of the metal to be effected. The results of the tests are given in Table I., where the frictional resistance to slipping is given in tons per square inch of the cross-section of the rivet:—

gation of M. Fremont is that in the case of rivets in double shear, as when connecting three plates, the frictional resistance of the joint is less than that of two plates connected by rivets in single shear. The following results stated by M. Fremont make clear the superior adherence of two plates, the weight in kilogrammes being that applied at the end of the bar *a* (Fig. 1).

	Two Plates. Kg.	Three Plates. Kg.
Iron rivet connecting rough plates ...	125 ...	80
Iron rivet connecting polished plates ..	100 ...	67
Steel rivet connecting rough plates ...	140 ...	125

These results may be explained by the circumstance that when two plates are riveted together there is less space between them than between three plates; consequently the contraction of the rivet causes more pressure on the metal and therefore greater frictional resistance. Moreover, the rivet heads are very securely moulded upon

TABLE I.—FRICTIONAL RESISTANCE OF RIVETED PLATES IN TONS PER SQUARE INCH OF RIVET SECTION.

No. of Metal.	Kind of Metal.	Tensile Strength of Metal.	Elastic Limit of Metal.	Duration of Riveting Pressure.	Frictional Resistance during Successive Slippings of the Plates.			
					1st.	2nd.	3rd.	4th.
		Tons per Sq. In.	Tons per Sq. In.	Seconds.				
1	Iron ...	25·8	14·9	3	4·44	3·93	3·93	3·78
				60	4·44	3·93	3·93	3·78
2	Steel ...	27·5	13·3	3	4·60	4·60	4·60	4·60
				60	4·10	4·28	4·44	4·44
3	do. ...	27·0	15·2	3	4·64	4·28	4·64	4·44
				60	4·79	4·44	4·64	4·44
4	do. ...	29·5	17·0	3	6·85	5·15	5·30	5·45
				60	6·16	5·45	5·30	5·08
5	do. ...	31·1	17·4	3	7·87	6·03	6·50	5·45
				60	6·67	7·20	6·67	7·17
6	do. ...	27·5	16·7	3	4·80	4·80	4·80	4·80
				60	7·52	6·50	6·50	5·81
7	do. ...	25·3	22·0	3	2·13	2·13	2·06	2·06
				60	5·15	4·50	4·95	2·06
8	do. ...	25·9	16·0	3	4·95	4·44	4·44	2·06
				60	7·87	5·45	5·81	5·45
9	do. ...	25·4	16·6	3	6·16	5·15	5·15	5·15
				60	6·67	5·81	6·15	6·47
10	do. ...	36·2	22·7	3	0·51	0·51	0·51	0·51
				60	4·13	3·43	3·58	0·51
11	do. ...	22·1	14·2	3	5·14	4·44	4·44	4·44
				60	4·95	4·64	4·80	4·44
12	do. ...	22·9	11·6	3	4·60	3·93	4·09	4·44
				60	5·30	4·95	4·13	4·13
13	do. ...	29·9	15·9	3	6·00	4·80	5·15	4·80
				60	6·85	6·00	5·81	4·80
14	do. ...	32·4	14·7	3	6·50	5·65	5·81	5·65
				60	8·22	6·85	6·85	6·85
15	do. ...	22·7	11·0	3	4·44	4·28	3·81	6·85
				60	4·80	3·93	4·28	4·28
16	do. ...	30·1	13·6	3	8·57	5·15	5·65	5·34
				60	8·25	6·50	7·21	6·48
17	do. ...	42·6	27·6	3	0·00	0·00	0·00	0·00
				60	6·50	5·84	6·00	5·85

It is worthy of remark that the manner in which slipping of the plate took place during the tests was manifested in two different ways. Sometimes the first movement was sudden under a given load, and in the succeeding tests of the same joint the movements were caused by a smaller load. At other times the movement of the loaded plate was gradual and occasionally ceased while still under the originating load, the addition of more weight being necessary to cause further movement. These variations were evidently due to differences in the condition of the surfaces in contact.

The greater resistance almost invariably characterising the first movement in each series of tests is probably attributable to the fact that the initial pressure of the riveting-machine, being two or three times as much as that represented by the contraction of the rivet, had bonded the irregularities of the surfaces so as to give supplementary resistance which was destroyed by the first movement.

For average qualities of mild steel, the frictional resistance of the joints tested by M. Fremont may be taken approximately at about 5 tons per square inch, or roughly rather more than half the value commonly stated as the result of experiments in this country. The discrepancy is doubtless accounted for by the circumstance that the latter probably include some part of the resistance of the rivets in shear.

Another point made clear by the investi- and more or less impressed into the outer surface of the plates.

Table I. shows very clearly the considerable variations of frictional resistance exhibited by riveted joints. The investigation of M. Fremont has afforded new data for determining the influence of the chief factors causing variation, chief among them being:—

1. Temperature of the rivet.
2. Elastic limit of the rivet iron or steel.
3. Condition of the plate surfaces in contact.
4. Planeness and number of the plates riveted.
5. Duration of riveting pressure.
6. Intensity of riveting pressure.
7. Length of the rivet.

(1) *Temperature of the Rivet.*—Experiments made with iron rivets of metal from the same bar showed the temperature of 900° C. insured frictional resistance equal to that given by heating the rivets up to 1,300° C. The reasons accounting for this effect may be thus briefly stated. The contraction of the rivet on cooling is greater when the temperature is higher, but as the elongation of the shank is relatively greater in proportion to the volume of metal, the hole is less effectively filled, while the ductility of the metal may be appreciably reduced.

Effective pressure upon the plates is best secured by moderate heat, the temperature recommended by M. Fremont being 900° C.

(2) *Elastic Limit of the Rivet Iron or Steel.*—The elastic limit of the metal after riveting is a most important factor, for upon it depends the effective frictional resistance of a joint. The only exceptions to this rule are those due to the employment of high-tension steel such as Nos. 7, 10, and 17 in Table I.

Omitting these from consideration, we have in Table II. a comparison of the elastic limits for iron and various qualities of mild steel, with the frictional resistance of joints, the elastic limit being in each case that ascertained after riveting:—

TABLE II.—ELASTIC LIMITS OF RIVET METAL AND FRICTIONAL RESISTANCE OF JOINTS IN TONS PER SQUARE INCH.

No. of Metal.	Kind of Metal.	Duration of Riveting Pressure.	Elastic Limit of Metal.	Frictional Resistance.
		Seconds.	Tons per Sq. In.	Tons per Sq. In.
1	Iron ...	3	18·1	3·93
		60	—	—
2	Steel ...	3	17·0	4·60
		60	—	—
3	do. ...	3	18·4	4·44
		60	—	—
4	do. ...	3	21·7	5·30
		60	—	—
5	do. ...	3	25·7	6·03
		60	25·0	6·98
6	do. ...	3	21·2	4·80
		60	27·3	6·50
8	do. ...	3	19·5	4·44
		60	19·7	5·45
9	do. ...	3	20·5	5·15
		60	18·1	6·03
11	do. ...	3	18·1	4·44
		60	18·8	4·76
12	do. ...	3	15·2	4·00
		60	16·4	4·54
13	do. ...	3	20·1	5·08
		60	23·7	5·84
14	do. ...	3	20·7	5·72
		60	28·2	6·86
15	do. ...	3	16·5	4·13
		60	15·9	4·28
16	do. ...	3	19·2	5·60
		60	21·0	6·73

The foregoing table indicates that the ratios of frictional resistance to the actual elastic of the metal are 1 : 4 for 3 seconds of riveting pressure and 1 : 3·7 for 60 seconds of riveting pressure.

(3) *Condition of the Plate Surfaces in Contact.*—As the adherence of the plates depends upon friction it necessarily increases with the roughness of the surfaces. Table III. gives a selection of results bearing upon this point:—

TABLE III.—FRICTIONAL RESISTANCE OF ROUGH AND POLISHED RIVETED PLATES (three iron plates 15 millimetres thick, rivets in No. 2 steel).

Duration of Riveting Pressure.	Frictional Resistance.	
	Rough.	Polished.
Seconds.	Tons per Sq. In.	Tons per Sq. In.
3	3·90	2·41
60	5·46	3·18
120	6·35	4·06

(4) *Planeness and Number of the Plates Riveted.*—In order to secure the best results it is necessary that the plates should make contact at all points, otherwise, although brought together by elastic deformation under the pressure of the riveting-machine, they will draw apart, elongating the hot shank of the rivet and so reducing subsequent frictional resistance to practically nothing. The importance of securing perfect contact is in direct proportion to the number of plates riveted together.

(5) *Duration of Riveting Pressure.*—The figures in Table II. indicate that the duration of 60 seconds gives frictional resistance of about 10 per cent. greater than that obtained by maintaining the pressure for 3 seconds only. The advantage is more marked when the length of the rivets is relatively small and a considerable reduction takes place in the collective thickness of the plates subjected to pressure.

(6) *Intensity of Riveting Pressure.*—Where the diameter of the rivets is not above 1 in. and the steel is of the quality usually employed in structural work, the

Digitized by Google

riveting pressure of 40 to 50 tons is ample. Any increase would add little or nothing to the frictional resistance, besides involving risk of injury to the metal riveted.

(7) *Length of the Rivet.*—In most cases the pressure upon the plates is the more effective as the length of rivet is increased for a constant thickness of metal connected, or as the thickness of metal connected is reduced for a constant length of rivet. This conclusion points to the result that large diameter rivets connecting thick plates are not well calculated to promote frictional resistance because the plates are not drawn together so effectively as could be desired.

As pointed out at the commencement of this article, the frictional resistance of a riveted joint should be adequate for all working stresses. Nevertheless, the resistance of rivets to shear is at once an interesting and desirable subject for study. One series of experiments by M. Fremont was made with rivets of steel No. 12, having the tensile strength of 22·9 tons per square inch, its resistance to *single shear* between two parallel steel plates being 12·5 tons per square inch. In testing the same metal in the form of a pin inserted in a hole through three plates, its resistance to *double shear* was found to be 15·86 tons per square inch. The same quality of steel employed as a rivet in *double shear* without heating was found to give the shearing resistance of 22·2 tons per square inch. Finally, a rivet of the same metal in *double shear* and applied after heating gave the shearing resistance of 25·5 tons per square inch.

The apparent anomaly presented by the greater value of resistance to shear as compared with resistance to tension is accounted for by the fact that the tensile strength and elastic limit of iron and steel are increased by mechanical and thermal treatment. This point is made clear by the results summarised in Table IV., where the increases are fairly normal with the exception of the high-carbon steel denoted by Nos. 7, 10, and 17:—

TABLE IV.—TENSILE STRENGTH AND ELASTIC LIMIT OF IRON AND STEEL BEFORE AND AFTER USE IN THE FORM OF RIVETS.

No. of Metal.	Kind of Metal.	Duration of Riveting Pressure.	Tensile Strength.		Elastic Limit.	
			Original.	After Riveting.	Original.	After Riveting.
			Tons per Sq. In.	Tons per Sq. In.	Tons per Sq. In.	Tons per Sq. In.
1	Iron	3	25·8	26·7	14·9	18·1
2	Steel	3	23·5	27·5	18·3	17·0
3	do.	3	27·0	26·7	15·2	18·4
4	do.	3	29·5	32·4	17·0	21·7
5	do.	3	35·1	40·4	17·4	25·7
		120	35·1	40·1	17·4	25·0
6	do.	3	27·5	34·1	16·7	21·3
		60	27·5	36·7	16·7	27·3
7	do.	3	35·6	50·8	22·0	38·2
		60	35·6	62·8	22·0	46·2
8	do.	3	25·9	31·7	16·0	19·5
		60	25·9	31·8	16·0	19·7
9	do.	3	25·4	29·5	16·6	20·5
		60	25·4	28·1	16·6	18·1
10	do.	3	36·2	59·9	22·7	38·1
		60	36·2	90·7	22·7	73·0
11	do.	3	22·1	28·4	14·2	18·1
		60	22·1	27·5	14·2	18·8
12	do.	3	22·9	26·4	11·6	15·2
		60	22·9	28·1	11·6	16·4
13	do.	3	29·9	35·1	15·9	20·1
		60	29·9	36·7	15·9	23·7
14	do.	3	32·4	39·3	14·7	20·6
		60	32·4	44·3	14·7	28·2
15	do.	3	22·7	25·9	11·0	16·5
		60	22·7	27·0	11·0	15·9
16	do.	3	30·1	33·2	13·6	19·2
		60	30·1	36·4	13·6	21·0
17	do.	3	42·6	61·0	27·6	51·7
		60	42·6	78·8	27·6	64·9

If the rivet steel is softer than the plates the result is shearing of the rivet, as shown in Fig. 2. If the rivet steel is harder than the plates the result is deformation of the hole accompanied by comparatively little deformation of the rivet, as represented in Fig. 3. If the rivet and the plates are of equal hardness the general effect is that illustrated by Fig. 4.

The three diagrams are from photographs taken by M. Fremont, who recommends the employment of fairly hard steel for rivets, and the adoption of small diameters with the object of reducing deformation in the holes through the plates. In this connexion we may mention that the steel employed for rivets in the Forth Bridge had the tensile strength of about 27 tons per square inch, corresponding approximately with that of

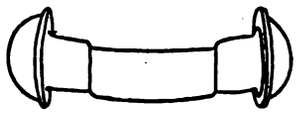


Fig. 2.

steels Nos. 3 and 6 in Table I. The use of softer metal reduces the efficiency of the joint, while exceptionally hard metal gives no advantage in the way of frictional resistance, and tends to damage the plates if shearing action comes into play.

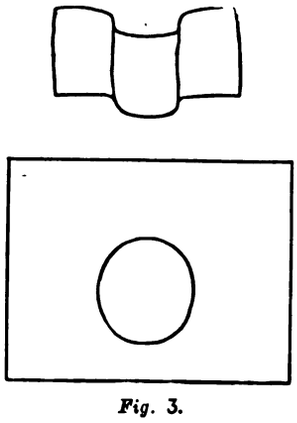


Fig. 3.

The investigation of M. Fremont into the form of rivet heads points to the conclusion that rupture usually takes place along the frustum of a cone such as *f d d, f* (Fig. 5), having the section of the rivet for base and the generatrix inclined at the angle of from 70 to 75° with the base. The finished head of the rivet should envelop this cone to such thickness that the resistance to shear along the surface of the cone shall be not less than that of the rivet shank. Hence the rational profile of a rivet head should be the "basket-handle" curve. But the preparation of dies so shaped would not be easy, and as an increase of height is advantageous for practical reasons, the hemispherical or snap head is to be preferred. With the radius of two-thirds the diameter of the shank, the profile becomes that represented in Fig. 5 by the curve *g c g*, but M. Fremont recommends the modification denoted by the tangents *n h, n, h*, with the object of distributing the pressure of the die over a wider area.

The other profiles in Fig. 5 are those of ordinary segmental rivet heads. The curve

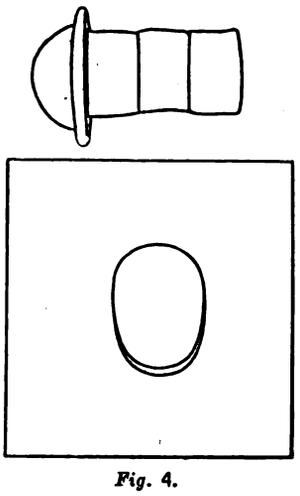


Fig. 4.

k c k has the height of two-thirds the shank diameter, the width of five-thirds the shank diameter, and the radius of 0·86 the shank diameter, and represents a profile in common use. The two other curves *k b k* and *k a k* represent the heads of rivets tested by M. Fremont.

The rivet *k b k*, with the height of the head equal to 0·56 times the shank diameter, failed in the shank and exhibited permanent deformation at a comparatively early stage.

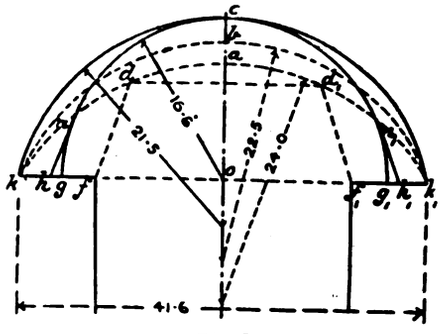


Fig. 5.

The rivet *k a k*, with the height of the head only 0·48 times the shank diameter, was ruptured along the frustum of the cone *f d d, f*, thus showing the necessity for an ample thickness of metal.

Taken as a whole, the investigation of M. Fremont is one of much value, and the data furnished hereby are specially interesting to architects at the present time in view of the extended use of riveted joints that will be encouraged by the amendment of the London Building Acts.

POLICE-STATION, SUTTON-IN-ASHFIELD. — The contract for the erection of a new police-station for Sutton-in-Ashfield has been let by the Notts County Council to Messrs. F. Perks & Son, of Mansfield. The site for the new building is in Brook-street. The structure will have a frontage of 96 ft., and its length will be 108 ft. It will comprise an inspector's residence and an inspector's office, charge-room, and guard-room. Provision will be made for four cells, with an airing-court adjacent. At the rear there will be a drill-yard. The front elevation will be built of stone and the remainder of brick. The cost is estimated at upwards of 3,000*l*. The architect is Mr. L. Maggs, F.S.I., Shire Hall, Nottingham, and clerk of works Mr. Bolton.

Digitized by Google

BLACKFRIARS BRIDGE WIDENING.

On Tuesday the Lord Mayor formally dedicated to public use the new construction which has been added along the upstream face of Blackfriars Bridge by the Corporation of the City of London.

The original structure by Cubitt comprised five wrought-iron arches, 75 ft. wide, carried on masonry abutments and river piers. When the County Council proposed, a few years ago, to extend their tramway lines across the river to meet the Victoria Embankment tracks, the City Corporation made no objection beyond stipulating that the bridge should first be widened, a work which they undertook to perform free of cost out of the funds at disposal in the Bridge House Estates.

The project was submitted to Sir Benjamin Baker, who prepared the scheme which has recently been carried to completion under the superintendence of Mr. Basil Mott. Briefly stated, the engineering works involved were:—The extension of the abutments and river piers for the distance of 30 ft. towards the west, the transfer of four original exterior arch ribs, and the cast-iron parapets to the face of the new masonry, the addition of steel arch ribs between the original work and the new position of the old arch ribs, the addition of one steel arch rib at the exterior of the northern shore span, the construction of new decking roadway, and a footwalk over the additional width, the laying of up and down tramway lines, and various incidental works.

The first operation of widening the river piers was commenced in 1907 by Messrs. W. Arrol & Co., the general contractors, who sank four steel caissons, by whose aid the foundations were formed, the caissons being filled up with concrete, and upon the solid basis so provided the masonry piers were built up to the required height. During the operation of sinking the caissons a serious accident took place, upon which we have previously commented, but all four caissons were finally set in position.

When the new masonry was ready, four of the old arch ribs were lifted bodily by a large gantry mounted on wheels running upon rails laid transversely to the main axis of the bridge, and were finally deposited on their new bearings. As the weight of the ribs ranged up to 150 tons each, it will be understood that the work of removal was by no means child's play, its achievement without a single hitch being a matter upon which the technical advisers and staff of the contractors are to be congratulated.

The exterior rib of the northern shore span was constructed of steel in order to provide more adequately for the strains involved by the curved sweep of the tramway towards the Embankment. This steel rib was assembled on a timber staging built up from the river-bed and placed on its seating after the abutment had been widened and brought to the required form. The latter was an operation necessitating the utmost care in order to avoid the risk of injury to the adjacent tunnel of the District Railway. The addition of the new intermediate arch ribs and decking was a comparatively simple undertaking, as also were the construction of the road and foot ways and the laying of the tramway lines, the last-mentioned having been entrusted to Messrs. Dick Kerr & Co., as sub-contractors. We may here mention the fact that the lines across Blackfriars Bridge are the property of the City Corporation, by whom running powers have been granted to the County Council.

By the opening of the new works another north and south tramway connexion is made, two still more important results being the final abolition of the highly inconvenient terminus in the middle of Blackfriars Bridge-road, and the conversion of all the southern lines passing over Westminster and Blackfriars bridges into loops, along which traffic will proceed continuously. The change will place a double service of vehicles at the disposal of many passengers, and will distribute the morning and evening crowds over a fairly long line instead of encouraging concentration at two points as heretofore.

A further valuable detail connected with the Blackfriars Bridge extension is the construction of the new subway at the junction of Queen Victoria-street, the Embankment, and New Bridge-street, these works having been placed in the hands of Messrs. Perry & Co.

The bridge improvement and subways involve an expenditure of more than a quarter of a million, to which the ratepayers are not asked to contribute a single penny. Therefore they have even more reason than the remaining millions inhabiting Greater London for gratitude to the City of London, and for congratulating themselves on the continued existence of funds enabling the Corporation to play the part of a fairy godmother in so satisfactory a manner.

THE WORK OF THE ROYAL COMMISSION ON SEWAGE DISPOSAL.

By H. Lemmoin-Cannon, P.A.S.I., etc.

A further voluminous publication, resulting from the eleven years' labours of the members of the Royal Commission on Sewage Disposal, appointed on May 7, 1898, and their staff, is just to hand. When it is considered that this latest Blue Book consists of over 500 closely-printed foolscap pages, containing hundreds of tables of great length and much explanatory matter in connexion, besides other copious details, it will be at once apparent that to attempt to deal in any way adequately with such a subject within the limits of an article is manifestly impossible; to do so would require several months' close study, and the results set forth in a fair-sized volume. We will endeavour, however, to touch upon points of general interest.

The Blue Book before us—being Appendix III., containing memoranda giving the results of observations on various processes of sewage treatment—deals with the observations made on behalf of the Commissioners by their chemists, bacteriologists, and engineers at some twenty-seven sewage-treatment installations during a period of some four years. The methods observed comprised practically all the main processes employed in purifying crude sewage by biological filters practised at the time when the observations were projected, following preliminary treatment by chemical precipitation or septic tank. The treatment of water-carried sewage only was studied, as, the various conservancy methods being considered quite out of date in the light of the more recent methods employed, no advantage could accrue from any attention being paid to them. Sewage farming and treatment by land only was dealt with very fully in the Fifth Report of the Commission, issued in August, 1908; and the conclusions come to by the Commissioners were most emphatic on its value under suitable conditions. In effect they found it quite practicable to purify the sewage of towns by treatment on land by the employment of the micro-organisms present in the soil; and that, provided the soil is suitable and the area of land sufficient, the organic matters present in the sewage can be thoroughly oxidised thereby.

The classes of water-borne sewage dealt with in the observations under consideration were almost solely of a domestic character, save for, in most cases, comparatively small quantities of trade refuse, brewery wastes, and waste liquids from tanneries.

Before entering more fully into a consideration of some of the principal features of the subject, we give the following details, which we have been at some trouble to bring together, feeling they will most likely be the means of creating a greater interest in those readers who may happen to be connected with either of the various districts concerned.

Of the twenty-seven installations dealt with, none are connected with any great centres of population. The largest, that at York, deals with the sewage of some 80,000 persons. Among the larger ones may be mentioned those at Kingston-on-Thames, Rochdale, Exeter, Maidstone, Chorley, Hendon, and Guildford, dealing with the sewage produced by 53,454, 52,000, 38,000, 34,000, 27,000, 23,500, and 16,000 persons respectively. Coming to the smaller works observed, those at Normanton (12,600), Oswestry (9,800), Hampton (6,500), may be mentioned; whilst much less quantities were dealt with at the following places:—Prestolee (Bury Rural District) (500), Caterham Barracks (1,300), Little Drayton (1,550), Hartley Witney (1,600), Withnell (1,650), Clifton (Barton-upon-Irwell) and Hulton (2,000 each), Horfield and Knowle (Bristol) (2,500 and 1,600), Slaithwaite (3,000), and Andover (9,000).

Preliminary Methods of Treatment.

In most cases, on the sewage reaching the treatment installation it is passed into *detritus tanks*, or *grit-chambers*, wherein are screens of coarse or fine mesh, the former being preferable, as they choke less readily. The crude sewage runs through these screens, which succeed in arresting a considerable proportion of the grit road detritus and various suspended matters (paper, pieces of stick, cloths, corks, etc.). The idea is to ensure better oxidation and treatment generally in the precipitation tanks and on the contact-beds or filters, and to prevent choking. These tanks are cleared as often as necessary, some having automatic apparatus for the purpose. They are constructed of brick and concrete of varying size, perhaps 20 ft. by 4 ft. and 4 ft. deep may be considered an average size.

Precipitation.

Where grit-chambers are not employed, the sewage runs directly into the precipitation tanks, where they are used; the actual treatment of the crude sewage commences therein.

Precipitation Tanks.

The tanks at the installations observed are usually rectangular in shape, but in a few instances are circular. Constructed of bricks and cement, they have concrete bottoms. All vary much both in size and depth. Those at York, for instance, are 160 ft. by 40 ft., by 6 ft. 6 in. in depth, with a capacity of 250,000 gallons each; those at Chorley, 90 ft. by 48 ft., by 5 ft. 3 in. in average depth, each with a capacity of 140,000 gallons; at Maidstone, 157 ft. by 28 ft. 6 in., with an average depth of 4 ft. 5 in., and a capacity of 100,000 gallons. Whilst as an illustration of the size of precipitation tanks at a small installation, that at Withnell may be mentioned, where the two tanks are each 44 ft. by 11 ft. 9 in., by about 5 ft. in depth, with a capacity of 16,156 gallons.

The *circular* tanks at Horfield (Bristol) are only 12 ft. in diameter, but very deep (18 ft.), with a capacity of 9,067 gallons each. These are constructed upon the Dortmund plan, being cylindrical to a depth of about 10 ft., and conical from there to the bottom. The sewage is delivered through a pipe into the centre of the precipitation tanks at a depth of 10 ft. (*i.e.*, at the top of the cone), and is then spread by a "bonnet."

The Dortmund tank possesses in some respects distinct advantages over the ordinary rectangular tank, especially as regards the facilities for sludging (*i.e.*, cleaning out the settled solids), and the absence of smell during that process. A deep circular tank of this class is easier and cheaper to cover than a (relatively) shallow rectangular one, occupying, as it does, less surface area; on the other hand, however, it is usually more expensive in cost of construction.

Settlement.

The settlement or breaking up of the solids present in the sewage is aimed at in the preliminary process; and to assist this

Digitized by Google

it is usual to either add certain chemicals, or the micro-organisms present in the sewage are allowed free play under suitable conditions.

Chemical Precipitation.

In the antiseptic system certain chemicals are added to the crude sewage on its reception at the precipitation or sedimentation tanks, to aid in the settlement of the solids as sludge to the bottom of the tanks, for removal at stated intervals, depending somewhat on the nature of the sewage, and to arrest decomposition.

Some form of chemical precipitation was employed during the official observations at the majority of the installations in question, viz., at York, Kingston-upon-Thames, Maidstone, Normanton, Rochdale, Guildford, Hendon, Calverley, Chorley, Horfield, and Withnell.

As regards the chemical precipitants employed, alumino-ferric (a trade name) is used alone at no fewer than seven of the works observed, among them Guildford, Calverley, Horfield, Normanton, and Hendon, in quantities of 5, 6·7, 8, 15·7, and 17·5 grains to each gallon of dry-weather flow of sewage. At York the alumino-ferric is first used at the rate of 4 grains per gallon, and lime is subsequently added in the form of milk of lime at the rate of 3 grains per gallon.

Alumino-ferric also forms the basis of the precipitant used at Kingston-upon-Thames, in Sillar's "A.B.C." process, in conjunction with blood, charcoal, and clay, some 50 grains per gallon in all—"undoubtedly a very efficient form of chemical precipitation," as the Commissioners say.

Sulphate of alumina has been used alone at Chorley only, in quantities equivalent to about 9 grains per gallon; but a precipitant of a similar kind is now made at the works by treating bauxite with fairly strong crude sulphuric acid, and allowing the mixture to cool in moulds. It is then put in the sewage channel and so mixed with the incoming sewage.

Lime is only used by itself at one of the twenty-seven installations, viz., Maidstone, where it is ground with water and added as milk of lime in the proportion of about 5 grains per gallon. The chemicals are usually added to the sewage by being stirred into it by the aid of special stirring apparatus, or by adding it to the sewage as it flows into the tanks by dripping water upon it when placed in a box which has a false bottom.

Until the issue of the Fifth Report of the Royal Commission on Sewage Disposal there was a tendency in some quarters to discredit the value of chemical precipitation. But in it the Commissioners say their experience in no way justifies this view." Whilst not able to lay down any precise rules as to the particular cases in which it should be adopted, they go on to remark:—"In the case of some sewages, which contain trade wastes, it is almost essential to subject the sewage to some form of chemical treatment before attempting to oxidise the organic matter contained in it, and, in the case of domestic sewage, chemical precipitation materially aids the deposition of the suspended solids and facilitates subsequent filtration."

Septic-Tank Treatment.

The "digestion," or liquefaction of the crude sewage, by the employment of bacteria in septic tanks, was carried out at eight of the works under observation. Some of the tanks at these installations are covered with concrete arches over which a layer of soil is spread; others are open. Two main classes of micro-organisms are employed in the tanks: in the open ones, aerobic bacteria; anaerobes, those which thrive in the absence of air, in the closed ones. Experience, however, has demonstrated that, as regards digestion of the organic solids and the quality of the tank liquid, or effluent, one class of tank possesses no advantage over the other. The closed tank is preferable where it is desired to avoid nuisance from smell.

Septic tanks are constructed of similar material—brick and cement concrete or cement concrete only—to those used for chemical precipitation, and are also usually rectangular in shape. At Accrington, where there are six septic tanks, each of their dimensions are 101 ft. by 67 ft. 6 in., and 9 ft. in depth, with a capacity of 38,000 gallons. At Andover the two tanks are each 80 ft. by 16 ft. 8 in., and 8 ft. 6 in. in depth, with a capacity of 60,400 gallons. At Caterham Barracks the single tank is, roughly, 22 ft. by 12 ft., and 9 ft. 6 in. in depth, and having a capacity of, approximately, 14,000 gallons. At another small installation—Hartley Witney—the two tanks are 70 ft. by 10 ft., and 7 ft. deep, with a capacity of 33,000 gallons.

Where more than one septic tank is employed, it is most usual to use them in parallel. At Accrington, for instance, where six tanks were at work during the observations, they were used in two series of three each. "Originally," says the appendix, "they were worked as one series of six, but it was found that a better tank liquor—more particularly as regards suspended matter—was obtained by using the tanks in two series of three, the reason for this being that the rate of flow through any one tank was thus reduced by one-half."

In some septic-tank installations there is no process of alternately filling and emptying as in the chemical precipitation tank, the sewage being permitted to flow through continuously; but, owing to the slowness of the motion of the sewage in the tank, the contents may be said to be, to a large extent, at rest to allow for the settlement of the solids and for the activity of the various liquefying bacteria. As an illustration of this, assuming the flow through the tanks to be a continuous one, a dry-weather flow of 150,000 gallons per twenty-four hours would give a flow through at the mean water level of once in 19·3 hours at the rate of ·83 in. per minute. At the maximum flow of 220,000 gallons in the same period, the flow through would be once in 13·1 hours at the rate of 1·22 in. per minute.

On the other hand, it seems, however, that sewage should not remain less than twelve nor more than twenty-four hours in a septic tank.

Coming to the practical value of septic-tank treatment as a means of solving the sludge difficulty, in destroying any pathogenic (disease-producing) organisms, and rendering the sewage more easily oxidisable than that chemically precipitated, it has been clearly demonstrated, as the result of these observations, that all the organic solids are by no means deposited; that on leaving the septic tank the sewage is, bacteriologically, almost as impure as on entry, and that it is not more easily oxidised than any other liquid.

Sludging the Tanks.

Sludge forms at the bottom of the tanks in the preliminary process, whether carried out by chemical precipitation or by septic methods, and has to be removed therefrom at varying periods, from a week or month to much longer intervals. Various means are employed in sludging. At the small installation at Withnell, for instance, it is done by opening the sludge-valve in the sedimentation tank and sweeping the liquid sludge towards it. The sludge is then delivered to one of the sludge lagoons, situate at the side of the tanks. These are constructed of house and furnace ashes and drained by agricultural pipes leading to an earthenware open-joint drain. Here the sludge is delivered to drain naturally, and the liquid draining from it passes through the above-mentioned agricultural pipes into an adjacent brook.

This process, as will be seen, is by no means a desirable one, and is most unsatisfactory if carried out in the vicinity of houses, because the sludge takes some months to dry before it can be removed, either to be dug into adjacent land or disposed of to agriculturists for manure.

A far more satisfactory method is that employed at York, where about 140 tons of wet sludge are produced per day. Lime is added to it (4 grains per gallon), and the sludge is then pressed into cakes by the use of sludge presses. These filter-presses are usually worked by a steam-pump or air-compressor, according to the size of press required to deal with the sludge. The press is fitted with vertical cast-iron plates which serve to support cloths of canvas, felt, or hemp, which act as the filtering media. The sludge is forced between these plates, which are tightened up and held together by powerful rods and nuts, or by hydraulic pressure. The filter cloths, as will be seen, allow the liquid squeezed out to pass away into a receptacle underneath, but hold the solids, after which the plates are loosened and the sewage cakes thus formed, and from which a good deal of the moisture has been squeezed, drop into a truck or other receptacle placed underneath, and are ready for carting away. The liquid pressed out is pumped back into the precipitation or septic tank for re-treatment.

The disposal of the sludge cakes, whether resulting from chemical precipitation or septic-tank treatment, is, however, a matter of much difficulty. Local agriculturists are not so keen as formerly in using these cakes for manurial purposes.

Treatment of Tank Effluent.

The effluent from the settling sedimentation or septic tanks has next to be dealt with, and "contact" beds, or the later-introduced percolating filters, are very commonly used for this purpose, which completes the process of sewage purification, unless the effluent therefrom has to reach a very high standard of purity, when it is sometimes run over land.

Contact Beds.

This method is employed, among other places, at Andover, Halton, and Guildford. These "beds" are sometimes made by excavation, and the banks formed of the material excavated. The bottom is laid with 4-in. drain-pipes in herring-bone formation, falling to one or more outlet valves in the lowest corner of the bed. The sizes of these beds vary very much. Those at Halton, four in number, are each, roughly, 28 ft. by 16 ft., by 4 ft. 3 in. in depth, having a total area of 199 sq. yds., and a total cubic content of 282 cub. yds. At Guildford the tanks or beds are constructed of brick and cement built upon made ground and raised above the level of the surrounding land. There the contact beds are five in number, each having an area of about 400 sq. yds., and a cubic content of about 330 cub. yds., with a 2 ft. 6 in. depth of filtering material.

The kinds of filtering media employed vary very much—coke, clinker, flints, stone, saggars (vitrified stoneware), burnt ballast. The material is used in layers of varying sizes, under 1 in., 1 to 2, and up to 3 in. in diameter. Coke and clinker are probably the most suitable filtering media; the smaller the size of the material, so long as it is not too small, the more intimate is the contact of the liquid with it and the greater the purification effected. The Commissioners say:—"Our knowledge of the action of a contact bed" (on the effluent) "is very incomplete, and little is known as to the manner in which the organic substances of sewage are broken down." Most classes of sewage, even if only a moderately high standard of purity is required, need to be passed on to two or even three successive contact beds.

At Withnell "polarite" beds are used for "contact" purposes. Two of thos employed are each 18 ft. by 14 ft., and thre

Digitized by Google

others, each 12 ft. 3 in. by 6 ft. 8 in., having a depth of material of 3 ft. 6 in., composed, from the top of the bed downwards, of 9 in. of sand, 15 in. of mixed "polarite" and sand, and 15 in. of graded gravel, varying from the size of a marble to pieces of 4 in. to 6 in. in diameter. This method, one of the earliest of the kind, gave great satisfaction during the observations, giving better results as regards the quality of the effluent than the other contact beds at Withnell.

At Hartley Witney soft furnace clinker was used. This, however, disintegrated considerably and caused a loss of capacity in the beds.

Unless the site of the works consists of a dense clay it is desirable for the beds to be constructed of building materials; and it is imperative that the outlet chambers be so constructed.

Contact beds are generally filled and emptied by automatic gear, though experience shows this method is not so satisfactory, because it is likely to get out of order, and, as the condition of the beds is an important factor, human control is certainly preferable. They usually receive two fillings per twenty-four hours; this allows for the effluent being about eight hours in contact and for eight hours' "rest" to the beds for purposes of aeration. In some cases, however, two hours' contact and four hours' "rest" have given good results. The effluent remains therein subject to the action of the oxidising organisms—bacteria, worms, larvæ, insects, etc., though what is the respective amount of work performed by each is at present a matter of conjecture.

Percolating Filters.

This is the most recently introduced method for treating all kinds of sedimentation-tank liquid—quiescent, chemical, or septic. As the name implies, the effluent is delivered on to the surface of the bed. This is done either by tipping-troughs, into which the liquid accumulates, or from fixed or revolving distributors or sprinklers, which should distribute it uniformly over the whole area. It is allowed to percolate through the interstices and then to pass away through a similar channel to a contact bed. The filtering material employed is the same as in contact beds. These filters are either rectangular or circular in shape; the latter where revolving distributors are employed.

At Caterham Barracks, for instance, where four filters are used, the size of each is 11 ft. by 9 ft. 6 in., with 5 ft. depth of material. Here the liquid from the tanks is distributed over the filters by the tipping of four troughs, each of which discharges about fifteen gallons of effluent into perforated pipes which extend over the surface of the bed and permit the liquid to trickle through the holes on to it.

As examples of circular filters, those at Accrington, of which there are fourteen, are mostly 62 ft. in diameter and 7 to 9 ft. deep. The material employed is chiefly coke, ranging from 2 to 4 in. in diameter, and is built up on a false bottom, consisting of large semicircular pipes, which rest on a concrete floor. The effluent from a sprinkler-fed filter is, as a rule, better and more highly nitrated than that from a filter bed, which is fed by a stationary distributor.

Percolating filters are constructed very similarly to contact beds, save that they are usually deeper, but better results are obtainable, generally speaking, where the depth of material does not exceed 7 ft.

Comparing properly constructed and worked contact beds and trickling filters, it would seem that the organic matters in the sewage can be oxidised by either type. The filters will, however, usually treat nearly twice the quantity of tank effluent; they are better adapted to variations of flow, and the effluents are better aerated. As regards the cost of the two methods, treatment in filters may be said to cost about two-thirds that of double contact.

Details of Observations.

The details given in connexion with each of the twenty-seven installations are very full indeed, and most interesting and useful to sewage engineers, as well as to chemists and bacteriologists. A brief description of the situation of the works is followed by the method of treatment; population draining to works during observations; water supply in gallons per head, its nature, and whence obtained; number of w.c.'s; sewage system; average daily dry-weather flow: gallons of sewage per head per twenty-four hours, and its character; amount of storm water; capacity of tanks; area and age of contact beds or filters and nature of filtering media; gallons of tank effluent treated; where first effluent is discharged, etc.

Analyses formed a very important part of the work; and these were taken at frequent intervals, hourly in many instances. These aimed at ascertaining the total nitrogen, albuminoid, and total ammonical nitrogen, the "oxygen absorbed," dissolved oxygen, incubator tests, solids in suspension, etc.

In connexion with this work it is interesting to note that a good deal of the bacteriological analyses and the chemical work were carried out by Miss Hartley, Miss Chick, D.Sc., and Miss Power; and that the determination of absorption of dissolved oxygen was made in some cases by the copper chloride method of Miss Homfray and Sir William Ramsay.

Results of Observations.

The results of the eleven years' labours of the members of the Royal Commission on Sewage Disposal have in some respects been somewhat disappointing. They may be summed up by saying that local conditions should primarily decide the selection of a method for the treatment of the local sewage; and following that, either land treatment or artificial filtration, if carried out in accordance with the best-known methods, modified by experience gained in treating the particular sewage, will produce satisfactory results. Many mysteries which surround the subject still invite solution, and this fact is clearly demonstrated by the memoranda contained in Appendix III., which has formed the subject-matter of this article.

NOTES FROM FRANCE.

MEASURES are being taken to facilitate locomotion at the most crowded parts of the streets in Paris. Among the works projected, with this object, by the Municipal administration, is the formation of subterranean passages for foot-passengers at the following points:—The entry to the Avenue du Bois de Boulogne, Avenue Marigny (opposite the Grand Palais), Place de l'Opéra, Boulevard des Italiens, Boulevard Montmartre, Boulevard St. Denis, Place de la République, Boulevard Magenta, Rue Lafayette, Boulevard Hausmann, Chaussée d'Antin, Place du Havre, and Rue de Rivoli.

At Perigueux a fine mosaic of the Vth century has been discovered, in a good state of preservation. It covers a surface of about 70 square mètres, and presents a curious entanglement of geometric designs in five colours, surrounded by a decorative border of a design differing from anything previously found in mosaics of this period.

The excavations which are being carried on, under the direction of M. Tournaire, for the enlargement of the Palais de Justice at Paris, have led to some interesting discoveries of foundation walls of the XIIth and XIIIth centuries, on which have been found the seals or symbols of the mediæval "corporations du Bâtiment."

There is now being completed, at the Sèvres manufactory, a monument to the joint memory of Danton and Gambetta, to be erected at Sèvres. Both the sculptures, which are by M. Alfred Boucher, and the architectural portion of the monument, will be carried out in Sèvres stone-ware ("grès ceramique"), the colour combination of which has been worked out by two chemists of the Sèvres manufactory. The monument will include the statues of the two Tribunes, and bas-reliefs representing respectively the soldiers of the First Republic and those of 1870.

The Fine Arts Department of the Government has presented the Municipality of Paris with four fine statues—"Winter," by M. Dubois; "Summer," by M. Sicard; "Day," by M. Paul Gasq; and "Night," by M. Hector Lemaire. These works are intended to decorate the lawns at the margin of the central *rond-point* in the Champs-Elysées.

Legal Column.

HOUSING AND BY-LAWS.

LAST week we referred to the undesirable results attending the adoption by the local authorities of building by-laws unsuitable to the character of the districts, and it is therefore satisfactory to see that this question was raised in the debate on the Town Planning Bill on Friday last. Lord Robert Cecil moved a new clause to the effect that if the Local Government Board were satisfied that the erection of working-class dwellings was unreasonably impeded by building by-laws, the Board should have power to call upon the local authority to amend the by-laws, and, failing compliance, the Board should substitute other by-laws. Mr. Burns expressed sympathy with the purpose of the clause, and he also spoke of the service rendered by the Press in drawing attention to this question, which had contributed to making the local authorities more reasonable in the preparation of by-laws, and he undertook to see whether some special procedure could not be adopted enabling the Board to deal with specially recalcitrant bodies.

Mr. Burns said that he had done his best to make the local authorities recognise that past conditions required reviewing, and we think he was justified in taking some credit to himself for the reasonable attitude he has assumed in this matter. His fear that an ill-devised relaxation of the building by-laws for special purposes might result in the building by-laws being evaded without justification by other persons is certainly a ground for exercising caution. The House of Commons accepted his assurance, and it will be interesting to see the form it will take when the Bill reaches the House of Lords.

Mr. Burns expressed the hope that an amendment of the Public Health Acts and Building By-laws in respect to other points might be possible next year.

DISCOVERIES AT OLD SARUM.—One of the first results of the excavation of Old Sarum, which has been commenced recently, has been to open out the original entrance to the castle, which occupied the inner and higher of the two rings constituting the earthwork. The gateway appears to have been flanked by projecting bastions, which unfortunately have been stripped of their facing stones. On each side of the gate passage, which was 11 ft. 6 in. wide, was a guard chamber. That on the south side has been opened out. It had a fireplace on the side opposite the door, and retains parts of its barrelled vault. To preserve this, the vault has been built up with rough masonry. Both the side walls and the western or inner face of the gatehouse retain the lower courses of the ashlar facings. On the west side of the castle area a great length of the concrete revetment of the original chalk embankment has been laid open, one section being faced for a considerable height with the ashlar. Parallel with this another wall has been disclosed. This discovery is being followed up, and will doubtless lead to interesting results. It is known that one of the towers on the enclosing wall contained a postern and a bridge to the outer bailey, and one of the latest discoveries seems to be connected with this.

Digitized by Google

THE BUILDER

SEPTEMBER 18, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 15s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

MONDAY, SEPTEMBER 20.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. Charles Porter on "Sanitary Law"—I. 7 p.m.

WEDNESDAY, SEPTEMBER 22.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. Charles Porter on "Sanitary Law"—II. 7 p.m.

FRIDAY, SEPTEMBER 24.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. Charles Porter on "Sanitary Law"—III. 7 p.m.

SATURDAY, SEPTEMBER 25.

Junior Institution of Engineers.—Visit to Imperial International Exhibition, Shepherd's Bush. 3 p.m.

Incorporated Association of Municipal and County Engineers.—Eastern District Meeting to be held at Lincoln.

Fifty Years Ago.

FROM THE *Builder* OF SEPTEMBER 17, 1859.

CONDITION OF LONDON.

AT the entrances of the narrow courts, existing in too many places, you may detect that peculiar fever scent which positively speaks of sickness and death.

The cow-yards and stables make themselves known afar. In these places men are busily washing with floods of water; but pits of refuse remain which render this process of little avail. On such days, the miasma from undrained places is intolerable. Now is the time to test the ventilation of hospitals and schools, and when the greatest attention to cleanliness should be paid by all. Any neglect of this is, in such a condition of the atmosphere, clearly perceptible. On the evening of the day named, we had occasion to call at some of the houses in the back streets east of Judd-street, in the New-road, and at others in Chapel-place, Brompton. To a stranger, they were unbearable. It is dismal to see the crowds of pale-faced, dwarfed, and rickety children in such places. Women, miserable-looking, wander about the first-named neighbourhood, seemingly without object, and those who have good opportunities of judging say that drunkenness amongst the women in such districts is too common, to which often their circumstances have led. The excesses of the lower classes of our population are deeply to be deplored, preached against, and checked; but before judging too harshly, condemners should visit some of the homes, and remember that grapes are not gathered from thistles.

*** Happily much progress has been made, since this was written, in doing away with unhealthy areas such as that referred to; but much remains to be done. How long is it to be before the slum streets around the Seven Dials neighbourhood, for instance, are cleared out and rebuilt in a healthy manner?—ED.

Illustrations.

LAVENHAM CHURCH TOWER.

THE tower was commenced in 1486, but the work was interrupted about 1500 and not completed till 1525.

It was built by John de Vere, thirteenth Earl of Oxford, and Mr. Spring, a rich clothier of Lavenham, who built the well-known Lavenham Guild Hall. Mr. Spring was granted a coat-of-arms by Henry VIII., and these are freely used in the upper portion of the tower.

The lower stories nf the tower show much the best workmanship; below the ringers' loft the flints are coursed and of even size; above they are very irregular, and the scaffold holes have never been filled up.

The architect is unknown; he is said to have been killed on the work, and this possibly explains why the tower was never finished. It is 141 ft. high, equal in height to the length of the nave and chancel.

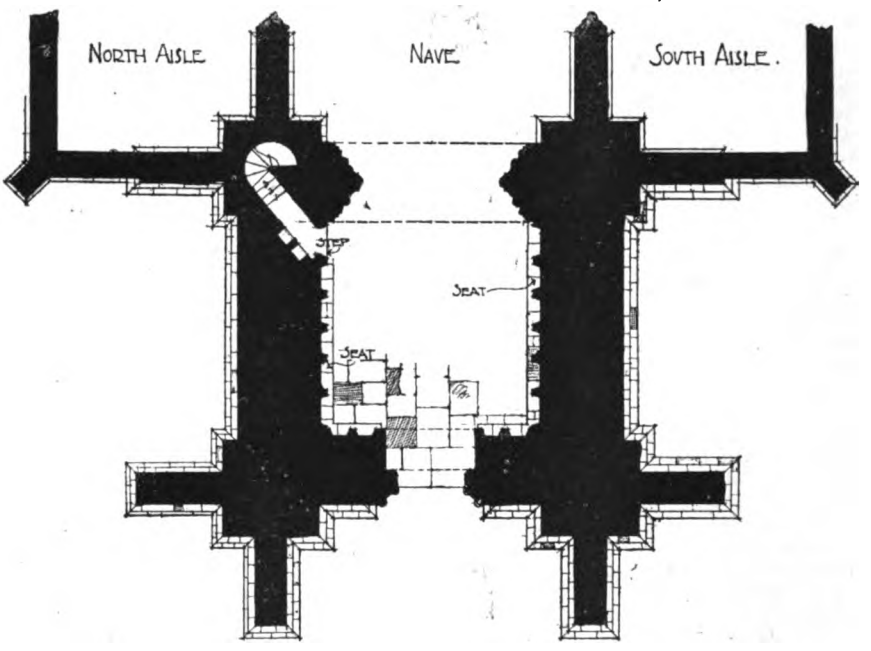
The tower contains a fine peal of eight bells.

ALAN G. BRACE.

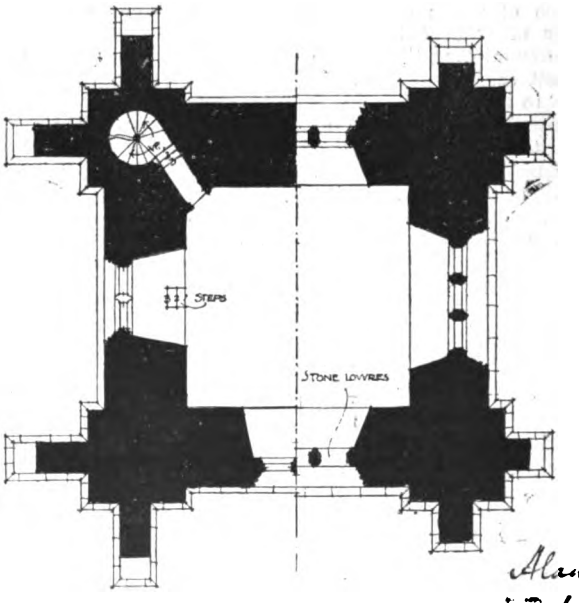
BERKSHIRE COUNTY COUNCIL OFFICES, READING.

WE give the elevations and plans of the first premiated design, by Messrs. Warwick & Hall, for the new Berkshire County Council Offices proposed to be erected at Reading.

Premiums of 100*l.*, 75*l.*, and 50*l.* were offered by the County Authority for the three best designs submitted. Mr. Mervyn Macartney acted as Assessor.



GROVND PLAN



Alan J. Brace. Hon. Sec. del.

RINGER'S LOFT & BELFRY PLANS.

SCALE OF FEET.

Plans of Lavenham Tower.

Digitized by Google

The authors of this design have given particular attention to the planning of the committee rooms so that members of the Council using these rooms can have direct communication from the hall of the Assize Courts without passing through any considerable portion of the new building.

The Education Committee room has been placed in the centre of the department on the first floor adjoining the main staircase and lift, and is arranged so that it can be easily divided into two rooms, each with their separate fireplace and doorway.

The main staircase (with passenger lift) is planned so that it will be equally convenient of access from the main entrance of the new building and from the Assize Courts; and is so placed that it serves each department centrally on the upper floors.

The ground floor provides accommodation for the Clerk of the Peace and his department, as required in the conditions; the Education Department being placed on the first floor. The second floor is devoted to the County Treasurer's department, Land Steward and Medical Officer, and the third floor is utilised for the Surveyor's department, and the back portion for a small caretaker's flat.

The lavatories are all placed on an internal area, so as to simplify the drainage system. They are also in a convenient position for use either from the new building or the hall of the Assize Courts.

The aim in designing the elevations has been to treat them in a broad, simple manner, relying upon the general proportions for effect rather than the use of elaboration of ornament. The elevations throughout will be in red brick (five courses to the foot) with Portland stone dressings, and the roof will be covered with pantiles.

PROPOSED CHURCH AT BATTS CORNER, FRENSHAM.

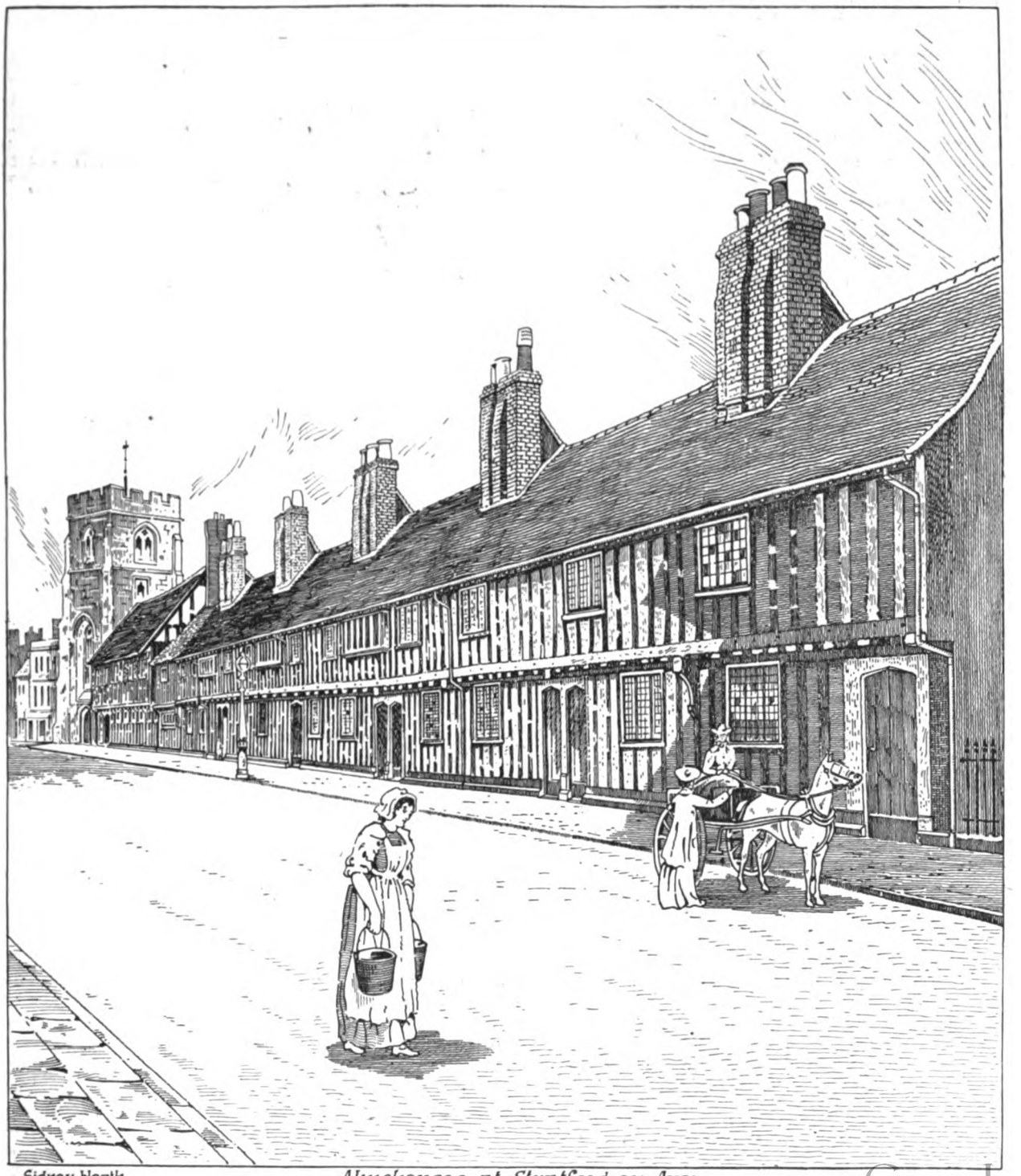
It is proposed that this church should be built of Bargate stone lined with brick. The roof-trusses, purlins, and wind braces will be of oak, the rafters ceiled with plaster. The roof will be boarded, felted, battened and cross-battened, and covered with hand-made, sand-faced pantiles.

The church is intended as a chapel of ease for Frensham Parish Church. The first instalment to be built is planned to seat 120 persons.

The design is by Mr. W. Curtis Green.

ALMSHOUSES AT STRATFORD-ON-AVON.

In addition to the beautiful church of Holy Trinity and the birthplace of Shakespeare, Stratford-on-Avon has, in the long range of buildings formed by the Guild Chapel, Grammar School, and Almshouses, one of the most interesting street views in the country. It is very rare, except on the Continent, to find three adjoining buildings of this kind not only standing intact, but still fulfilling the objects and purposes for which they were founded, and this without a break since their first institution. The Almshouses and Grammar School were founded by Edward VI., and the former provides for twelve poor men and women. Until a few years ago the fronts of these almshouses were nearly all covered with



Sidney Heath

Almshouses at Stratford-on-Avon

Digitized by Google

stucco; but this has now been removed and the whole of the massive oak timbers of the framing exposed to view.

In 1901 a curious custom attaching to the foundation was revived on the discovery of an old document known as "Sir Hugh Clopton's Settlement in his name and family," which had been deposited in the museum attached to Shakespeare's birthplace. Sir Arthur Hodgson, the owner of the Clopton estates, on becoming acquainted with the nature of the deed, resolved that the terms of the bequest should be carried out, thus reviving a quaint ceremony of old Stratford that had fallen into desuetude for more than a century. The bequest bears the date December 12, 1732, and stipulates for the preaching of a sermon in the ancient chapel of the Guild of the Holy Cross on May 29 in each year, "annually commemorating the happiness of the glorious restoration of our Constitution in Church and State," for which the sum of one guinea was to be paid the vicar of the parish, five shillings the clerk, and one shilling each given to the twenty-four almsfolk. The bequest further provides for the purchase of blue coats for the men, and blue gowns for the women every second year, "to be accounted from the feast of the Annunciation of the Blessed Virgin Mary which shall happen next after the decease of the said Hugh Clopton," and upon the coats and gowns the cross of the arms of the Clopton family was to be affixed. Any residue was to be spent in straw hats and aprons for the almswomen, or in such other manner "as the Mayor, Aldermen, and Burgesses shall think fit."

SIDNEY HEATH.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE Building Act Committee of the London County Council met on July 26 to deal with applications made under this Act. The proceedings were governed by the clause in the order of reference which empowers the Committee at certain seasons to act on behalf of the Council in relation to matters included in the Committee's order of reference.

Lines of Frontage and Projections.

Brixton.—Reconstruction of a urinal at the White Horse public-house, Brixton-road, abutting upon Loughborough-road (Mr. H. C. J. Edwards for the Lambeth Metropolitan Borough Council).—Consent.

Fulham.—Erection of a building to be used as a mission church on the eastern side of Musgrave-crescent, Walham-green, abutting also upon the southern side of Kempson-road (Mr. C. G. F. Rees for Baron Bruno von Schröder).—Consent.

Greenwich.—Erection of six houses on the eastern side of Beaconsfield-road, Westcombe-park, Greenwich (Messrs. Baldwin & Co.).—Consent.

Hackney, Central.—The erection of a building on the eastern side of Clifton-grove, Graham-road, Hackney, northward of No. 5 (Mr. C. G. F. Rees for the Committee of the German Hospital).—Consent.

Holborn.—Retention of wooden louvre external shutters to the windows on the front of Evelyn's-buildings, Dorrington-street, Holborn (Mr. E. C. Frere for the Vicar of St. Alban's, Holborn).—Consent.

Kensington, North.—Deviation from the plans approved for the erection of porches and bay windows to houses on both sides of Finstock-road, the eastern side of Wallingford-avenue, and the northern side of Oxford-gardens, Kensington, so far as relates to a modification in the design of the porches (Messrs. Trant, Brown, & Humphreys).—Consent.

Kensington, North.—Erection of bay windows and a porch to a house on the eastern side of The Triangle, Highlever-road, St. Quintin's-park (Mr. J. P. Williams).—Consent.

Kensington, South.—Erection of an addition at the rear of No. 19, Cottesmore-gardens, to abut upon Stanford-road (Mr. H. Row for Dr. S. Taylor).—Consent.

Lewisham. — Retention of trellis work enclosures to the porch at No. 125, Manor-park, Lewisham (Mr. W. J. Asburey).—Consent.

Marylebone, East.—Erection of two store buildings at the Zoological Gardens, on the southern side of the Outer Circle, Regent's-park (Messrs. Hudson & Hunt for the Zoological Society of London).—Consent.

Marylebone, East.—The retention of a projecting sign at No. 49, Wigmore-street, St. Marylebone (Messrs. W. Garstin & Sons).—Consent.

Marylebone, East.—The casing, in stone, of the front walls of the Portland Hotel, Great Portland-street, St. Marylebone, and the erection of a porch (Mr. G. Vernon).—Consent.

St. George, Hanover-square.—Erection of an external iron staircase next to Brook's-mews at Claridge's Hotel, Brook-street, St. George, Hanover-square (G. Trollope & Sons and Colls & Sons, Ltd.).—Consent.

Strand.—Deviation from the plans approved for the erection of an iron and glass shelter at Blanchard's Hotel, Beak-street, Regent-street, W., so far as relates to a modification in the details of the construction (Messrs. J. Wilkins & Co. for Messrs. Blanchard).—Consent.

Wandsworth.—Erection of a one-story shop in front of No. 182, Trinity-road, Wandsworth Common (Mr. H. Bignold for Messrs. J. Down & Son).—Consent.

Woolwich.—The erection of buildings on the southern side of Plumstead High-street, westward of No. 240 (Mr. J. Rush Dixon for the Woolwich Metropolitan Borough Council).—Consent.

Wandsworth.—That the Council do not consent to the erection of one-story shops in front of Nos. 648 and 650, Streatham High-road, Wandsworth (Messrs. H. M. & W. Grellier for Mr. G. Seth Mines).—Refused.

Width of Way.

Hackney, Central.—The erection of buildings, to be known as Nos. 3 to 14, on the east side of Fox's-lane, Homerton, with the buildings and forecourt fences at less than the prescribed distance from the centre of the roadway (Messrs. M. H. Judge & Sons for Mr. F. C. Clarke).—Consent.

Hampstead.—Retention of an addition at the Tower Royal Works, at less than the prescribed distance from the centre of the footway leading from West End-lane to Finchley-road, Hampstead (Mr. C. G. Stanham for Mr. P. Sloper).—Consent.

Width of Way and Line of Frontage.

Islington, West.—Erection of buildings on the eastern side of York-road, Islington, to abut also upon the southern side of Pleasant-grove (Mr. H. Goodchild for the Combined Estates Company, Ltd.).—Consent.

Width of Way, Frontage, and Construction.

Hoxton.—The erection of an iron and glass covered gangway to extend across Whitfield-street, Shoreditch, and connect Nos. 6 to 9, Whitfield-street with Nos. 52 to 54, Leonard-street (Mr. R. W. Hobden for Messrs. Blades, East, & Blades).—Consent.

Lines of Frontage and Construction.

Norwood.—The erection of an iron building of a temporary character on the western side of Tulse-hill, Norwood (Mr. A. J. Archer for the Brixton Skating Rink, Ltd.).—Consent.

Space at Rear.

Chelsea.—A deviation from the plan approved for the erection of a building on the northern side of King's-road, Chelsea, westward of Upper Manor-street, with an irregular open space at the rear, so far as relates to a modification in the position of the boundary of the site and of the proposed external water-closet at the ground floor level (Mr. R. Blomfield).—Consent.

St. George, Hanover-square.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building on the site of No. 19, Berkeley-street, Piccadilly (Messrs. Richardson & Gill for Messrs. Hammersley, Kennedy, & Co.).—Consent.

Westminster.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building at the north-eastern corner of Smith-square, Westminster, with an irregular open space at the rear (Messrs. Blow & Billery for Lady Agnew).—Consent.

Whitechapel.—That the Council do not allow a modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of an addition at the rear of No. 73, Whitechapel-road, Whitechapel (Mr. J. R. Moore-Smith).—Refused.

Deviation from Certified Plans.

Strand.—That the Council do not sanction certain deviations from the plans certified by the District Surveyor, so far as relates to the proposed rebuilding of No. 15, Rupert-street and Nos. 3 and 4, Rupert-court, Westminster (Mr. J. W. Stevens for Mr. C. Pinoli.—Refused.

Deviation from Certified Plans and Projections.

Chelsea.—Deviations from the plan certified by the District Surveyor, so far as relates to the proposed erection of a building on the north-eastern side of Draycott-avenue, Chelsea, to abut also upon the south-eastern side of Walton-street (Messrs. Joseph & Smithem for Mr. H. E. Beddington).—Consent.

Alteration of Buildings.

Holborn.—A modification of the provisions of sect. 41, so far as relates to the proposed erection of additions at the third floor level at the rear of Nos. 8 and 9, Hart-street, Holborn (Mr. C. Fitzroy Doll for Messrs. Olver & Co.).—Consent.

Alteration of Building and Space at Rear.

Kensington, South.—The retention of a conservatory on the roof of the rear portion of No. 9, Gloucester-road, Kensington (Messrs. Chesterton & Sons for Mr. S. W. Gatt).—Consent.

Conversion of Buildings.

Strand.—That the Council do consent to the use of the first, second, and third floors of No. 46, Dean-street, Soho, for dwelling-house purposes (Mr. W. A. Collins).—Consent

Cubical Extent.

City of London.—That no objection be raised in connexion with buildings at Broken Wharf, Upper Thames-street, to the proposal to make openings in the party walls between the buildings (Messrs. W. Dunn & R. Watson).—Consent.

Norwood. — Deviations from the plans approved for the conversion into a motor garage of stable premises approached out of the eastern side of Knight's Hill-road, Norwood, so far as relates to an office constructed in the garage, the bricking up of openings in the wall on the northern side of the machine shop, and the position of the fire appliances (London General Omnibus Company, Ltd.).—Consent.

St. George, Hanover-square.—That the Council, on the application of Mr. F. T. Verity, do consent to a deviation from the plans approved for the erection at the premises of Lewis & Allenby, Ltd., abutting upon Regent-street, Conduit-street, and New Burlington-place, St. George, Hanover-square, of a division next to Regent-street, to exceed in extent 250,000 cubic ft., so far as relates to the omission of the fire-resisting door from the half-landing between the basement and ground floor of the staircase.—Consent.

St. George, Hanover-square.—That the Council, on the application of Mr. F. T. Verity, do not consent to a deviation from the plans approved for the erection at the premises of Lewis & Allenby, Ltd., abutting upon Regent-street, Conduit-street, and New Burlington-place, St. George, Hanover-square, of a division next to Regent-street, to exceed in extent 250,000 cubic ft., so far as relates to the substitution of teak doors for the double iron doors in the openings in the division wall on the second, third, and fourth floors of the Conduit-street block of the premises.—Refused.

Bermondsey.—That the consent of the Council be not given to the erection of an addition at Messrs. J. Garner & Sons' premises, used only for the purposes of the trade of leather-dressing and finishing, on the northern side of Grange-yard, Bermondsey, whereby a division of the building will exceed in extent 250,000 cubic ft. (Messrs. G. Elkington & Son).—Refused.

Uniting of Buildings.

City of London.—The further uniting of Nos. 111 and 113, Queen Victoria-street, City, at the first and second floor levels, without requiring the floors of the buildings to be made fire-resisting (Messrs. Hudson & Booth).—Consent.

City of London.—The uniting of Nos. 6 and 8, Bow-lane, City, at the first, second, and third floor levels (Messrs. C. P. Whitelcy & Son for Mrs. Nicholas).—Consent.

City of London.—The uniting of Nos. 44 and 45, Farringdon-street, City, by openings at the second, third, and fourth floor levels with the buildings extending above the diagonal line drawn in accordance with the provisions of sect. 41 (Mr. W. E. Clifton for the Holborn Viaduct Land Company, Ltd.).—Consent.

City of London.—The uniting of No. 9, Bow-lane, City, with No. 72, Watling-street, by an opening at the ground floor level (Messrs. E. & F. Parsons for Messrs. Mansi Brothers).—Consent.

City of London.—The uniting of Nos. 34 and 35, Cock-lane, Snow-hill, City, by additional openings in the party walls on the ground, second, and fourth floors, and also the erection of water-closets at the third floor level of No. 34 and the first floor level of No. 35, respectively, without requiring the walls below such water-closets to be thickened (Mr. G. Jones).—Consent.

City of London.—The uniting of No. 75B with No. 77, Queen Victoria-street, City (Mr. R. E. Crossland for the Empire Typewriter Company, Ltd.).—Consent.

Finsbury, East.—A modification of the plans approved for the formation of openings in the party wall between Nos. 17 and 18 and Nos.

Digitized by Google

19 and 20, West Smithfield, so far as relates to the omission of one of such openings on each of the first, second, and third floors of the building, and to a reduction in the size of another opening on each of such floors of the building (Mr. G. Vickery).—Consent.

Islington, South.—The use of armoured doors in lieu of iron doors to openings at Nos. 24 to 30 (even numbers only) inclusive, Graham-street, Islington (Mather & Platt, Ltd., for Mr. A. F. Vigers).—Consent.

Kensington, South.—The conversion of Nos. 34 and 34A, Emperor's-gate, Kensington, into residential flats (Mr. H. Row).—Consent.

St. George, Hanover-square.—That the application of Messrs. Withers & Meredith, for an extension of the period within which the uniting of Nos. 17 to 21, Dering-street, St. George, Hanover-square, with Nos. 315 to 317, Oxford-street, by openings on the first and second floors was required to be commenced, be granted.—Consent.

Strand.—The formation of an opening at the basement level between No. 90, Wardour-street, Strand, and the adjoining building southwards, and the retention of an opening at the basement level between two divisions of No. 90, Wardour-street (Mr. H. A. Woodington for Mr. C. Clarke).—Consent.

Finsbury, East.—That the Council do not consent to the uniting of Nos. 83 and 85, Golden-lane, Finsbury, by the formation of an opening at the second floor level (Mr. R. Butler for Messrs. H. T. Greenlaw & Co.).—Refused.

St. Pancras, East.—That the Council do not consent to the formation of openings in a party wall between buildings on the north-eastern side of Whitcher-mews, Rochester-road, St Pancras (Mr. C. H. Peppiatt).—Refused.

Building for the Supply of Electricity.

Chelsea.—That the Council, on the application of Mr. A. Roberts, on behalf of the Chelsea Electricity Supply Company, Ltd., do permit the retention at the generating-station, Manor-street, Chelsea, of the four windows in the western wall of the engine-room, overlooking the boiler-room roof, such windows being glazed with fire-resisting glazing and the opening parts fixed, in lieu of such windows being bricked.—Consent.

Architectural Societies.

NORTHERN ARCHITECTURAL ASSOCIATION.

On Saturday last the members of the Northern Architectural Association paid a visit to Corbridge-on-Tyne, and proceeded to inspect the remains of the Roman town of Corstopitum, under the guidance of Mr. R. H. Forster, who is in charge of the work of excavation, and who kindly explained the various items of interest.

The site of the excavations is situate about half-a-mile westward of the village of Corbridge, and the land has been under cultivation for many centuries.

It was in connexion with the production of the County History of Northumberland dealing with the Corbridge district in particular that the idea of excavating the site of this buried Roman town first claimed attention, and during the last four years sufficient evidence has been produced to give a good general idea of the arrangement and plan of the various buildings, which occupy a space of from 20 to 30 acres.

The buildings adjoining the main road on the north side were explained by Mr. Forster, and considerable interest was manifested in the architectural details of the fountain and the large and important building to the east of the fountain, which seems to have been the forum or market-place. The masonry in this building has been described as the finest example of Roman work in this country.

The recent excavations have disclosed the situation and part of the columns and bases forming a colonnade in front of the two large granaries.

The exploration has been remarkable for the extensive discovery of relics of every description, and a visit to the temporary building which has been fitted up as a museum proved of the greatest interest.

Here are stored pottery and ware in great variety, besides tools, chisels, axes, and domestic articles, many of which are in an excellent state of preservation.

A feature which adds considerably to the interest is the large plan displayed in the museum, where the various buildings are shown plotted to scale with great care, so that a careful record is being kept of the features which have of necessity been covered up.

At the conclusion of the visit a hearty vote of thanks was accorded to Mr. Forster on the motion of the President, Mr. G. J. Brown, of Sunderland.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

On Saturday last week the members of this society made an excursion to Totnes, where various places of interest were visited, among them being the Castle, Guildhall, and Church, under the guidance of Mr. E. Windeatt. The old city wall, council chambers, and North Gate were also inspected. The President, Mr. W. H. May, of Plymouth, afterwards entertained the members to luncheon. In a brief speech, the President alluded to the attractions of Totnes, and thanked Mr. Windeatt for the interesting manner in which he had explained them, and also the Vicar for his courtesy in showing the church. Mr. Harbottle Reed having proposed a vote of thanks to the President for his hospitality, the Vicar, Mr. Windeatt, and Mr. Tollitt replied. After luncheon, further places of interest were visited, as well as several houses with most elaborate plaster ceilings of the XVIth and XVIIth century dates.

THE "BEST" ENLARGING AND REDUCING SCALE.

We have received from Mr. W. Mavitta, of Birmingham, an example of his new instrument for the ready enlargement and reduction of plans and drawings of all kinds. The appliance consists of a body, 29 in. long by 1¼ in. wide by 5-16 in. thick, upon the tapered edge of which are engraved two scales of equal graduations, one reading from right to left, and the other from left to right, each scale having 1,080 divisions in all. A small pivot plate is attached at the starting point of each scale, and the plate can be fixed upon the drawing to be reproduced by means of a suitable pin. By the use of these two pivot centres a drawing measuring 54 in. square can be reduced in certain proportions, or a smaller drawing enlarged in certain proportions to the same dimensions.

For the purpose of enlargements and reductions a reversible slide is fitted in the body of the instrument. One face of the slide is graduated with four scales—two for enlarging one-third, and two for reducing one-third, one scale of each pair reading from right to left, and the other from left to right. The other face of the slide is similarly graduated with scales for enlarging ⅞ and ¼, and reducing ⅛ and ⅛. All scales on the reversible slide are open divided, smaller divisions being read on ivory slips carried by a cursor, for which five ivory slips are provided corresponding to the various proportions of enlargement and reduction indicated by the scales on the slide.

Additional slides are obtainable, so as to make the scale available for any proportionate enlargement or reduction required.

The method of using the instrument is very simple, as may be seen by the following description and the accompanying diagram:—The pivot pin is fixed at any convenient point on the drawing, and the scale placed in position thereon. The scale on the tapered edge of the body is brought in contact with the point A of the drawing to be enlarged, the distance from the pivot is read off, and the same distance on the selected enlarging scale is pricked off by means of spring needle point attached to the cursor. Points B, C, D, E, and others are dealt with in like manner.

The scale is of neat design and excellent workmanship. There is nothing liable to get out of order or adjustment, and the instrument is one we can confidently recommend to our readers as an accurate, simple, and practical device for the purposes mentioned.

LONDON AND DISTRICT BOROUGH COUNCILS.

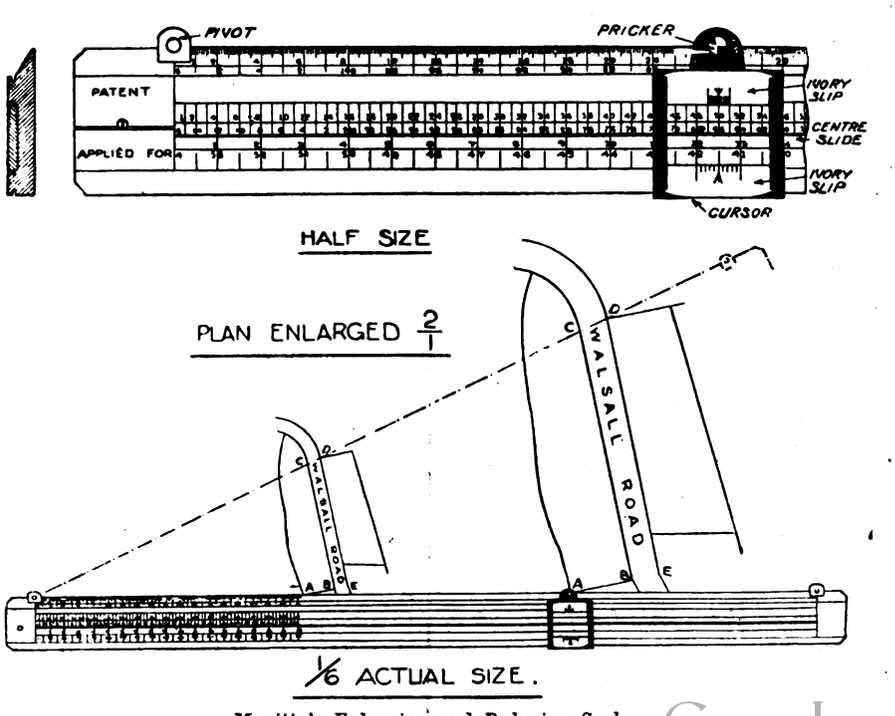
Battersea.—The carriage-ways of six roads are to be repaired with granite macadam, at an estimated total cost of 3,050*l.* A new side entrance is to be constructed to a sewer in St. John's-hill, at an approximate cost of 85*l.* Plans have been passed as follows:—Mr. J. W. Ash, rebuilding stables at rear of 56, Northcote-road; Bridge Cycle Company, shed to be used as cycle factory and store at rear of 58, Battersea Bridge-road: Messrs. L. Whitehead & Co., skating-rink in Vardens-road.

Bethnal Green.—The premises, 46, Digby-street, have been purchased by the Borough Council for 425*l.* The site is to be used for an extension of the depôt. Clare-street is to be repaved with redressed setts from stock instead of asphalt, as originally proposed.

Brentford.—The Urban District have passed plans for Mr. J. J. Fuller for nine houses in Bollo-lane.

Molesey (Surrey).—Messrs. Foster, Lovell, & Lodge, architects for the proposed new isolation hospital, have completed the plans. The Council at their last meeting decided, in regard to certain points on which the architects asked for instructions, that the building be lighted with gas, that a clerk of works be appointed, and that tenders be advertised for in due course.

St. Pancras.—Messrs. Dunk & Bousfield, architects, Billiter Square-buildings, E.C., have been granted permission to construct vaults and pavement lights at from 376 to 384, Euston-road. An application by Mr. John Newcome, 182, Southampton-street, Camberwell, agent for the Amalgamated Society of Railway Servants, to build over a sewer which runs across the site of the proposed new offices of the



Mavitta's Enlarging and Reducing Scale.

Digitized by Google

Society at 195-7-9, Euston-road, and 39, 40, 41, Gower-place, has been granted upon conditions.

Southwark.—The General Purposes Committee of the Borough Council report that owing to the London County Council (General Powers) Bill having received the Royal assent, they have instructed the Borough Engineer to proceed with the necessary preliminary works in connexion with the construction of subways at the Elephant and Castle headway, and for the preparation of detailed drawings and specifications for the work. An application by the Chief Engineer of the London County Council for permission to erect a ventilating column in Rockingham-street has been granted. The column is to be put up in consequence of the fact that during recent storms the existing manhole in Rockingham-street, which weighs from 2½ cwt. to 3 cwt., had on more than one occasion been blown up owing to the pressure of air in the sewer. The ventilating column will enable the manhole leading to the chamber on the southward and Bermondsey relief sewer to be closed, thereby preventing the egress of water in time of heavy rain. Plans, submitted by Mr. M. W. Matt, architect, Birkbeck Bank-chambers, Holborn, W.C., in regard to a proposed new frontage line in Winchester-street, have been passed by the Works Committee.

Watford.—The site of a reservoir at Bushey has been purchased by the Urban District Council.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERTILLERY.—Twenty houses; Mr. Adams, architect, Abertillery. County school: Mr. E. A. Johnson, architect, Merthyr; Messrs. Thomas & Son, builders, Abergavenny.

Ballingham.—Restoration of parish church; the churchwardens.

Ballyhinch.—Congregational church; Mr. J. Seeds, architect, Donegall-square, Belfast.

Bargoed.—Twenty-eight houses; Mr. I. Leyshon, architect, Hamburg-road, Bargoed.

Barrowfield.—Additions to St. Peter's and St. Paul's Church, for the Trustees.

Barrow-in-Furness.—Extension to cottage homes, Roose-road, for the Guardians.

Bishop Auckland.—Rink, for the Olympia Rink Company, Ltd., Bishop Auckland.

Bishop's Stortford.—Extensions to infirmary, for the Guardians.

Blackpool.—Street of houses; Surveyors, St. John's Estate Company, Blackpool.

Bothwell.—Roman Catholic chapel (8,000*l.*), for the Trustees.

Bournemouth.—Skating-rink; Mr. G. F. Ward, architect, 71, Colmore-row, Birmingham.

Chatham.—The Town Council have approved of a plan lodged by Messrs. J. & P. Burrell for a market in the High-street.

Chesterfield (Derby).—Additions to Workhouse, for the Guardians.

Cobham.—Mortuary, cemetery; Messrs. Mills & Somerville, architects.

Colbren.—Chapel; Mr. W. B. Rees, architect, Dumfries-place, Cardiff.

Darlington.—Banking premises, for the London and Joint Stock Bank; Messrs. Clark & Moscrop, architects, Darlington.

Dennystown.—New works for the Dennystown Brass Works, Dalreach, Dumberton.

Dudley.—The Town Council has passed the following plans:—Storerooms, Priory-street, for the Midland Counties Mutual Benefit Society; storage-battery house, generating-station, Stourbridge-road, for the Corporation; four houses, Halesowen-road, Netherton, Mr. S. Hickton; additions to works, Porter-street, for Messrs. J. & A. Hillman, Ltd.; additions to Plume of Feathers public-house, High-street, Mr. J. H. Fones.

Dunstan.—School (5,000*l.*); Mr. Nordham, builder, Dunstan-on-Tyne.

Durham.—School, Close House: Mr. W. Rushworth, architect, Shire Hall, Durham.

East Howe.—School (4,000*l.*): Mr. W. J. Fletcher, architect, Shire Hall, Dorchester.

Elmsall.—Church; the Rev. A. Gould, Elmsall.

Gellyfactog.—School; Mr. Thackeray, architect, Town Hall, Merthyr.

Great Oakley.—Additions to parish church; the Vicar.

Grimsby.—Adaptation of Spring Church buildings for offices for Borough Engineer and Treasurer; Mr. H. G. Whyatt, Surveyor, Grimsby Town Council.

Haltwhistle.—Offices and cottages: Plenmellor Colliery Company, Ltd., architects.

Haslingden.—Converting farm buildings into Boys' Home; Messrs. T. Tattersall, Ltd., builders.

Heightcliffe.—Residence (1,000*l.*); Messrs. Sharp & Waller, architects, Brighouse.

Horninglow (Burton-on-Trent). — Vicarage and mission-room; the Vicar.

Invergordon. — Extensions to academy (2,500*l.*); Mr. J. J. McBeth, architect, Queen's House, Inverness.

Inverness.—Skating-rink (2,000*l.*); Messrs. Ross & Son, architects, Queen's Gate, Inverness.

Keighley.—Skating-rink; Messrs. W. & A. Sugden, architects, Keighley.

Liverpool.—Additions to Southern Hospital (5,000*l.*); Messrs. Jones & Son, builders, Heasant-street, Liverpool.

Llanhilleth.—Twenty-six houses, for the Cwmeynew Building Club.

Londonderry.—Music-hall, Strand-road; Mr. J. Mulholland, architect.

Lothianburgh.—Golf Club-house; Mr. J. Morrison, architect, 21, York-place, Edinburgh.

Newcastle.—Offices, Westgate-street; Mr. W. Bell, architect, Central Station, Newcastle.

Northumberland Heath. — Vicarage, St. Paul's (2,000*l.*); the Vicar.

Nuneaton.—Skating-rink; Mr. G. F. Ward, architect, 71, Colmore-row, Birmingham.

Oxhey (Herts).—Parish hall, Pinner-road; Mr. Austin Dearst, architect.

Plymouth.—The Town Council has passed the following plans:—Premises, corner of Gascoyne-place and Beaumont-place, Mr. R. E. Cocks; twelve houses, Wembury Park-road, Messrs. Shellabear & Son; saw-mill and engine-house at timber works, Sutton-road, Messrs. Edred Marshall, Ltd.

Pontypool.—Additions to reformatory; Mr. W. H. D. Caple, architect, Church-street, Cardiff.

Port Sunlight.—Institute (1,000*l.*); Messrs. Ford & Son, builders, Birkenhead.

Rathdown.—Sixty houses; Mr. R. M. Butler, architect, Dublin.

St. Paul's Cray (Kent).—Additions to Cray Valley Cottage Hospital (2,025*l.*); Mr. St. Pierre Harris, architect, 8, Laurence Pountney-hill, E.C.; Messrs. H. Somerford & Son, builders.

Southampton.—The Town Council have passed the following plans:—Offices and store, Floating Bridge-road, also six houses, Beach-road, Clarendon-road, and Richville-road, Messrs. Weston & Burnett; six houses, Harborough-road, Mr. A. G. Fry; thirty-five houses, Harborough-road, and Newcombe-road, Mr. W. H. Masters; six houses, Holyrood-avenue, Mr. A. W. Bricknell; alterations to the Alma Inn, Alma-road, Messrs. Mitchell, Son, & Gutteridge; four houses, Highfield-lane, Mr. F. W. Young, jun.; thirty-six houses, Coventry-road, Mr. C. H. Wilkins.

Stretford (Manchester).—The following plans have been passed:—Alterations, etc., to Talbot House Schools, for the Royal Schools for the Deaf and Dumb; five houses, Ayres-road, Mr. Thomas Emery.

Torpoint.—School (5,000*l.*); Mr. W. E. Bennett, builder, Bodmin.

Walsall.—The Town Council has passed the following plans:—Presbytery, Blue-lane, Rev. H. McDonnell; particular Baptist church, Midland-road, for the Trustees; alterations and additions to premises, Freer-street, Messrs. J. & W. Griffin, Ltd.

Walsoken.—School; Mr. H. Green, architect, Castle Meadow, Norwich.

Welshpool. — Hospital; Mr. G. Snook, Borough Surveyor, Welshpool.

Whitecraigs.—Residence (2,000*l.*); Mr. C. Menart, architect, 241, West George-street, Glasgow.

Competition News.

GRIMSBY TOWN HALL EXTENSION SCHEME.

The minutes of the Finance Committee having reference to the Town Hall extension scheme were considered at a meeting of the Town Council on the 10th inst. They set forth the award of Sir Alfred Gelder, the assessor in the competition, and recommended the payment of the premiums which had been offered. In the course of a discussion, Alderman Sir George Doughty, M.P., said that he had been a prime mover in the scheme so far as it had gone. He had no desire to push the scheme on to the town against its wish. So far the Council had gone as far as his resolution asked them to go. Everyone agreed that an extension of the Town Hall was necessary, and the only question was the expediency of the time when it should be carried out. He was quite ready to support the amendment to erase the words "three months." He had suggested in Committee "a reasonable time." He was willing to await the settlement of the Immingham-road question, and then if it could be shown that the Town Hall scheme could be gone on with without burdening the ratepayers, they might go on with it. The Council agreed to the deletion of the words "three months," and adopted the minutes.

THE STOKE-ON-TRENT TOWN HALL SCHEME.

A special meeting of the Stoke-on-Trent Town Council was held on the 10th inst. to consider a report by the Council in Committee with respect to the Town Hall extension scheme. The Committee had recommended that Messrs. Wallis & Bowden be engaged to prepare a new set of plans on their assurance that the work could be carried out in the way proposed for 24,000*l.*—Alderman Geen moved the adoption of the report, and on being asked for an explanation of the financial aspect of the scheme said he thought the best time for the statement as to ways and means would be when it was proposed to accept the tenders for the work. When the time arrived, not only he, but other members of the Corporation would place a satisfactory scheme before the Council. A long discussion took place, but it was eventually decided that before appointing the architects a sub-committee should confer with Alderman Geen on that point.

Trade Catalogues.

We have received from the Engineering Department of the National Electric Lamp Association of America a pamphlet describing all kinds of miniature and low-voltage tungsten lamps. These lamps are used for lighting when the pressure is only from 1·5 to 20 volts. They are particularly useful for motor-cars and for dental and surgical work. As their efficiency is three times higher than carbon-filament lamps, much lighter batteries can be employed. The data given in the pamphlet are all thoroughly trustworthy. We regret that there is no corresponding association in this country whose reports would carry equal weight with the general public.

The Electric and Ordnance Accessories Company, Ltd., of Aston, Birmingham, have sent us a catalogue of their electric cooking and heating apparatus. Many novel types of apparatus are illustrated, and full information given as to the cost of operating them. Electricity can be used most usefully and economically when only small quantities of heat are required, as in certain cooking operations, for flat-irons, curling-tongs, cigar-lighters, etc. Those who have experienced the cleanliness and convenience of electric heating only return to the older methods when their meter bills become excessive. The tables given in this catalogue will enable anyone to calculate at once the cost of electric heating. We strongly recommend users of electricity to send for this catalogue.

BOOKS RECEIVED.

BUILDING CONSTRUCTION: ADVANCED COURSE. By Charles F. Mitchell and George A. Mitchell. Sixth Edition. Pp. 864. (B. T Batsford. 6s.)

SURVEY OF LONDON, VOL. II. CHELSEA. Part I. Pp. 87, and 94 Plates. (Committee of the Survey of the Memorials of Greater London. 25s.)

THE CHURCHES OF COVENTRY. By Frederic W. Woodhouse. Pp. 99. (George Bell & Sons. 1s. 6d.)

Correspondence.

REINFORCED CONCRETE.

SIR,—With reference to the note appended to the letter of "Londoner" in your current issue, I think that in England Homan was the first to form floors with rolled joists embedded, as he did such work for me in 1869.

A system of reinforced concrete floor construction was about this time introduced by one Hyatt, and in 1875 I made use of it extensively by constructing floors of about 9-ft. span with 3-in. by ¼-in. wrought-iron bars spaced 3 ft. apart, bedded about 1 in. from underside of the concrete with ⅜-in. round rods threaded through the bars 1 in. from bottom so as to supply the necessary tensional strength to the lower part of the concrete. C. HARSTON.

*** We perfectly remember Thaddeus Hyatt's system, and saw some of his beams tested at Kirkaldy's at the time they were first proposed; but our impression from the tests (and we believe Mr. Kirkaldy's also) was that there was no real unity of action between the iron rods and the concrete. Still, it was an early suggestion. If we remember right, Hyatt was an American.—ED.

SIR,—In erecting the first concrete houses at Bexley Heath, Kent, in 1864, twisted hoop-iron was embedded in the walls and flat roofs; the concrete was composed of Medina cement mixed with gravel and sand. This cement for concrete construction proved a failure, so after that costly experience Portland cement of the highest grade only was employed in the numerous structures that I erected in various parts of the United Kingdom, and continued to erect with the greatest success up to 1879, when

Digitized by Google

all the forces of English prejudice seemed to be directed against the further uses of concrete for fireproof construction in this country. I then issued a challenge in the building papers for 200*l.* a side that I would construct a 9-in. concrete wall of given dimensions that would be ten times stronger and much cheaper than one erected by any opponent in brick or stone, but no builder accepted this offer, so for the time being concrete construction was discarded in England. Since then our friends over the water have reintroduced various systems of reinforced concrete here, some of them I may say perfect, others I should be afraid to recommend. JOSEPH M. TALL.

ELTHAM PARISH HALL COMPETITION.

SIR,—I have just received from the Hon. Secretary the conditions for the proposed new parish hall at Eltham.

After stating the accommodation, etc., required, and that the total cost is not to exceed 2,000*l.*, the conditions go on to say:—"The Committee invite designs, together with a specification and estimate, for the erection of the above, and undertake either to appoint the architect of the selected design to carry out the work, or to pay him a premium of 15 guineas for such design. The design selected in any case to become the absolute property of the Committee."

Now, I may be under a misapprehension, I admit, but it seems to me that this is tantamount to saying that the Committee really do not see the necessity of paying an architect to carry the building through, but that on the face of it, it would be too glaring a statement to make, were they to say so right out. So they get over the difficulty by undertaking "*either* to appoint the architect of the selected design to carry out the work, *or* pay him 15 guineas for such design."

This, being interpreted, means that having from the poor deluded architect a specification and estimate (*vide* conditions), in addition to the design, it is an easy matter to palm him off with a paltry 15 guineas, and then get some builder to carry out the work according to the design and without the aid of the long-suffering architect.

It is time something were done to put a stop to this sort of thing, and to prevent unscrupulous builders from undertaking works of any importance without the supervision of a properly-qualified architect. A SUFFERER.

ST. ALFEGE, GREENWICH.

SIR,—I should be glad if you would be able to afford space for some further remarks on this church, of which an excellent illustration appears in the current number of the *Builder*. Having examined the building on several occasions it seems evident that the tower up to the main ridge is Hawkesmore's work, it having all the appearance of being part of the original design. Above this height the work of John James begins, consisting of the belfry and steeple, which are quite characteristic of him, showing a more "correct" and less original treatment than Hawkesmore would probably have adopted.

It was apparently an object with Hawkesmore in designing his churches that a large square hall should constitute his *tour de force*, and in the present instance, as in others, it will probably be allowed that he has by this means produced an impressive effect in the interior; and the exterior is in thorough accord. Externally the bold elliptic arch spanning the recessed portion at the east end, and the Doric order on an imposing scale on either side is a truly noble piece of work. Viewed from any point, the church can hardly fail to arrest the attention of the passer-by, the effect being broad and dignified, in a great measure owing to the unstinted use of Portland stone for the whole structure.

Deposited in the church, the story goes, were four pictures, which some thirty years since the Vestry sold for a few pounds to a purchaser, who parted with them for some thousands, much to the dismay of the Vestry, who brought a fruitless action at law for their recovery. The portrait, on glass, of Humphrey Duke of Gloucester may have been one of them. Perhaps your readers may afford some information on these pictures. R. W. COLLIER.

INSECTS IN TIMBER ROOFS.

SIRS,—I herewith enclose sample of some maggots and beetles which I have found in the oak roof beams of Thornham Church, Norfolk.

They are entirely eating the wood away; the maggots seem to eat right into the wood, and the beetles fall down on to the floor.

Do you know of another similar case, and if there is anything you can dress the wood with to stay it from going further? Will you kindly ask your readers? R. SHANKS.

Obituary.

MR. ROBERT HALL.

The death took place early on the 6th inst., at his residence in Galashiels, of Mr. Robert Hall, sole surviving member of the firm of Messrs. R. Hall & Co., builders. Mr. Hall joined the firm over fifty years ago. The firm has erected many public buildings and mansions throughout Scotland and in the north of England, their latest important erection being the Technical College at Galashiels.

MR. R. H. BULLEN.

The death took place on Monday, at his residence, 40, Cumberland-avenue, Liverpool, of Councillor Robert Henry Bullen. Mr. Bullen, who was in his 76th year, was long associated with the building trade, first under the style of Clegg & Bullen, and later as Bullen Brothers & Sons, Ltd.

General Building News.

MORAVIAN CHURCH, BELFAST.

A new church has been erected at Cliftonville-circus by the Moravian Congregation. The building is of brick, with Giffnock stone dressings. The roof is covered with olive-green slates on the main building, and with red tiles on the tower and south porch. At present only the first section of the church is completed, to seat 400 persons, but the plans provide for an enlargement to ultimately accommodate 550 persons. The walls generally are finished in plaster, which is relieved by stone dressings in places, or by Keen cement jambs. The ceiling is open timber, with constructional timbers exposed. The chancel furniture has been made by Messrs. Bell & Mayrs. The general contractors for the building were Messrs. Henry Laverty & Son. The plumbing and gas-piping has been put in by Mr. J. Milliken. The gas fittings, pendants, and brackets were made by Mr. George Jones, who also supplied the gates and railings. The glass work and leaded lights have been executed by Messrs. Ward Partners. The entire cost amounts to about 3,000*l.* Mr. J. St. John Phillips, architect, of Belfast, prepared the plans.

CHURCH IMPROVEMENTS, GILCOMSTON.

Some improvements have been effected at the Gilcomston U.F. Church. The work has been carried out under the supervision of Messrs. A. Marshall M'Kenzie & Sons, architects. The contractors were:—For painting and glazing, Messrs. George Donald & Sons; woodwork, Mr. William Dawson, Huntly-street; electric installation, Messrs. A. B. Robertson & Son; electric fittings, manufactured by Messrs. W. A. S. Benson & Co., London.

CHURCH EXTENSION, ABERGAVENNY.

Holy Trinity Church, Abergavenny, is being enlarged. The plans, prepared by Mr. E. A. Johnson, architect, provide for the erection of a north aisle to correspond with the south aisle, and a vestry. The estimated cost of the work is 1,250*l.* Messrs. J. G. Thomas & Sons, builders, of Abergavenny, are carrying the work out.

ST. SWITHIN'S, NORWICH.

A scheme of restoration has been carried out at this church. A new west window has been put in, and a carved oak screen erected at the foot of the sacrarium steps. The floors have been levelled and reformed with pitch-pine blocks, and the old stone slabs and brasses refixed in the floors. The windows have been restored and reglazed, the plaster to the walls repaired, and the church is now warmed by radiators and lighted by electricity. Immediately adjoining the church to the north-east there has been built a parish hall, with recreation-rooms, scullery, etc. These new buildings are also, like the church, lighted by electricity and warmed by hot-water radiators. The building work has been done by Messrs. J. Youngs & Son, of Norwich, under the direction of Mr. Herbert Green, the Diocesan Architect and Surveyor. The iron railings and the heating have been executed by Messrs. Barnes & Pye, of Norwich; the cast leadwork to the roof by Mr. J. T. Gibson, of Norwich; the electric light installed by Mr. C. W. Hagg, of Norwich; and the carving executed by Messrs. Howard & Son, of Norwich.

NEW CHURCH, NEWQUAY, CORNWALL.

The foundation-stone was recently laid of the new church of St. Michael, at Newquay. The building is estimated to cost between 10,000*l.* and 12,000*l.*, of which over 7,000*l.* has been raised, but it is not intended to proceed at present with the chancel and tower. When completed, the total length of the church will be 139 ft., 39 ft. being taken up by the chancel, and seating accommodation will be provided for 1,000 persons. Local stone will be used in the construction. Dressed Cornish granite is to be utilised for the windows and quoins, St. Columb worked stone for the external walls, and blue Polyphant stone for the pillars of arcades. The flooring will be of oak, and the roof slated. Mr. J. N. Comper is the architect, and Mr. Ambrose Andrews, of Plymouth, the builder.

NEW CHURCH, PARTICK.

Balshagray Church, Partick, which has been erected at the junction of Broomhill-drive and Crow-road, has now been opened to public worship. The church, which provides accommodation for 800 people, and has been erected at an estimated cost of about 6,000*l.*, is of red freestone. It has been built from plans by Messrs. Stewart & Paterson, Glasgow.

EPISCOPAL CHURCH, GLASGOW.

The foundation-stone was recently laid of the new Episcopal Church of St. Mark's, Kinning Park. The new building, after the design of Mr. R. S. Lorimer, A.S.R.A., Edinburgh, will be built with red sandstone. The nave and aisle now in course of erection will, when completed, accommodate 250 worshippers. A small hall, in addition to the church, is now being built. The cost of the work is to be about 2,800*l.*

PLYMOUTH CORPORATION GRAMMAR SCHOOL.

The North-road School, which was built in 1895-6 by the old Plymouth School Board, from plans by Messrs. Hine & Odgers, architects, has been adapted to the purposes of a secondary school, under the Plymouth Education Authority, and is henceforth to be known as the Plymouth Corporation Grammar School. The alterations have been made by Mr. G. B. Turpin, under the direction of Messrs. Hine, Odgers, & May. The total cost has been about 1,000*l.* The central halls on both floors have been retained, but at one end of each of them is a folding partition, which will make two additional classrooms. The central hall on the ground floor is to be fitted as a gymnasium, for which, with its wood-block flooring, it is admirably adapted. Some of the classrooms have been fitted as laboratories—for chemistry, for physics, and for demonstration lessons; one room has been devoted to the teaching of cookery, and new buildings have been constructed for woodwork and metal-work classes.

INFANTS' SCHOOL, LOCHORE, FIFE.

A new school, named the Ballingry Infant School, has been opened at Lochore. The new building is to provide accommodation for 400 pupils, and will cost about 5,000*l.* Altogether there are eight apartments—a large hall, 60 ft. by 27 ft. 6 in., and seven classrooms, 25 ft. by 25 ft. Messrs. And. Scobie & Son, architects, Dunfermline, prepared the plans, and the contractors were:—Mason, Mr. James M. Clark, Dunfermline; joiner, Mr. D. Rattray, Lochore; plumbers, Messrs. Alex. Rolland & Son, Dunfermline; plasterers, Messrs. A. A. Hutchison & Sons, Kinross; slater, Mr. John Robertson, Dunfermline; painter, Mr. David Louden, Kirkcaldy; and heating, Messrs. D. Lowe & Sons, Edinburgh.

KING'S NORTON GRAMMAR SCHOOL.

The ancient half-timbered building that stands on the north side of the churchyard of King's Norton Church, and which is known as the "Old Grammar School," is to be restored. A committee appointed by the parish vestry, with the vicar, the Rev. Hugh Price, as chairman, have the scheme in hand, and Mr. J. A. Cossins is acting as their advisor, while the actual work of repair is being carried out under the superintendence of Messrs. William Hale & Son. The old roof tiles are to be relaid, and the inequalities of the old roof surface are allowed to remain unstraightened, and all evidences of the various alterations made in the sizes and positions of the various windows and other parts will be carefully maintained. The estimated cost of the work is 250*l.*, and for this an appeal is now being made.

BOARD SCHOOL, FINDOCHTY.

A new school has been opened by the Findochty School Board. The buildings have cost about 2,000*l.*, and form part of a plan for a complete new school, of which only the infant department has been erected. The architect was Mr. R. B. Pratt, Elgin.

SCHOOL, CARNETOWN.

A new mixed school has been erected at Carnetown, Abercynon. The building is of native stone, with red wilderness stone and red brick dressings. Ventilation is secured by means of ridge extract ventilators and by hopper inlets. The building is heated by a low-pressure hot-water apparatus, and has in addition open fireplaces in each room. The

Digitized by Google

building has been erected by Mr T. F. Howells, builder, Cardiff and Caerphilly, from plans by the Architect to the Mountain Ash Education Committee, Mr. W. H. Williams.

NEW SCHOOL, SCOTSTOUN.

The Victoria Drive School, Scotstoun, has now been completed and opened. The school is three stories in height, and is planned on the corridor system. On the ground floor is the infant department, attached to which is a large assembly hall, divided from main corridor by a series of arches. On the first floor is the junior department, also with large hall corresponding to that of infant department. The upper floor is devoted to senior and higher grade departments. The heating is by means of radiators on the low-pressure system. The ventilating is by mechanical extraction fans, driven by electric motors, being fitted in the roof. In out-buildings provision has been made for teaching of cookery, laundry, and manual work. A gymnasium has also been provided. The architects are Messrs. Kerr & Watson, Johnstone, and the measurers Messrs. Shearer & Marr, Glasgow.

NATIONAL SCHOOL, DONAGHY.

A national school has been built at Donaghy, near Cookstown. The new building, which is a stone and lime structure, affords accommodation for seventy pupils. It was designed by Mr. A. M. Brennen, C.E., Cookstown, and the builder was Mr. John Forrest, of the same town.

COUNCIL SCHOOLS, RAMSGATE.

Council schools have been erected in Lilian-road at a cost of 10,600*l.* by Messrs. W. J. Ballard & Co., to plans prepared by the Borough Engineer, Mr. T. G. Taylor. The schools have a frontage of 324 ft. and a depth of 118 ft., and will provide accommodation for about 760 children. There are separate entrances for the boys and girls; their recreation-grounds are apart, as are also the class-rooms.

HIGH SCHOOL, STRANRAER.

The Stranraer School Board have decided to build a new high school, and have secured a site in Lewis-street for the purpose. Messrs. Barclay, Glasgow, have prepared the plans for the proposed work.

COUNCIL SCHOOL, LYDBROOK.

A new Council school has been opened at Lydbrook. The building, designed by Mr. M. H. Medland, County Architect, was built by Messrs. Crane, of Nottingham, under the supervision of Mr. W. Wiggall, clerk of works, at a cost of about 3,800*l.* The heating installation, which is upon the hot-water principle, was put in by Messrs. Bevan & Sons, of Gloucester. Accommodation is provided for about 250 children (176 mixed and seventy infants), and there are separate departments for boys, girls, and infants, with sliding partitions so that the rooms may be divided when occasions require. There is also a private room and storeroom, together with cloakrooms and lavatories. The building throughout is lighted with oil. There are also separately-built cookery and laundry and manual training rooms, with the usual offices.

TECHNICAL SCHOOL, BURNLEY.

A new technical school has been erected at Burnley. The school, which is from the designs of Mr. G. H. Pickles, the Borough Engineer, has been built on land in Ormerod-road, purchased for 5,000*l.* The building itself and its equipment have cost about 50,000*l.* The central hall has a holding capacity for about 800 persons. Accommodation is provided for 1,351 evening students and 736 day students.

PARISH HALL, WALLSEND.

A parish hall is being erected in St. Luke's parish, Wallsend. The building will be built of concrete blocks from designs furnished by Messrs. Frank Caws, Steel, & Caws, Sunderland. The cost will be 1,700*l.*

PARISH-ROOM AND VICARAGE, BURTON.

A parish-room and vicarage are to be built in Horninglow parish. The plans have been drawn up by Messrs. Currie & Thompson, of Derby, and the total cost of the buildings will be about 2,000*l.*

NEW BARRACKS, EGYPT.

Messrs. Henry Lovatt, Ltd., of Wolverhampton, have been appointed contractors for the erection of barracks at Abbasia, near Cairo, for the English Army of occupation. The blocks will be constructed of concrete, and will be similar to those built by them on Salisbury Plain. Mr. Harry B. Measures is Director of Barrack Construction to the War Department.

ENLARGEMENT OF A HYDRO AT BOURNEMOUTH.

The Durley Dean Mansion Hotel and Hydro, on the West Cliff, Bournemouth, has been enlarged. The additions embrace a dining-room, capable of accommodating 250 persons, on the ground floor, above being four stories of bedrooms, and in the basement kitchens, boiler-house, etc. In addition the existing building has been remodelled. An electric lift (by Waygood) has been introduced to all the floors. The architects were Messrs. Hawker & Mitchell, and the builders Messrs. Jones & Seward, while Messrs. Cochrane, of Cannon-street, were responsible for the heating and kitchen arrangements.

PROPOSED NEW INFIRMARY, PERTH.

A site is being acquired at Tullylumb on which to erect the new Perth City and County Royal Infirmary. A sketch-plan, prepared by Mr. James Miller, architect, Glasgow, provides for a hospital with 120 beds, at an estimated cost of 36,800*l.*

CONVALESCENT HOME, PORTHCAWL.

Extensions have been made to the Rest Convalescent Home, Porthcawl. Colonel E. M. Bruce Vaughan was responsible for the design of the new buildings, which have cost, including furnishing, 9,755*l.*

BUILDING IN UPPER RENFREWSHIRE.

At a recent meeting of the Building Committee of Upper Renfrewshire, intimation was given of the intention to erect the following buildings:—Villa in Kirkhill, Mansewood, for Thomas Hendry, 33, Renfield-street, Glasgow; nine tenements in Yoker-road, Yoker, for William Anderson, jun., 49, Bellfield-street, Glasgow; double villa in Nevis-road, Hill-park, for John Taylor, Victoria-street, Lark-hall; cottage at Old Hall, Paisley, for David Brown, jun., 15, Greenlaw-avenue, Paisley; two tenements at the corner of Garry-street and Spean-street, Cathcart, for Richard Henderson, 116, Hope-street, Glasgow; double cottage in Hillhead-road, Crookston, for John Young, Lennox-road, Crookston; double cottage in Busby-road, Clarkston, for James Lindsay, Brisbane-road, Largs; infant school and laundry block at Yoker Public School, for the Renfrew Landward School Board; double cottage in Holehouse Brae, Neilston, for Mrs. J. Quin, Neilston; and ten double cottages in Paisley-road, Barrhead, for Messrs. Young & Pollock, Main-street, Neilston.

IMPROVEMENTS AT THE RAILWAY-STATION, WORTHING.

It is announced that Messrs. J. Longley & Co., of Crawley, have secured the contract for the rebuilding of the railway-station in this town. The old buildings on the down side will be demolished, and the new portion will occupy nearly 10,000 ft., and on the space formerly covered on the up side (where a new island platform will be constructed), 2,755 ft. This island platform, which will be on the north side, will be about 640 ft. long and 40 ft. wide, and on it will be erected waiting-rooms, refreshment-room, and lavatories. The buildings will be constructed of Portland stone and red bricks, with slated roofs. The main structure will have a frontage to the Railway Approach of 250 ft.

PUBLIC WASHHOUSES, MANCHESTER.

The Manchester Baths Committee are about to erect public washhouse and wash-baths in Armitage-street, Hyde-road, Ardwick. The new establishment, when complete, will have thirty-five washing-stalls, with all essentials, twenty-one wash-baths for males, and twenty-two wash-baths for females. The estimated cost is 10,000*l.*, and the scheme will be completed in from six to eight months' time. Mr. H. Price, the City Architect, is responsible for the plans, and the work is being executed by Mr. Normanton, contractor.

INFECTIOUS DISEASES HOSPITAL, KILMARNOCK.

The infectious diseases hospital which the Corporation of Kilmarnock has erected at Kirkland-side is now open. The hospital consists of seven different blocks, and stands within grounds extending to about 22 acres, the total cost of buildings, furnishings, site, etc., amounting to about 20,000*l.* Provision has been made for forty-eight beds. Mr. James Hay, architect, prepared the plans.

ESTATE DEVELOPMENT, CHELTENHAM.

In the district known as Leckhampton Hill several estate development schemes have either been begun or are proposed. The Battledown Brickworks is a scheme in progress for which Messrs. Webb Brothers, Ltd., are responsible. At Pilford a road will be built jointly by Messrs. Webb and J. Dale to open up the property of each. Further up the hill a syndicate has bought from the Carrington estate half a mile of frontage to Leckhampton Hill-road and to Daisybank-road. They propose to erect all classes of houses, from workmen's cottages in Daisybank-road and Lower Pilley for the convenience of workmen, gardeners, coachmen, chauffeurs, etc., now employed on Leckhampton Hill, to 40*l.* a year houses in the more prominent positions. In addition to the Pilford new road off the Pilley-road, there will be two roads constructed from Leckhampton pitch in order to develop fully the latest garden suburb. Messrs. Prothero, Phillott, & Barnard are preparing plans for this work.

NEW BUILDINGS IN LONDON.

Parish hall, Flower-lane, Mill Hill, Hendon, N.W. (2,360*l.*), for the churchwardens of the parish church. Shops, etc., Tooting-broadway, S.W.; architect, Mr. C. Granville Baker, 5, Bloomsbury-square, W.C.; builder, Mr. F. W. Fletcher, Maybury-street, Tooting. Electric theatre on site of No. 24, Tottenham Court-road, W., for the Living Picture Company, 15, Britannia-street, W.C. Extensive alterations to mansion, Halkin-street, W.; builders, Messrs. Waring & White (1906), Ltd., 1A, Cockspur-street, W. Italian hotel and restaurant; builders, Messrs. Watson & Co., 10, Glasshouse-street, Regent-street, W. Skating-rinks, Hammersmith, W., and Shaftesbury-avenue, W.; Roller Rink Construction Company, 6, Cherry-street, Birmingham. Buildings, corner of Holborn and Featherstone-buildings; builder, Mr. J. Waddington, 59A, Carter-lane, St. Paul's, E.C. Extensive buildings, Shaftesbury-avenue, W.C.; builders, Messrs. J. Parkinson & Son, Ltd., Blackpool. Buildings, Shaftesbury-avenue, W.C.; builder, Mr. B. E. Nightingale, Albert-embankment, S.E.

THE VINTNERS' HALL.

The Vintners' Company are making an extension to their hall in Upper Thames-street. They have now built over the forecourt and the small wings that stood on either side. The architect is Mr. A. H. Kersey.

Stained Glass & Decoration.

MEMORIAL WINDOWS, TRINITY CHURCH, GLASGOW.

Two stained-glass memorial windows have been erected in this church. The windows have been designed and executed by Mr. Stephen Adam, jun., Glasgow, and occupy a position in the west transept of the church. They each consist of three compartments, and illustrate outstanding incidents in the life of Christ.

Sanitary and Engineering News.

WATER TOWER, YORK.

A large water tower of 100,000-gallons capacity is being erected on a plot of land between Leeman-road and the river Ouse, at York, for the North-Eastern Railway Company. The tower, octagonal in shape, will be 104 ft. high and 30 ft. in diameter, and will be constructed on the Khan system of reinforced concrete. At each angle, and in the centre, are three concrete piles about 60 ft. long, driven into the ground by means of a ram, and laced together with tie-rods. On these will be erected a concrete superstructure reinforced by steel rods about an inch in diameter, and at the top will be a tank capable of holding 100,000 gallons of water, weighing, on a basis of 10 lb. per gallon, about 446½ tons. The concrete piles and blocks are being moulded on the spot. The principal object in view in erecting the tower is to secure an adequate pressure of water for various purposes at the railway-station, particularly for washing out locomotive boilers, etc. The task of piling the foundations is now in progress. A tower of similar construction and height, but with a tank of smaller capacity—about 20,000 gallons—is to be erected at the Holgate-road Carriage Works. Messrs. W. Moss & Sons, Loughborough, are the contractors.

ST. ANDREWS WATER SCHEME.

At a recent meeting of St. Andrews Town Council it was reported that the Water Provisional Order had now received the Royal assent. In connexion with the Cameron water scheme the Council have appointed Mr. William Watson, the Burgh Surveyor, to be engineer for the scheme, and Mr. A. Balfour Craig, the Assistant Surveyor, to the position of resident engineer.

LISS MAIN SEWERAGE.

The Petersfield Rural District Council have adopted a scheme of sewerage and sewage disposal for the parish of Liss, Hampshire, prepared by Mr. Harry W. Taylor (Messrs. Taylor, Wallin, & Taylor), of Newcastle-upon-Tyne and Birmingham. The sewage will be collected by a series of sewers in the village, and conveyed down the valley to the outfall works near Anders Ash; here it will be pumped by oil engines and centrifugal pumps into a receiving tank, and from this it will pass through hydrolitic and detritus tanks, a

Digitized by Google

percolating filter, and finally over 2 acres of land, the effluent ultimately discharging into the River Rother. The estimated cost of the works is 4,000*l.*

NEW BRIDGE, STAKEFORD.

A new bridge across the Wansbeck at Stakeford has been opened to the use of the public. The bridge connects the villages of North Seaton and Stakeford, on the opposite sides of the river. The bridge is 264 ft. long, between abutments, and is divided into six spans of 44 ft. each. There is a 20-ft. carriage-way and footpath. The borings showed that the rock for the foundations was up to 37 ft. deep, and the structure is carried by ferro-concrete piles. The bridge is constructed to carry a moving load of 30 tons. The whole of the structure is of ferro-concrete on the Hennibique system. About 1,600 ft. of fenced roads have been cut as approaches. The engineers were Messrs. D. Balfour & Son, and the contractors Messrs. Brims & Co., both of Newcastle. Mr. H. Middleton and Mr. T. Lowes were the resident engineers, and the Union Cement Company, Newcastle, supplied the cement for the contract.

Miscellaneous.

THE ILLUMINATING ENGINEERING SOCIETY.

The draft constitution of the above Society, having for its object the study of the science and art of illumination, was formally adopted on May 25 of this year. Professor S. P. Thompson, D.Sc., F.R.S., has now consented to become the first President of the Society, and influential support has been received from many distinguished authorities on matters of illumination in this country, on the Continent, and in America. In addition, a representative Council has now been formed. Anyone interested in the objects of the Society and desiring to become a member is invited to apply to Mr. L. Gaster, Hon. Secretary, 32, Victoria-street, London, S.W.

THE INSTITUTE OF METALS.

At the autumn meeting of the Institute of Metals, which will be held at Manchester on October 14 and 15, it is expected that the following papers will be presented:—Messrs. J. H. Andrew, M.Sc., and C. A. Edwards, on "The Constitution and Properties of the Ternary Alloys Aluminium, Copper, Tin"; Messrs. C. O. Bannister, Assoc.R.S.M., and H. J. Tabor, on "The Surface Appearance of Solders"; Mr. H. W. Greenwood, on "The Technical Assay of Zinc"; Mr. J. S. Glen Primrose, on "Notes on the Production of Pure Spelter"; Mr. E. L. Rhead, on "Some Causes of the Corrosion of Copper and Brass"; Professor C. A. Smith, M.Sc., on "The Elastic Breakdown of Ductile Materials"; Professor T. Turner, M.Sc., and Mr. M. T. Murray, M.Sc., on "The Copper-zinc Alloys—a Study of Volume Changes during Solidification." Applications for membership of the Institute of Metals to permit of election prior to the Manchester meeting should be sent in to the Secretary, Mr. G. Shaw Scott, M.Sc., Caxton House, Westminster, S.W., on or before Saturday, September 25.

PROPERTY SALES.

From the account of some property sales at Clapham Common and Wandsworth Common contained in the *Times*' weekly review of the property market, it does not appear that these districts would be a fruitful source for "increment value." For a freehold property with a large garden, 56 ft. frontage to the road, a carriage sweep, and with a well-fitted billiard-room, put up at the upset price 1,250*l.*, no bids were forthcoming. This property was stated to have cost over 3,000*l.*, and until a few months ago to have been mortgaged for 1,500*l.* A leasehold property, with some sixty years to run, at a ground rent of 36*l.* 5s., a corner site, with a large garden and motor-house, was withdrawn at 900*l.* "The community" appear to have brought "decrement" rather than "increment" to this suburban area.

NATIONAL PORTRAIT GALLERY.

Mr. Charles John Holmes, M.A., Slade Professor of Fine Art in the University of Oxford, has been appointed to be Director, Keeper, and Secretary of the National Portrait Gallery in succession to Mr. Lionel Cust, M.V.O., who will retire at the close of the current month. Mr. Cust, formerly of the Prints and Drawings Department, British Museum, succeeded the first Director, Sir George Scharf; Mr. Holmes is the editor of the *Burlington Magazine* and a member of the New English Art Club.

CUSTOM-HOUSE, KING'S LYNN.

In a communication to the *Times* Mr. F. D. Mackinnon directs attention to the disfigurement with modern brick chimneys, topped with chimney-pots and ranged around the central platform of the cupola, of the Custom-house at King's Lynn. The building was designed and erected for the Exchange, in 1681, by Henry Bell, a native of the town, and is a beautiful little example of the English Renaissance style. On the ground floor was an open loggia. There is an illustration in Professor Reginald Blomfield's book upon the history of Renaissance architecture in England.

WELSH MONUMENTS AND ANTIQUITIES.

The Royal Commission on the Preservation of Welsh Monuments and Antiquities have been engaged during some weeks upon a survey of the county of Montgomery, where the numerous relics are mostly of a prehistorical character; the counties of Denbigh and Flint will next be surveyed, and the results will be published as soon as they are completed for each county. Mr. Edward Owen is the Secretary to the Commission.

OPEN SPACES AND RECREATION-GROUNDS.

Some extensive improvements, with additions, have been effected at West Ham Park, E., at an expenditure of nearly 4,500*l.* Nine acres in and around the flower gardens are now levelled, a lake having an area of 2,000 sq. yds. has been made out of the swampy hollow, and several tennis-courts with a bowling-green have been laid out. In 1874 the Corporation of the City of London bought the park, now 77 acres in extent, for 25,000*l.*, towards which sum members of the Gurney family and the Corporation contributed 10,000*l.* apiece. The Corporation expended a further amount of 8,000*l.* upon the preparation of the ground, of which the maintenance costs 1,500*l.* per annum. A park and recreation-ground has been opened at Derby, at an outlay of 12,000*l.*, whereof about one-quarter was raised by public subscription to the Mayor's winter distress fund.

GARDEN CITY SCHEME, KNEBWORTH.

The development of the part of the Knebworth estate of the Earl of Lytton which adjoins Knebworth Station, on the Great Northern Railway, has been proceeding for some years on ordinary lines, but, following the example set at Letchworth and at other garden cities, Lord Lytton decided a year ago to have a proper town-planning scheme prepared for his estate. The planning was entrusted to Mr. Thomas Adams in consultation with Mr. Edwin L. Lutyens. It provides for wide main avenues, ample recreation spaces, and large gardens. The average number of houses per acre is less than ten. The property is intersected for about two miles by the Great North Road, and among other features of the plan is the diversion of this road so as to enable it to be widened to three times its present width and planted with an avenue of trees.

NATIONAL ASSOCIATION OF MASTER HOUSE PAINTERS AND DECORATORS.

The National Association of Master House Painters and Decorators of England and Wales opened their sixteenth annual convention in Sheffield on Tuesday. The opening proceedings were presided over by the Lord Mayor of Sheffield, and there were present Sir William Richmond, K.C.B., R.A., Mr James Puttrell (Sheffield), President, and all the principal officers of the Association, as well as many Sheffield members. The Lord Mayor, in extending a cordial welcome to the members of the Association on behalf of the city, took the opportunity of congratulating Mr James Puttrell on the high honour which had been conferred upon him in being elected President this year. The President of the Association (Mr. Puttrell) also gave a hearty welcome to members and friends of the Association, and especially welcomed their fellow craftsmen from the Netherlands. It seemed but a short time since the inception of their Association at Manchester, and they had all been agreeably surprised at its progress and undoubted usefulness. Their desire to cultivate public opinion in all matters pertaining to decorative art was their foremost object. He referred to the foundation of scholarships, the sending of students to Italy to study and specialise in colour, decoration, and other educative measures adopted by the Association. They wanted to provide workmen who would be a credit to the Association and to the nation. If they were to have a fair chance in this direction they must have their youths bound apprentices. The benefit would be mutual. As a Guardian of the Poor he had been surprised at the great number of labourers who had to seek assistance, men who had been allowed to drift on without any trade in their hands, who had become unemployed, and had eventually degenerated and become unemployable. This state of things might to some extent be remedied if there was a better system of apprentices all round. A better class of workmen would thus be secured, and there would be fewer of those who belonged to the unemployable type. Referring to technical education and Government requirements in regard to workmen, the President in regard to the latter said there was to be a liberal supply of soap and water, towel, and various other things so that the workman could wash himself. He thought these were matters in which the workman might very well be left to work out his own salvation. In conclusion, he contended that there was no trade more closely allied to the home life than theirs. It was within their power to make or mar the happiness of those who came within their power and influence. Let them then give thoughtful and happy treatment in home decoration, and not make it depressing by want of harmony. Sir William Richmond next declared the exhibition open. As to the general aspect of their exhibition, he would say that it was decidedly delightful and decidedly desirable. The object of the society which had impressed him most was their work for their youth—the manner in which they were providing for the future of the young people who were entering into their art. If they jogged along selfishly and made only their own path, grinding their corn and sowing none, they would be of no advantage to the nation. It was, therefore, that section which made provision for their youth in which they took the greatest interest. Turning to the exhibition proper, he would like, he said, to see a good deal more attention paid to lettering, and their students should be taken straight to the ancient Roman inscriptions, which were all more or less absolute works of art. He would also like to see more attention paid to the colouring of the letters on the ground. He remembered the time when one entered a drawing-room they were confronted by an extremely disagreeable looking lion lying before their path, in front of the fireplace, and just where they wanted to stand and warm themselves. But that style had been exploded, and these sham wild things had disappeared from the carpet. The distasteful and unhealthy arrangement of rep curtains had also gone. The fact was, people were becoming more educated, and were finding that light was above all things the most beneficent thing Providence had given. He was delighted to see that since his visit six or seven years ago that abominable pall of disgusting smoke which overhung Sheffield was not so thick over their city as it formerly was. He trusted that it would still become thinner, and that the people of Sheffield would be able to keep their houses cleaner and brighter, and would be a happier and healthier people even than they were now. On the motion of Mr. Sibthorne (Dublin), seconded by Mr. Peters (Sheffield), Sir William Richmond was thanked, and also the Lord Mayor for presiding was adopted, on the motion of Mr. A. J. Teall (past President), seconded by Mr J. Standall (Sheffield). At the afternoon session the General Secretary (Mr. W. G. Sutherland) read the annual report, which showed that since the last meeting they had lost nineteen members by death and resignation, but had added to their roll thirty-one new direct members and two associations. The income from subscriptions was the highest yet recorded, reaching £335 19s. 10d. The report was adopted. Later in the afternoon the members of the Association and friends, including numerous ladies, were received at the Town Hall by the Lord Mayor, and were entertained to afternoon tea.

Patents.

APPLICATIONS PUBLISHED.*

16,946 of 1908.—Udo Ribau and Ede von Mandics: Sliding and pivoting windows.

17,002 of 1908.—William Herbert Percy: Reinforced concrete articles, structures, and structural members.

17,758 of 1908.—Reginald Stanley: Machines for moulding tiles.

17,832 of 1908.—Anton Schulz: Appliances for use in connexion with the laying of planks for floors.

23,945 of 1908.—John Stoddart: Fittings for hinging windows.

24,195 of 1908.—Arthur Henry Barker: Combined fireplace and boiler.

732 of 1909.—George Arthur Williams: Lock for sliding doors.

3,334 of 1909.—Edward D'Arcy and Alexander Roberts: Step-ladders.

4,115 of 1909.—John Jeffreys, Edgar Herring, and Percival Michael Brankstone Grenville: Ventilating radiators for heating buildings and the like.

6,287 of 1909.—T. & R. Boote, Ltd., and Charles Edmund Boote: Domestic fireplaces.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 28.—**Lyminge.**—SEWAGE DISPOSAL.—The Elham R.D.C. invite schemes and estimates for the disposal of the sewage of Lyminge Parish. Mr. R. Lonergan, Clerk, 11, Cheriton-place, Folkestone.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l*., 50*l*., and 25*l*. are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l*. 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l*., 100*l*., and 50*l*. for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l*. is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l*. and 5*l*. respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l*., 30*l*., and 20*l*. Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l*., 150*l*., and 100*l*. for second, third, and fourth places. Particulars on receipt of a deposit of 2*l*. 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

NO DATE.—**Bognor.**—PIER IMPROVEMENTS.—The Bognor Pier Company, Ltd., invite designs or suggestions for improvements on the pier. Apply Mr. G. W. Chitts, Secretary, 50, High-street, Bognor.

NO DATE.—**Warrington.**—PUBLIC ELEMENTARY SCHOOL.—The Warrington Education Committee invite competitive plans for the erection of a Public Elementary School. A copy of the conditions of competition, etc., together with a plan of the site, may be obtained on payment of 1*l*. 1s. Mr. J. Moore Murray, Secretary and Director, Education Office, Sankey-street, Warrington.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 20.—**Adlington.**—SCHOOL BUILDINGS.—The Lancashire Education Committee invite tenders for the erection of a new elementary school for 352 scholars and a manual instruction and cookery block at Adlington, near Chorley. Plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l*.

SEPTEMBER 20.—**Bury.**—SHOP FRONTS.—The Corporation of Bury invite tenders for the rebuilding of the fronts of shops, Nos. 60, 62, and 64, Bolton-street, Bury. Plans may be seen, and specifications, together with forms of tender, obtained, upon application to Mr. Arthur W. Bradley, A.M.Inst.C.E., Borough Engineer and Surveyor, Bank-street.

SEPTEMBER 20.—**Glamorgan.**—SCHOOL ADDITIONS.—The Glamorgan C.C. invite tenders for the following, viz.:—(1) Additions to the Council school at Porthcawl; (2) additions to the Council school at Penybank, Gellygaer; (3) new laboratories, cloak-room, etc., at the County school at Bridgend; (4) alterations to the Skewen Lower Council school, near Neath. The plans, specification, etc., of all the works may be seen or obtained at the offices of Mr. T. Mansel Franklen, Clerk of the County Council, Glamorgan C.C. Offices, Westgate-street, Cardiff.

SEPTEMBER 20.—**Portsmouth.**—ALTERATIONS AND ADDITIONS.—Tenders are invited for alterations and additions to a portion of the north-east corner of the basement floor of the Town Hall to provide accommodation for the Borough Treasurer's Department. Specification, etc., may be seen, and a form of tender obtained, at the Borough Engineer's Office at the Town Hall.

SEPTEMBER 20.—**Smethwick.**—DEPÔT BUILDINGS.—The Corporation of Smethwick invite tenders for the erection of various buildings at their depôt in Rolfe-street, Smethwick. Plans and specifications can be seen, and bills of quantities obtained, at the office of Mr. C. J Fox Allin, Borough Surveyor, Council House, Smethwick, during office hours. Applications for quantities must be accompanied with a cheque to the value of 3*l*. 3s.

SEPTEMBER 21.—**Abberton.**—BRIDGE.—Lexden and Winstree R.D.C. invite tenders for building a new bridge at Abberton. Plans and specifications can be seen by appointment at the office of Mr. John Ennals, Surveyor, Lexden.

SEPTEMBER 21.—**Bangor.**—HOSPITAL.—Tenders are required for the erection of the Bangor new Hospital. Schedule of quantities, etc., can be obtained from Mr. S. C. Hunter, Scottish Provident-buildings, on payment of 2*l*. 2s., and plans and specification at the office of Messrs. Young & Mackenzie, Scottish Provident-buildings, Belfast.

SEPTEMBER 21.—**Sunderland.**—ALTERATIONS.—Tenders are invited for proposed alterations to the offices of the Sunderland Gas Company, Fawcett-street. Plans may be seen, and quantities obtained, at the office of the architects, Messrs. Wm. & T. R. Milburn, FF.R.I.B.A., 20, Fawcett-street, on deposit of 2*l*. 2s.

SEPTEMBER 22.—**Caerphilly.**—LODGING-HOUSE AND SHOPS.—Tenders are invited for lodging-house and two shops, Caerphilly. Quantities obtainable by deposit of 1*l*. 1s. from Mr. John H. Phillips, F.R.I.B.A., architect, 7, Pembroke-terrace, Cardiff.

SEPTEMBER 23.—**Scunthorpe.**—INSTITUTE.—Tenders are invited for the erection of a Primitive Methodist Institute at Scunthorpe. Plans and specifications may be seen at the office of Mr. W. H. Buttrick, P.A.S.I., architect, Scunthorpe.

SEPTEMBER 23.—**Swansea.**—ELECTRIC POWER STATION.—The Swansea Harbour Trustees invite tenders for the erection of an electric power station on the eastern side of the Prince of Wales Dock Lock. Drawings and specification may be seen, and form of tender obtained, at the office of the Trustees' Engineer, Mr. A. O. Schenk, M.Inst.C.E., Harbour Offices, Swansea.

SEPTEMBER 24.—**Glasthule, Co. Dublin.**—SCHOOLS.—Tenders are invited for the erection of new schools, Glasthule, Co. Dublin, for the Very Rev. Canon Murray, P.P. Bills of quantities may be obtained fom Messrs. Mumby & O'Rourke, surveyors, 15, College-green, on lodgment of a fee of 2*l*. 2s. Mr. J. P. Wrenn, M.R.I.A.I., architect, 16, Nassau-street, Dublin.

SEPTEMBER 24.—**Kingussie.**—RAILWAY STATION IMPROVEMENTS.—The Directors of the Highland Railway Company invite tenders for the various works in the erection of waiting-rooms on up platform, Kingussie Station. Plans may be seen with Mr. William Roberts, the Company's Engineer-in-Chief, at Inverness, or with the Stationmaster at Kingussie; and specifications and schedules of quantities can be obtained from the Engineer-in-Chief.

SEPTEMBER 25.—**Berkhamsted.**—JUNIOR SCHOOL AND HALL.—The Governors of the Berkhamsted Grammar School invite tenders for the erection of a new junior school and hall. Plans and specifications can be seen, and any necessary information obtained from Messrs. G. H. & H. A. Rew, architects, Berkhamsted, from whom quantities and form of tender can also be obtained.

SEPTEMBER 25.—**New Elgin.**—COTTAGE.—Tenders are invited for the various works in connexion with a cottage to be erected at New Elgin. Plans and specifications may be seen with Mr. John Wittet, architect, Elgin.

SEPTEMBER 25.—**St. Breward.**—CHINA CLAY WORKS.—The Directors of the North Cornwall China Clay Company, 1908, Ltd., invite tenders for the erection of a new china clay kiln, sheds, tanks, etc., in the Parish of St. Breward, Cornwall, adjoining the London and South-Western Railway near Wenford Bridge Station. Plans and specifications may be seen on application to Captain R. M. Richards, Row, St. Breward, or at the office of Mr. T. H. Andrew, Engineer, Market-hill, St. Austell.

SEPTEMBER 28.—**Portsmouth.**—HOSPITAL STAFF BUILDINGS.—Tenders are invited for the erection of a block of buildings for the accommodation of the staff within the grounds of the Infectious Diseases Hospital, Milton. A copy of the bills of quantities, with forms of tender, can be obtained on application to Mr. G. Hammond Etherton, Town Clerk, the Town Hall, Portsmouth, on payment of 2*l*. 2s., and the plans, etc., can be seen at the Borough Engineer's Offices, at the Town Hall, Portsmouth, where any further particulars can be obtained.

SEPTEMBER 29.—**Calstock.**—CHAPEL ALTERATIONS, ETC.—The Trustees of the Calstock Wesleyan Chapel invite tenders for alterations and redecorating to the chapel and schoolroom. Drawings can be seen, and a copy of the specifications obtained, on application to Mr. A. Lawry, Tharsis Villa, Calstock, on payment of 1*l*. 1s.

* SEPTEMBER 29.—**Leicester.**—LABOUR EXCHANGE.—The Commissioners of H.M. Works, etc., invite tenders for erection of a labour exchange at Leicester. See advertisement in this issue for further particulars.

SEPTEMBER 30.—**Canterbury.**—ENLARGEMENT, ETC.—Tenders are invited for enlargements and alterations at the St. Augustine's Sessions House, Longport-street, Canterbury. Plans and specification can be inspected, and the bill of quantities, etc., obtained, at the office of the County Architect, 86, Week-street, Maidstone, on payment of a deposit of 2*l*. 2s.

SEPTEMBER 30—**Heckmondwike.**—SCHOOL.—The West Riding Education Committee invite whole or separate tenders for the builder, joiner, slater, plasterer, plumber, painter works in connexion with Heckmondwike new School. Plans may be seen, and specifications, with quantities, obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l*. in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

SEPTEMBER 30.—**Portadown.**—DISPENSARY AND RESIDENCE.—The Lurgan Board of Guardians invite tenders for the erection and completion of a new Dispensary and Medical Officer's residence in Thomas-street, Portadown. Plans and specification may be seen at the office of the architect, Mr. J. W. Walby, Portadown. Bills of quantities, prepared by Messrs. M'Carthy & Brooks, surveyors, Scottish Provident-buildings, Belfast, may be obtained from Mr. James Calvert, Clerk of the Union, Clerk's Office, Workhouse, Lurgan, upon payment of 1*l*. 1s.

SEPTEMBER 30.—**Selby.**—SECONDARY SCHOOL IMPROVEMENTS.—The West Riding Education Committee invite whole or separate tenders for additions and alterations to Selby Secondary School. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield A deposit of 1*l*. in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

OCTOBER 1.—**St. Andrews, Fife.**—RECONSTRUCTION OF LIFEBOAT HOUSE.—The Committee of Management of the Royal National Lifeboat Institution invite tenders for the reconstruction and enlargement of the lifeboat house at St. Andrews, in the County of Fife, N.B. Plans and specification may be inspected on application to the Local Hon. Secretary, Mr. David W. Rusack, Marine Hotel, St. Andrews, or at the office of the Engineer and Architect to the Royal National Lifeboat Institution, Mr. W. T. Douglass M.Inst.C.E., 15, Victoria-street, Westminster, London, S.W. Copies of the bills of quantities and form of tender may be obtained on application to the Engineer and Architect, accompanied by a deposit of 1*l*., who will also supply copies of certain of the plans at a cost of 2s. (non-returnable).

* OCTOBER 4.—**London.**—SOLDIERS' QUARTERS.—The Secretary of State for War invites tenders for two warrant officers' quarters and three "A" and six "C" married soldiers' quarters (in flats) at Wellington Barracks. See advertisement in this issue for further particulars.

OCTOBER 6.—**Middleton.**—SECONDARY SCHOOL.—The Middleton Education Committee invite tenders for the erection of a secondary school in Rectory-street, Middleton. Plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 6, Ribblesdale-place, Preston, by payment of a deposit of 3*l*.

* OCTOBER 11.—**Manchester.**—SCHOOL.—The Manchester Education Committee invite tenders for erection of the Brookdale Park Municipal School, Newton Heath, Manchester. See advertisement in this issue for further particulars.

NOVEMBER 9.—**Antwerp.**—DRY DOCK.—The College des Bourgmestre et Echevins invite tenders for the construction of a dry dock and quay wall at Quai Est (No. 61) of the Lefebvre Basin. Estimate, 4,361,000 francs. Deposit, 500,000 francs. Plans and specifications can be seen at Room 4 and at the Secretary's Office, Hotel de Ville. Price of specification, 5 francs.

NO DATE.—**Ballyholme, Co. Down.**—VILLAS.—Tenders are invited for the erection of two semi-detached villas, Ballyholme, Bangor, County Down, for Mrs. John Byrne. Particulars of the work can be obtained at the offices of Messrs. Moore & Flanigan, architects, 35, Royal-avenue, Belfast.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NO DATE. — **Clones.**—LICENSED PREMISES.—Tenders are invited for the rebuilding of licensed premises, Fermanagh-street, Clones, for Mr. P. Murphy. Plans, etc., may be obtained at the offices of Mr. J. V. Brennan, C.E., architect, Belfast Bank-chambers, Belfast.

NO DATE. — **Harton.** — ALTERATIONS, ETC. — Tenders are invited for alterations and additions to the Harton branch of the Boldon Co-operative Society, Ltd. Quantities and particulars may be obtained on application to Mr. Charles W. Bell, architect, 17, Norfolk-street, Sunderland.

NO DATE.—**Hitchin.**—HOUSES.—Tenders are invited for the erection of a pair of semi-detached houses in Fishpond-road, Bearton Fields Estate. Plans, etc., can be seen by appointment with Mr. A. Fowler, The Lodge, Hitchin.

NO DATE. — **Kessingland.**—SCHOOL IMPROVEMENTS. —For the erection of certain alterations and additions to schools at Kessingland. Names to Mr. W. J. Roberts, architect, Lowestoft.

NO DATE.—**Meir.**—RESIDENCES.—For the erection of two residences in Weston-road, Meir. Names to Mr. W. A. Baynes, architect, Fountain-chambers, Hanley.

NO DATE.—**Swansea.**—PREMISES.—Tenders are invited for the erection of new premises, 19, Castle-street, Swansea, for Messrs. Masters & Co. Copies of the bills of quantities can be obtained from Mr. E. C. Morgan Willmott, A.R.I.B.A., architect, 69, Mansel-terrace, Swansea, upon receipt of a deposit of 2*l.* 2*s.*

NO DATE. — **Truro.**—FERRO-CONCRETE WAREHOUSE.— For the construction of ferro-concrete warehouse at Malpas-road, Truro. Names to the Western Counties Agricultural Co-operative Association, Ltd., Millbay-road, Plymouth.

NO DATE. — **Witcombe.** — SCHOOL IMPROVEMENT.— Alterations and additions at Witcombe School, for Mr. W. F. Hicks-Beach. Particulars may be obtained from Mr. R. S. Phillips, architect, Gloucester.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 20.—**Monaghan.**—RAILWAY COAL STORE. —The Directors of the Great Northern Railway Company (Ireland) invite tenders for the construction and erection of a coal store at their Monaghan Station, with corrugated-iron roof, sides, etc., and steel framing and wooden roof principals. Drawings and specification may be seen at the office of Mr. W. H. Mills, Engineer in-Chief, Amiens-street Terminus, Dublin, or copies of them at the office of the District Engineer, Belfast, and forms of tender can be obtained at these offices on payment of 1*s.* each (not returnable).

SEPTEMBER 20.—**Salford.**—TRAMWAY RAILS.—Salford Tramways Committee invite tenders for the supply and delivery of 500 tons of steel tramway rails. Specification, etc., may be obtained from the General Manager, 32, Blackfriars-street, Salford.

SEPTEMBER 21. — **London.**—METALS.—The Directors of the Bombay, Baroda, and Central India Railway invite tenders for the supply of metals. Specification, etc., can be obtained on payment of 1*l.* 1*s.* each (which will not be returned) from Mr. C. Grommelin, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C.

SEPTEMBER 21. — **Manchester.**—TRAMWAY RAILS.— The Tramways Committee of the Manchester Corporation invite tenders for the supply and delivery of steel girder tramway rails. Specifications and forms of tender may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester, on deposit of 1*l.* 1*s.*

OCTOBER 4.—**Glasgow.**—LIFTS.—Glasgow Corporation invite offers for supplying and fitting up the following lifts required for the new Mitchell Library at North-street, viz.:—(1) One electric passenger lift; (2) three electric book lifts; and (3) three hand book lifts. Specifications and forms of tender may be had on application at the office of Mr. W. B. Whitie, 219, St. Vincent-street.

MISCELLANEOUS.

SEPTEMBER 20.—**Alnwick.**—CATTLE PENS.—The Alnwick U.D.C. invite tenders for construction of twenty-two additional store cattle pens, in creosoted timber, in the Cattle Market at Wagon Way. Plans, etc., to be seen at U.D.C. Offices, Green Batt. Mr. Geoffrey Wilson, Town Surveyor.

SEPTEMBER 21. — **Rhondda.** — SCAVENGING CARTS. — Rhondda U.D.C. invite tenders for supplying and delivering eight scavenging carts. Particulars can be obtained from Mr. W. J. Jones, Engineer and Surveyor, Council Offices, Pentre.

SEPTEMBER 21. — **Scunthorpe.** — ADIT.—The Scunthorpe U.D.C. invite tenders for driving an adit at the Risby Waterworks, together with certain other small works. Particulars to be seen at the office of Mr. C. Curtis Gray, Engineer and Surveyor to the Council, Home-street, Scunthorpe.

SEPTEMBER 23. — **Manchester.** — CARTAGE.—The Manchester Corporation Gas Committee invite tenders for the carting of coke. General conditions of contract and form of tender may be obtained on application (in writing only) to Mr. C. Nickson, Superintendent, Gas Department, Town Hall, Manchester.

SEPTEMBER 23.—**Reading.**—DEMOLITION.—Berkshire C.C. invite tenders for the demolition and removal of the existing premises, Nos. 26, 28, and 30, The Forbury, Reading. Particulars and form of tender may be obtained from Mr. J. F. Hawkins, County Surveyor, Bank-chambers, Cross-street, Reading.

SEPTEMBER 27.—**Belfast.**—ELECTRIC LIGHTING.—The Committee of Management of Belfast District Asylum invite tenders for electric lighting installations in new asylum buildings on the Purdysburn Estate. Specifications can be obtained, and drawings seen, at the offices of Messrs. Watt, Tulloch, & Fitzsimons, 77A, Victoria-street, Belfast, on payment of 10*s.*

SEPTEMBER 27. — **Selkirk.**—SKATING-RINK FLOOR.— Offers are wanted for relaying floor of Victoria Hall, Selkirk, with maple wood, suitable for purposes of roller skating. Floor measurement, 387 sq. yds. Specifications are in the hands of Mr. John Pollok, Town Clerk, Selkirk.

SEPTEMBER 27. — **Stepney.** — REMOVAL OF OLD MATERIAL.—The Stepney B.C. invite tenders for the removal of old tins, galvanised buckets, baths, and other similar waste material from the Council's depôts, wharves, and other premises. Further information may be obtained upon application to the Borough Engineer, Mr. M. W. Jameson, A.M.Inst.C.E., at No. 15, Great Alie-street, Whitechapel, E., between 11 a.m. and 12 noon.

✱ SEPTEMBER 28. — **London, E.**—PLASTERING.—The Managers of the Poplar and Stepney Sick Asylum District invite tenders for certain plastering work in the "G and H" Ward at the Sick Asylum, Devons-road, Bromley-by-Bow, E. See advertisement in this issue for further particulars.

SEPTEMBER 28. — **Woodford.** — STEAM ROLLING AND SCARIFYING.—Woodford U.D.C. invite tenders for the hire of steam rollers and scarifying. Particulars and forms of tender may be obtained from Mr. William Farrington, Surveyor to the Council, Council Offices, Woodford Green.

OCTOBER 1. — **Govan.**—BLINDS.—The Govan Combination P.C. invite tenders for window blinds at new Poorhouse block and in Governor's and Doctor's houses, Merryflatts, Govan. Specification and schedule can be obtained at the office of the architects, Messrs. Thomson & Sandilands, 4, Jane-street, Blythswood-square.

OCTOBER 1. — **Maidstone.** — DISINFECTANTS. — The Maidstone B.C. invite tenders for the supply of disinfectants Forms of tender and all information can be obtained from the Sanitary Inspector, Health Department, Fair Meadow, Maidstone.

OCTOBER 9.—**Shropshire.**—DREDGING.—Tenders are invited for cleaning, deepening, widening, and diverting a portion of the River Rea, Asterley and Minsterley Brooks. Plans and specifications may be inspected at the office of Messrs. T. Hickman & Son, Pride-hill-chambers, Shrewsbury, or copies may be obtained upon payment of a deposit of 2*l.* 2*s.*

OCTOBER 14. — **London.** — MILD STEEL GALVANISED SHEETS, ETC.—The Egyptian War Department invite tenders for very mild steel galvanised sheets and brass and iron buckles and rings. Particulars from Lieut.-Col. Western, Queen Anne's-chambers, Westminster.

PAINTING, etc.

SEPTEMBER 20. — **Horncastle.** — PAINTING. — Horncastle Guardians invite tenders for painting at the Workhouse and the Isolation Hospital. Particulars may be obtained on application to the Master of the Workhouse.

SEPTEMBER 20. — **Mountain Ash.** — PAINTING AND GRAINING.—Tenders are invited for the painting and graining of about 300 houses in and near Mountain Ash. Specification and all other particulars may be obtained on application to Mr. G. A. Evans, incorporated accountant, Mountain Ash.

SEPTEMBER 21. — **Cheltenham.** — PAINTING. — The Gloucester Co-operative and Industrial Society, Ltd., invite tenders for painting, etc., at their branch, Nos. 238 and 238A, High-street, Cheltenham. Specifications can be seen at the offices of the society in Gloucester and Cheltenham during office hours.

SEPTEMBER 23. — **Cardiff.**—PAINTING.—The Corporation of Cardiff invite tenders for painting the Clarence Bridge (over the River Taff). Specification may be seen, and forms of tender obtained, on application at the office of the City Engineer, Mr. W. Harpur, M.Inst.C.E., City Hall, Cardiff.

SEPTEMBER 24.—**Derby.**—PAINTING, ETC.—The Visiting Committee of the Derby County Asylum invite tenders for the painting and decorating of three wards, and distempering and limewashing. Specifications may be obtained from Mr. A. McWilliams, Resident Engineer.

SEPTEMBER 27.—**Lancaster.**—PAINTING.—The Visiting Committee of the County Lunatic Asylum, Lancaster, invite tenders for the exterior painting of certain portions of the Asylum. Forms of tender and full particulars may be obtained on application to Mr. J. R. Wilson, Clerk and Steward, Clerk's Office.

NO DATE. — **East Murton.** — DISTEMPERING AND VARNISHING.—Tenders invited for the distempering of walls and varnishing of woodwork of the interior of East Murton St. Joseph's R.C. School. Official forms and particulars may be obtained on application to Rev. Jos. W. Campbell, Easington, Castle Eden, S.O.

NO DATE.—**Fenton.**—PAINTING.—The Fenton U.D.C. invite tenders for painters' work required to be done at the Fenton Town Hall. Names to Mr. S. A. Goodall, Surveyor to the Council, Town Hall, Fenton.

NO DATE. — **Stalybridge.** — PAINTING.—The Stalybridge, Hyde, Mossley, and Dukinfield Tramways and Electricity Board invite tenders for painting all wood and ironwork outside the General Offices, Waterloo-road, Stalybridge. Full particulars may be obtained on application at the offices of Mr. Frank Schofield, Commercial Manager, General Offices, Waterloo-road, Stalybridge.

ROADS, SANITARY, AND WATER WORKS.

SEPTEMBER 20.—**Leeds.**—PAVING AND FLAGGING, ETC. —The Highways Committee invite tenders for the paving and flagging of Headingley-avenue, Canterbury-drive, and Winston-gardens; also for the re kerbing, rechannelling, and pitching of the improvement in Otley-road. Drawings may be seen at the City Engineer's Office, Municipal Buildings, and forms of tender, etc., may be obtained on application at the Highways Office, 155, Kirkstall-road, Leeds.

SEPTEMBER 20.—**Manchester.**—ROAD WORKS.—The Paving, Sewering, and Highways Committee of the Manchester Corporation invite tenders for the sewering, excavating, forming, ballasting, cindering, and fencing of Charlestown-road Extension, Blackley. Forms of tender may be obtained on application to the Paving, etc., Department (Surveyors' Office), Town Hall, Manchester.

SEPTEMBER 20.—**Windsor.**—PRIVATE STREET WORKS. —The Windsor R.D.C. invite separate tenders for making-up Rays-avenue, Jutland-lane, Forest-lane, St. Leonard's-place, Albert-place, and Rose's-lane, situate in the Parish of Clewer. Plans and specifications may be seen at the office of Mr. J. E. Gale, Clerk, 3, Sheet-street, Windsor, during office hours.

SEPTEMBER 21.—**Amble.**—PRIVATE STREET WORKS.— The Amble U.D.C. invite tenders for making-up Wellwood Back-lane West and approach to Northumbria-terrace. Plans, etc., can be seen at the office of Mr. Wm. Gibson, Surveyor, Council Offices, Queen-street, Amble.

SEPTEMBER 21.—**North Shields.**—STREET WORKS.— Tenders are invited for excavating, laying a rubble foundation, and tar macadam in Blanchland-terrace, and for channelling in Preston-avenue, North Shields. Plan, etc., may be seen at the office of Mr. John F. Smillie, Borough Surveyor.

SEPTEMBER 21. — **Salford.** — PAVING, ETC.—Tenders are invited for paving and completing certain streets. The plans may be seen, and forms of tender, with quantities, obtained, at the Borough Engineer's Office, Town Hall, Salford.

SEPTEMBER 23. — **Ilchester.** — SEWAGE DISPOSAL.— Yeovil R.D.C. invite tenders for providing and laying sewer and (provisionally) for the construction of a small sewage tank and filters in the Parish of Ilchester. Drawings and specification may be seen at the office of Mr. J. E. Rodber, Clerk, 30, Kingston, Yeovil, where a copy of the bill of quantities may be obtained on deposit of 1*l.*

SEPTEMBER 24.—**Edinburgh.**—PAVING.—The Edinburgh Corporation (Roads Department) invite estimates for whinstone sett paving in the carriageway of Millar-place. Plan may be seen, and schedules of quantities, etc., obtained, on application to the City Road Surveyor, City Chambers, Edinburgh.

SEPTEMBER 27.—**Dagenham.**—DRAIN CONNEXIONS.— The Romford R.D.C. invite tenders for the construction of drain connexions to the sewers in the Parish of Dagenham. Specification may be seen, and form of tender obtained, upon application to the surveyor, Mr. W. J. Grant, Victoria-chambers, Romford.

SEPTEMBER 27. — **Wantage.** — STEAM ROLLING AND SCARIFYING.—The Highways Committee of the Wantage U.D.C. invite tenders for the steam rolling and scarifying required in their district. Further particulars may be obtained from Mr. W. Hanson, Surveyor, Town Hall, Wantage.

✱ SEPTEMBER 28. — **Neasden.** — ROAD-MAKING.—The Willesden D.C. invite tenders for certain road-making and paving works in Prout-grove, Neasden. See advertisement in this issue for further particulars.

SEPTEMBER 28.—**Sowerby Bridge.**—STREET WORKS. —Sowerby Bridge U.D.C. invite tenders for labour required in making-up Upper Fountain-street, etc. Forms of tender, quantities, and full particulars may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

✱ SEPTEMBER 28. — **Willesden.** — DRAINAGE.—The Willesden D.C. invite tenders for constructing drainage intercepting sewer. See advertisement in this issue for further particulars.

SEPTEMBER 30. — **Camborne.** — RESERVOIR.—The Camborne Water Company invite tenders for the construction of an open service reservoir, 1,000,000 gallons capacity; a water tower, 20,000 gallons capacity; and sundry other works (Contract No. 4). Plans may be seen, and copies of the specification, etc., obtained, at the offices of the Company, Camborne, between 10 a.m. and 4 p.m. on deposit of 3*l.* 3*s.* Mr. John Champion, Secretary, Camborne.

SEPTEMBER 30.—**Leamington Spa.**—ROAD WORKS. —The Corporation of Royal Leamington Spa invite tenders for making extensions to two roads. Plans and specification may be seen at the office of their Engineer at the Town Hall.

OCTOBER 2. — **Sandwich.** — WATER MAINS.—Eastry R.D.C. invite tenders for laying water mains from the boundary of the Borough of Sandwich to the Hamlet of Richborough. Specifications can be obtained from, and a plan of route seen at the office of Mr. Fred. S. Cloke, Clerk to the Council, Salisbury House, Strand-street, Sandwich.

OCTOBER 2. — **Swinton.** — EFFLUENT TANK.—The Swinton and Pendlebury U.D.C. invite tenders for the construction of an effluent tank at Swinton Sewage Works. Plans may be seen, and forms of tender obtained, on application to Mr. Henry Entwisle, Council Offices, Swinton.

OCTOBER 4. — **Castleford.** — FERRO-CONCRETE LINING TO RESERVOIR.—The Castleford U.D.C. invite tenders for the construction of a ferro-concrete lining for their reservoir at Redhill. Names, accompanied by a cheque deposit of 5*l.*, to the engineers, Messrs. D. Balfour & Son, 3, St. Nicholas-buildings Newcastle-on-Tyne, not later than September 18.

OCTOBER 4.—**Salisbury.**—PRIVATE STREET WORKS.— The T.C. invite tenders for executing certain works in Campbell-road. Plans, etc., may be seen, and bill of quantities with form of tender obtained, on application to Mr. W. J. Goodwin, A.M.Inst.C.E., City Engineer and Surveyor, Municipal Offices, Salisbury.

OCTOBER 5.—**Aldershot.**—MAKING-UP.—The Aldershot Council invite tenders for the making-up of Eland-road. Plans and specifications may be seen, and full particulars obtained, on application to Mr. Fred. C. Uren, A.M.Inst.C.E., Surveyor to the Council, Municipal Buildings, Aldershot.

OCTOBER 6. — **St. Nicholas-at-Wade.** — WATER MAIN.—Isle of Thanet R.D.C. invite tenders for providing and laying a water main (with fittings) from near Monkton Church to and through the Village of St. Nicholas-at-Wade, according to plans and specifications which may be seen at the office of the Surveyor at Birchington.

OCTOBER 7. — **Heston and Isleworth.** — PRIVATE STREET WORKS.—The U.D.C. of Heston and Isleworth invite tenders for the making-up of Albert-road, Hartham-road, Highfield-road, Newton-road, Percy-road, St. Mary's-crescent. Plans, etc., may be seen,

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

and bills of quantities and form of tender obtained from Mr. J. G. Carey, Engineer and Surveyor to the Council, Council House, Hounslow, on payment of the sum of 1*l.* 1s.

No DATE.—**London.**—PAVING.—Tenders are invited for the relaying of about 1,900 ft. run of 7-ft. 6-in. stone paving along Crawford-avenue and Copland-avenue, upon the Harrowdene Estate. For specification and form of tender apply to Messrs. Walton & Lee, surveyors, 10, Mount-street, W.

No DATE.—**Southampton.**—ROAD-MAKING.—Tenders are required for road-making and drainage works for the development of "Clarence Lodge" Building Estate, High-street, Shirley, Southampton. Quantities and other particulars can be obtained on payment of 2s. 6d. (not returnable) on application to Mr. W. Burrough Hill, surveyor, 81, Above Bar, Southampton.

STONES, MATERIAL, AND STORES.

SEPTEMBER 21.—**Cowes.**—PORTLAND CEMENT.—The Cowes U.D.C. invite tenders for the supply of Portland cement. Form of tender may be obtained upon application to Mr. John W. Webster, Surveyor and Water Engineer to the Council.

SEPTEMBER 21.—**Glasgow.**—MATERIALS.—The Corporation invite tenders for supplying the materials to the Gas Department. Specifications and forms of tender may be obtained, and samples examined, on application to Mr. Alex. Wilson, Gas Engineer, 45, John-street, Glasgow.

SEPTEMBER 23.—**Hatton.**—BUILDING MATERIALS.—The Committee of Visitors of the Warwick County Lunatic Asylum, Hatton, near Warwick, invite tenders for the supply of building materials. Forms of tender may be obtained, and samples of materials used can be seen, at the Asylum.

SEPTEMBER 23.—**Preston.**—STORES.—Tenders are invited for the supply of stores to the County Asylum, Whittingham, Preston. Forms of tender, with particulars of quantities, etc., may be obtained from Mr. Thomas Dilworth, Clerk and Steward.

SEPTEMBER 28.—**Sowerby Bridge.**—ROAD MATERIALS.—The Sowerby Bridge U.D.C. invite tenders for setts, flags, and kerbs required in making up Upper Fountain-street, etc. Forms of tender and full particulars may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

SEPTEMBER 28.—**Woodford.**—BROKEN GRANITE.—The Woodford U.D.C. invite tenders for the supply of broken granite. Particulars and forms of tenders may be obtained from Mr. William Farrington, Surveyor to the Council, Council Offices, Woodford Green.

SEPTEMBER 30.—**Bideford.**—BROKEN GRANITE AND GRANITE KERB.—The Corporation of Bideford invite tenders for the supply of broken granite and granite chippings. Forms of tender and further particulars can be obtained on application to Mr. W. B. Seldon, Town Clerk.

OCTOBER 2.—**Kesteven.**—GRANITE, GRAVEL, ETC.—The Highways Committee of the Kesteven C.C. invite tenders for the supply of granite, slag dust, and gravel. Forms of tender can be obtained from Mr. W. B. Purser, County Surveyor's office, Grantham.

OCTOBER 2.—**Lymington.**—GRANITE, ETC.—Lymington T.C. invite tenders for the supply and delivery of about 220 tons of granite or basalt, broken to 2-in. gauge, and about 25 tons of granite chippings, broken to ¾-in. gauge. Tenders for steam rolling and scarifying (particulars of which can be obtained upon application to the Borough Surveyor) are also invited. Mr. J. Davis Rawlins, Town Clerk, Town Clerk's office, Lymington, Hants.

* OCTOBER 4.—**London.**—GENERAL STORES.—The Directors of the Metropolitan Railway Company invite tenders for the supply of general stores during twelve months. See advertisement in this issue for further particulars.

OCTOBER 11.—**Todmorden.**—GRANITE SETTS.—Todmorden B.C. invite tenders for the supply and delivery of about 3,000 tons of granite setts. Specification and form of tender may be obtained on application to Mr. J. A. Heap, Borough Engineer.

* OCTOBER 12.—**London.**—GRAVEL.—The London C.C. invite tenders for supply of fine binding gravel at various parks, gardens, and open spaces. See advertisement in this issue for further particulars.

NO DATE.—**Croston.**—GRANITE MACADAM.—The Croston U.D.C. invite tenders for the supply of 250 tons of 2½-in. Welsh granite macadam, for road-making purposes. Mr. T. Whittle, Council Offices, Croston.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*INSTRS. IN WORKSHOP DRAWING AND CALCULATIONS	London C.C.	See advertisement in this issue	Sept. 24

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDING MATERIALS AND FITTINGS OF MANSION, STREATHAM—On the Premises	Hooker & Webb	Sept. 20
*FREEHOLD SHOP, ISLINGTON—At the Mart	T. B. Westacott	Sept. 23
*SLATE TILE AND BRS' MERCHANTS' STOCK, FINSBURY PARK, N.—On the Premises	H. W. Smith	do.
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sims	Sept. 29
*FREEHOLD BUILDING SITE, DALSTON—At the Mart	W. Stevens	Sept. 30
*FREEHOLD HOUSE, ETC., FRIERN, BARNET—Railway Hotel, New Southgate	Chas. Sparrow & Son	Oct. 4
*FREEHOLD BUILDING LAND, EWELL, SURREY—At the Mart	Robt W. Fuller, Moon, & Fuller	do.
*FREEHOLD BUILDING SITES, ETC., SURREY—At the Mart	Breadmore & Webb	Oct. 5

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 4 6	" at railway depôt,
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.
	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "
	s. d.	
Ancaster in blocks	1 10	per ft. cube deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "

SLATES (*continued*).

In. In.	£ s. d.	
18×10 best Eureka unfading green	13 5 0	per 1000 of 1200 at r.d.
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. dep.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards—		
1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"

Digitized by Google

WOOD (*continued*).

BUILDING WOOD—(*continued*)—	At per load of 50 ft.					
	£	s.	d.	£	s.	d.
Fir timber: best middling Danzig or Memel (average specification)	4	10	0 ...	5	0	0
Seconds	4	0	0 ...	4	10	0
Small timber (8 in. to 10 in.)	3	12	6 ...	3	15	0
Small timber (6 in. to 8 in.)	3	0	0 ...	3	10	0
Swedish balks	2	10	0 ...	3	0	0
Pitch pine timber (30 ft. average)	4	0	0 ...	4	15	0

JOINERS' WOOD.	At per standard.					
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0 ...	25	0	0
3 in. by 9 in.	22	0	0 ...	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0 ...	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0 ...	20	0	0
3 in. by 9 in.	17	10	0 ...	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0 ...	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0 ...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0 ...	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0 ...	23	10	0
Do. 3 in. by 9 in.	18	0	0 ...	19	10	0
Battens	13	10	0 ...	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0 ...	17	0	0
Do. 3 in. by 9 in.	14	10	0 ...	16	0	0
Battens	11	0	0 ...	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0 ...	14	0	0
Do. 3 in. by 9 in.	12	10	0 ...	14	0	0
Battens	10	0	0 ...	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0 ...	15	10	0
" " 3 in. by 9 in.	13	10	0 ...	14	0	0
Battens	11	0	0 ...	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0 ...	14	10	0
" " 3 in. by 9 in.	12	10	0 ...	13	10	0
Battens	10	0	0 ...	11	0	0
Pitch pine: deals	18	0	0 ...	21	0	0
Under 2 in. thick extra	0	10	0 ...	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine: Planks, per ft. cube	0	3	6 ...	0	5	0
Danzig and Stettin Oak logs—						
Large, per ft. cube	0	3	0 ...	0	3	9
Small " "	0	2	6 ...	0	2	6
Wainscot Oak Logs, per ft. cube	0	5	6 ...	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½ ...	0	0	9½
¼ in. do. do	0	0	7 ...		—	
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9 ...	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6 ...	0	2	6
Dry Walnut, American, per ft. super as inch	0	0	10 ...	0	1	0
Teak per load	17	0	0 ...	22	0	0
American Whitewood Planks, per ft. cube	0	4	0 ...	0	5	0

Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6 ...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0 ...	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0 ...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0 ...	0	14	6
1 in. by 7 in. white, planed and matched	0	13	6 ...	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0 ...	0	16	6
¾ in. by 7 in. yellow matched and beaded or V jointed beds.	0	11	0 ...	0	13	6
1 in. by 7 in. " "	0	14	0 ...	0	18	0
¾ in. by 7 in. white " "	0	10	0 ...	0	11	6
1 in. by 7 in. " "	0	12	9 ...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.					
	£	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0 ...	7	10	0
Compound Girders, ordinary sections	9	0	0 ...	10	0	0
Steel Compound Stanchions	11	0	0 ...	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0 ...	10	0	0
Flitch Plates	9	0	0 ...	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0 ...	8	10	0

METALS.

	Per ton, in London.					
	£	s.	d.	£	s.	d.
IRON—						
Common Bars	8	10	0 ...	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0 ...	9	5	0
Staffordshire "Marked Bars"	10	10	0 ...		—	
Mild Steel Bars	8	15	0 ...	9	5	0
Hoop Iron, basis price	9	5	0 ...	9	10	0
" " Galvanised	17	0	0 ...		—	
("And upwards, according to size and gauge.)						
Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0 ...		—	
" " 24 g.	10	15	0 ...		—	
" " 26 g.	12	5	0 ...		—	
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0 ...		—	
Ordinary sizes to 22 g. and 24 g.	15	10	0 ...		—	
" " 26 g.	15	10	0 ...		—	
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0 ...		—	
" " 22 g. and 24 g.	18	10	0 ...		—	
" " 26 g.	20	0	0 ...		—	
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0 ...		—	
" " 22 g. and 24 g.	14	15	0 ...		—	
" " 26 g.	16	5	0 ...		—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0 ...		—	
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0 ...		—	
" " " 26 g.	15	0	0 ...		—	
Cut Nails, 3 in. to 6 in.	10	10	0 ...	11	0	0
(Under 3 in., usual trade extras.)						

LEAD, &c. Per ton in London.

	£	s.	d.		
LEAD—Sheet, English, 3lb. and up.	16	2	6	...	—
Pipe in coils	16	12	6	...	—
Soil pipe	18	12	6	...	—
Compo pipe	19	12	6	...	—
ZINC—Sheet—					
Vielle Montagne	27	5	0	...	—
Silesian	27	0	0	...	—
COPPER—					
Strong sheet per lb.	0	1	0	...	—
Thin "	0	1	1	...	—
Copper nails "	0	0	10	...	—
Copper wire "	0	0	10	...	—
BRASS—					
Strong Sheet "	0	0	11	...	—
Thin "	0	1	0	...	—
TIN—English Ingots "	0	1	5	...	—
SOLDER—Plumbers' "	0	0	7	...	—
Tinmen's "	0	0	9½	...	—
Blowpipe "	0	1	0	...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4¼d. " "
Flute Sheet, 15 oz	3½d. " "
" 21 oz.	4¼d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2¾d. per ft. delivered.
¼ "	2¾d. " "
⅜ "	2¾d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3¼d. " "
" " tinted	5d. " "

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	2
" " " in barrels	"	0	2	3
" " " in drums	"	0	2	6
Boiled " " in barrels	"	0	2	6
" " " in drums	"	0	2	9
Turpentine in barrels	"	0	3	5
" in drums	"	0	3	7
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERTYSSWG (Mon).—For erecting a cottage hospital, for Abertysswg Sick Fund Society. Mr. A. F. Webb, architect and surveyor, Blackwood and Tredegar. Quantities by architect:—

W. Williams	£2,245	W. Williams	£2,101
J. Lloyd	2,232	W. Cooper	2,100
Vodden & Lee	2,165	T. D. Wilkins	2,066
R. Blundell	2,135	S. Matthews, Flower*	2,037
H. Davies	2,120		

ALMONDSBURY.—For additions to Pilning Council School, for Gloucestershire Education Committee. Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester:—

H. W. Harris	£2,305 4 8	E. Pruce	£1,730 0 0
S. Lovell	2 114 0 0	S. Slaughter	1,726 0 0
T. R. Lewis	1,956 0 0	E. Clark & Sons	1,720 0 0
J. Browning	1,850 0 0	E. Love	1,705 0 0
T. Lovell & Sons	1,813 0 0	Walters & Son	1,631 0 0
J. Perkins & Sons, Ltd.	1,740 10 0	Orchard & Peer	1,579 0 0
C. A. Hayes & Son	1,735 0 0	W. T. Nicholls	1,564 0 0
Stephens, Bastow, & Co., Ltd.	1,735 0 0	Byard & Son	1,523 0 0
		Adams & Jefferies	1,458 0 0
		A. G. Heard, Bristol†	1,443 16 6

ALTRINCHAM.—For the construction of 9-in. 12-in. and 15-in. sewers in Regent-road and Oldfield-road, for the Urban District Council. Mr. H. E. Brown, Surveyor to the Council, Town Hall, Altrincham:—

	Oldfield-road.	Regent-road
T. Hindley	£491 13 0	£318 11 6
Executors of T. Barber	453 10 0	390 15 0
G. Bozon	390 0 0	490 0 0
J. Hamilton & Son	363 0 0	354 0 0
Edmundson & Wyatt	339 0 0	314 0 0
W. P. Meikle, 67, Dale-street, Liverpool*	319 10 10	283 0 7

BARROW-IN-FURNESS.—For erecting a wash-house and storeroom at the Cottage Homes, Roose-road, for the Guardians. Mr. H. T. Fowler, A.R.I.B.A., Cornwallis-street, Barrow-in-Furness:—

P. Robinson, Greengate, Barrow* £55

BURY.—For heating and ventilating at the new Municipal Secondary School:—

J. H. Higson, Manchester* {£534 15 0 (Scheme A). £524 15 0 (Scheme B).

CALVERLEY.—For erecting a small house, for Mr. and Mrs. Barrons. Mr. H. E. Priestley, architect, 17, Bertram-road, Bradford. Quantities by architect:—

Excavator, Mason, and Bricklayer's Work: Hanson, Fairburn, & Sons, Wyke* £227 0
Carpenter and Joiner's Work: H. T. Coates, Lily-street, Manningham* 89 8
Slater's Work: F. Thompson, Stanningley* 16 10
Plasterer's Work: J. E. Wheatley, Calverley* .. 24 10
Plumber and Glazier's Work: J. Jeffrey, Calverley* 44 7

CENTRY.—For laying of water mains, etc., for water supply of Centry, near Kingsbridge, for Mr. E. W. Adams. Mr. R. Hansford Worth, M.Inst.C.E., 42, George-street, Plymouth:—

T. Shaddock	£235 12 8	W. C. Shaddock	£196 15 10
A. G. Oscenton	231 18 9	G. B. Andrews, Ivybridge, Devon*	171 10 4
R. C. Brebner & Co.	216 12 5	J. W. Mitchell	123 10 0
J. Small	214 9 11	T. H. Oliver	121 0 0
W. Stephens	209 19 10		
Hawking & Best	209 6 7		

[The cast-iron pipes, etc., supplied to the contractor.]

CHELMSFORD.—For additions to "Thornwoods," London-road, for Dr. J. L. Martin. Messrs. Charles & W. H. Pertwee, architects and surveyors, Chelmsford and London:—

W. Fincham	£150	Johnson & Hawkes, Chelmsford*	£144
J. I. Taylor	147		

CHELMSFORD.—For proposed house, Springfield, for Mr. P. H. Gray. Messrs. Charles & W. H. Pertwee, architects and surveyors, Chelmsford and London:—

W. Fincham	£2,221 15 8	H. Potter & Son	£1,895 0 0
Ghoat & Son	2,150 0 0	T. J. Bailey	1,872 0 0
J. Gowers	1,980 0 0	F. Weight, Chelmsford*	1,850 0 0
Johnson & Hawkes	1,977 0 0		

CHELMSFORD.—For alterations and additions, Cuton Hall, Springfield, for Mr. F. J. Marriage. Messrs. Charles & W. H. Pertwee, architects and surveyors, Chelmsford and London:—

W. Fincham	£739 0	T. J. Bailey	£694 17
J. Gowers	720 0	Baker & Sons, Danbury*	642 0
F. Weight	718 0		

EATON SOCON (St. Neots).—For alterations to The Chestnuts, Eaton Socon, for Mr. J. D. Higgin. Mr. T. Cockrill, A.M.Inst.C.E., architect, Market-place, Biggleswade:—

F. Wellham, Eaton Socon* £235

ECCLES.—For erecting a new secondary and technical school, Park-road, Monton, for the Education Committee. Mr. H. Littler, County Architect, 16, Ribblesdale-place, Preston:—

W. Nicholson & Son (Leeds), Ltd., Hunslet, Leeds* £12,500

GOWERTON.—For supplying, laying, jointing, and reinstating of ground of 1,000 yds. 6-in. and one mile of 3-in. cast-iron locket and spigot pipes, for the Directors of the Gowerton and District Gas Company, Ltd.:—

Parkinson & Hodgen, Nicholl-street, Swansea* £553 18 8

HOLMFIRTH.—For sewerage works, Hinchcliff Mill, Burnlee, and Woodhead-road sections, for the Urban District Council. Messrs. J. Barrowclough & Son, Engineers, Holmfirth. Quantities by Engineers:—

No. 1.—Boothroyd.
J. W. Almondbury, Huddersfield, on schedule.*
No. 2.—Hinchcliff.
Littlewood, Scholes, on schedule.*

ILKESTON.—For the erection of Elementary Council Schools, Hallcroft, Ilkeston for 680 scholars, for the Ilkeston Education Committee. Mr. H. Tatham Sudbury, M.S.A., architect, Estate Offices, Ilkeston. Quantities by Architect:—

F. Messom	£9,250 0 0
T. Barlow & Co.	7,878 0 0
F. Perks & Son, Ltd.	7,844 4 6
Bosworth & Lowe	7,615 18 0
W. V. Ireson	7,595 10 0
W. Maule & Co.	7,535 0 0
J. N. Beardsley	7,480 0 0
W. Donnelly & Sons	7,307 15 0
F. Martin	7,317 0 0
A. Earnshaw, Ilkeston*	7,290 0 0

[Architect's estimate, £7,453.]

Footroad on West Side of School.
A. Earnshaw* £60 0 0

Digitized by Google

KEIGHLEY.—For erecting shed and warehouse in West-lane. Messrs. J. Haggas & Sons, architects, North-street, Keighley:—

Mason: H. V. Robinson, Ltd., Keighley* ....
Joiner: W. Steel, Keighley* .....
Slater: W. Thornton, Bingley* .....
Plumber: W. & J. Harrison, Keighley* £6,500
Plasterer: A. Emmott, Keighley* .....
Iron and Steel: Roberts & Co., Ltd., Cutter Heights, Bradford* .....
Patent Glazing: W. H. Heywood & Co., Huddersfield* .....

LONDON.—For the erection of a new building upon the site of Nos. 258 to 262, Westminster Bridge-road, S.E., and site of hall at rear of No. 256, for Mr. Joseph Lyons. Messrs. Joseph & Smithem, architects, 83, Queen-street, Cheapside. Quantities by Mr. Chas. W. Latter:—

Simpson & Sons ..	£8,279	Colls & Sons	£7,712
C. Bovis & Co.	7,941	Holliday & Greenwood	7,698
Dove Bros.....	7,898	Holloway Bros.....	7,590
F. G. Minter	7,864	W. Downs	7,539
Higgs & Hill	7,864	Wallis & Sons	7,490
J. Carmichael	7,795		

LONDON.—For forming gallery, staircase, etc., at 429, Strand, for Messrs. Dunn & Co. Mr. E. A. Fermand, architect, 59, Denbigh-street, Westminster:—

Courtney, Pope, & Co.	£306 7 0
W. J. Negus	294 0 0
C. Spreckley & Co., Ltd	281 17 10
S. Jones	250 5 0
Sims & Woods†	240 0 0

LONG EATON.—New streets, for the Bonsall Street Land Society. Mr. Walter H. Woods, M.S.I., architect and surveyor, High-street, Long Eaton, near Nottingham:—

J. Hutchinson & Son	£2,789 0 0	J. Thraves ..	£2,022 0 0
J. Hawley....	2,446 15 6	C. Cox & Co.	1,949 5 8
Perks & Son ..	2,188 0 0	Brown & Son, Long Eaton*	1,919 10 0
J. Bull	2,027 0 0	Belshaw & Son	1,877 0 0

LYMINGTON.—For pumping plant at Ampress, for the Corporation:—

C. Isler & Co., Ltd.	£1,151 0
Crossley Bros., Ltd.	1,145 0
Shalders & Davis	1,090 0
Ruston, Proctor, & Co., Lincoln*	998 0
Duke & Ockenden.....	948 10
Fielding & Platt	925 0
A. C. Potter & Co.....	840 0

MILLSHAW.—For alterations and additions to three cottages, Millshaw, Churwell, for W. L. Ingle, Ltd. Mr. T. A. Buttery, F.I.A.S., architect, Queen-street, Morley, and 1, Basinghall-square, Leeds:—

Mason: J. Pullan, Beeston.....	£246 0 0
Joiner: G. W. Fergusson, Leeds	110 0 0
Plumber: F. Hargreaves, Churwell	49 0 0
Plasterers: Barraclough & Rennison, Morley.....	34 13 0
Slater: J. W. Richmond, Leeds	22 10 0

MORETON HAMPSTEAD.—For sewerage works, for Newton Abbot Rural District Council. Mr. S. Sagar, F.I.A.S., Newton Abbot:—

T. Vanstone ..	£815 0 0	R. C. Brebner & Co.	£563 15 0
H. V. Smith & Co.	665 12 10	T. Shaddock ..	515 4 6
W. C. Shaddock	657 10 10	Parker & Brimblecombe, Moreton Hampstead*..	475 16 9
E. Pike	656 18 0		
Jefford & Sons	612 2 5		
Hawking & Best	607 11 0		

PONTYWANN.—For extensions and alterations to the County Secondary School, for Monmouthshire Education Committee. Mr. R. L. Roberts, Architect, Abercarn. Quantities by Architect:—

J. Pritchard, Pontymister, Monmouthshire* £1,385

SEMER.—For alterations and additions to the drainage at the Workhouse, for Cosford Guardians. Mr. H. J. Wright, architect, 4, Museum-street, Ipswich:—

Downs & Stephenson, Hadleigh, Suffolk*.. £110

SHEFFIELD.—For erecting additional offices, messroom, and retaining wall at Lumley-street Destructor, for the Health Committee. Mr. Charles F. Wike, C.E., City Engineer, Town Hall, Sheffield:—

Wellerman Bros., Manchester and Sheffield.. £343 12

SOUTH ELMSALL (Yorks).—For erecting a brick church, for the Building Committee. Mr. J. Nicholson Johnston, architect, Yeovil, Somerset:—

W. Hanley ..	£5,063 10 0	Swift Bros. ..	£3,849 5 0
Rhodes Bros..	4,641 0 0	D. Gill, Doncaster*	3,821 15 0
F. R Bartlett	4,519 11 6	Selam & Co...	3,567 0 0
E. E. Dickinson	4,441 0 0		
G. F. Kirk....	3,857 18 0		

WANSTEAD.—For the erection of receiving homes, Wanstead, for the Guardians of the Poor of the West Ham Union. Messrs. J. T. Newman & Jacques, architects, 2, Fen-court, E.C. Quantities by Messrs. R. L. Curtis & Sons:—

Fitch & Cox	£28,321 0 0
Harris & Wardrop	25,693 0 0
C. Wall, Ltd.	24,959 0 0
Myall & Upson	24,483 4 6
Webster & Son	24,321 0 0
A. N. Coles	23,818 12 2
Pattinson & Sons	23,311 0 0
F. & G. Foster.....	23,250 0 0
Kirk & Randall	23,234 0 0
B. E. Nightingale	23,075 0 0
Gathercole Bros.....	23,000 0 0
Allen & Son, Ltd.	22,934 0 0
W. J. Maddison	22,579 0 0
Brand, Pettit, & Co.	22,400 0 0
F. & A. Willmott	22,063 0 0
Spencer, Santo, & Co.....	21,998 0 0
F. & H. F. Higgs	21,614 0 0
J. W. Jerram	21,349 0 0
F. J. Coxhead	21,115 0 0
A. E. Symes	20,919 0 0
H. J. Carter.....	20,646 0 0

WEST MOOR.—For constructing carriageways, etc., in Ash-terrace, Maple-street, etc., for the Tynemouth Rural District Council:—

T. Coxon, Holywell Village*..... £363 5 8

WIMBLEDON.—For the erection of the Wimbledon Technical Institute Extension:—

Spencer, Santo, & Co., Kensington* £8,310

WINCANTON.—For new hospital buildings and roads, drains, etc., for Wincanton District Isolation Hospital Committee. Mr. A. J. Pictor, A.R.I.B.A., Bruton, Somerset:—

T. Lydford	£2,323 1 0
R. G Spiller.....	2,036 0 0
S. Dodi nead & Sons	1,958 0 0
A. Wills & Sons	1,940 10 0
E. G. Padfield	1,931 7 10
Wort & Way	1,879 17 7
J. Long & Sons	1,860 0 0
H Pittard & Sons	1,852 10 0
E. Chancellor & Sons	1,840 0 0
Sainsbury Bros.	1,821 2 11
T. Stockham	1,775 10 0
T. S. Hobbs	1,764 7 2
Sweetman Bros.	1,763 3 0
G. Moore & Sons	1,746 0 0
R. J. Stead	1,737 0 0
C. Bryer, jun., Bridgwater*	1,684 0 0

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
LITHOGRAPHERS,
Employ a large and efficient Staff especially for Bills of Quantities, &c.
4 & 5, East Harding-st., Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS.
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

OGILVIE & CO., Telephone: DALSTON 1398
Many years connected with the late firm of W. H. LASCELLES & Co., LTD., of Bunhill Row.
Amhurst Works, **DALSTON LANE, N.E.**
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

JOINERY,
Of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.,
ESTIMATES ON APPLICATION.
COLNE BANK WORKS, COLCHESTER.
Telephone: 0135. Telegrams: "Orfeur, Colchester."
LONDON OFFICE: 161, COMMERCIAL STREET.

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor,
Oakeley-Portmadoc.
BEST WORK ONLY.
Hand-made Broseley Tiles in Three Shades.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company.
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

"Drop Dry" Glazing
ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.
Copper & Zinc Roofing.
The most Efficient and Economical System in the Kingdom.
Designs and Estimates Free on Application.
Telegraphic Address: COURTEOUS, LONDON."
F. BRABY & CO., LTD.
Telephone: North 2100 (3 lines).
Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.
Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Digitized by Google

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

Norman Architecture in Cornwall. By EDMUND H. SEDDING. Pp. 464. (London: Ward & Co. and B. T. Batsford; Truro: Pollard. 1909. 7s. 6d.)

ALTHOUGH the subject-matter of these interesting pages is, as the chief title indicates, a description of the Norman work in the churches of Cornwall, it includes also a description of work of later date in the various churches, and notes on some of the manor-houses; it forms, in fact, a very valuable collection of notes made by an architect from personal visits and observation in one of the most interesting districts, architecturally, of the British Isles. Some idea of the amount of information given may be drawn from the lists of churches, manor-houses, and castles given at the beginning of the work; 246 of the first, forty-six of the second, and five of the third. Of the churches 200 are noticed, and given in alphabetical order, which renders reference to any particular one an easy matter.

The illustrations are partly from photographs, partly from drawings by the author; a large number of these latter are measured, or have dimensions given on them, and include several ground-plans of the churches, showing the extent of the earlier and later work, and in some instances elevations of arcades, doorways, etc. The finest example, and the largest in scale, is perhaps the Church of St. Germans, with its massive western towers flanking a gable with three Norman lancets over a rich doorway of seven orders. Other beautiful doorways are given from Kilkhampton, Morwenstowe, and St. Anthony in Roseland, and plainer ones at Landewednack, Liskeard, Manaccan, St. Martins by Looe, and Tintagel, among others.

The majority, however, of the illustrations are of fonts that, in so many districts other than Cornwall, have survived often the total destruction of the earlier church, and its rebuilding at a later date.

Perhaps the most striking are chiefly of two types; (1) those with a square bowl and columns at the angles, as in the example, of which we here reproduce the illustration with the permission of the publishers, at Egloshayle, and of which other examples occur at St. Gemys, St. Madron, and Poughill (with a double row of arcading); and (2) those with bowls of square and circular form with angle columns having grotesque heads at the top, and a great variety of carving on the bowl itself, chiefly foliage and "monsters"—supposed to represent the evil spirits exorcised by baptism. There are, however, as a glance through these pages will show, other varieties, and Mr. Sedding, in the glossary given at the end of the book, divides the fonts into five types, giving examples of each and their probable order in point of date. The vigour of the early carving is well given in the author's drawings, particularly in Plate LXXXIII. (the font at Lanreath), Plate LII. (Fowey), and Plates XXX. and XXXI. of the font at St. Cubert.

In future editions it would be well for the illustrations of Tintagel to be placed opposite the pages to which they refer: the letterpress begins at page 382; the illustrations, with the exception of that of the font, are between pages 375 and 379, in which other churches are described. The work, however, gives ample proof of a large amount of patient labour, and the author is to be congratulated on the production of a book which, although modest in dimensions, must have a place among the standard works of reference of the county and subject with which it deals.

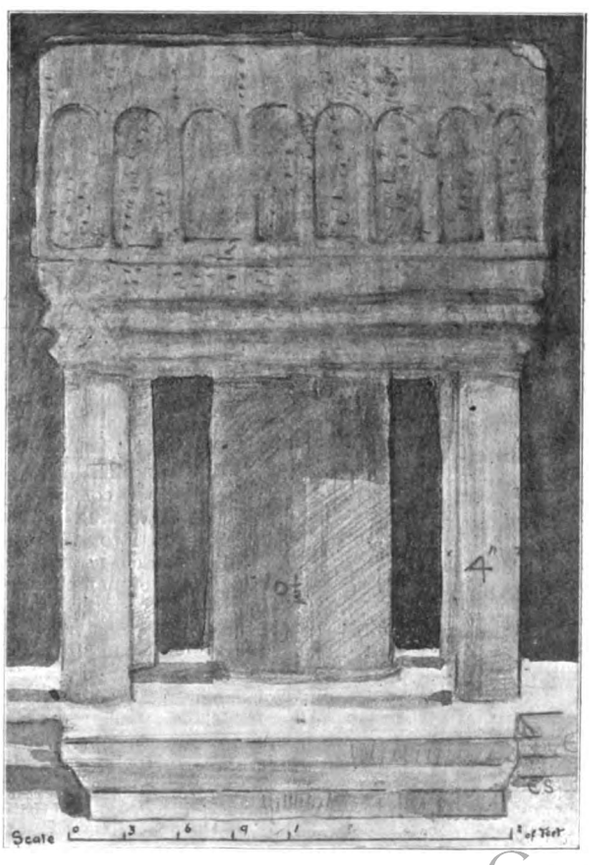
A chapter is devoted to a list of old Cornish saints, and their origin and symbols, and at the end is an excellent map of the county.

One curious oversight is to be noted: the author cites the carved capitals in the nave of St. Just as proofs that it was not impossible to execute somewhat elaborate carving in granite. In fact, though the outer walls at St. Just are granite, the nave arcade (as noted in our article "From a Corner of Cornwall," September 26, 1908) is built in Caen stone. We drew attention at the time to the difference between these free-stone capitals and the granite capitals, chopped rather than carved, in the neighbouring church of St. Buryans.

Australian Architecture: A Technical Manual for all those engaged in Architectural and Building Work. By ROBERT J. HADDON, Architect. Pp. 538. (Melbourne, Sydney, Adelaide, and Brisbane: Geo. Robertson & Co.)

THIS is a general treatise on architecture, written by an Australian architect for Australians; the first book of the kind, as we gather, that has been published in Australia. The author, who is a Fellow of the Institute of British Architects, as well as of the Victorian and South Australian Institutes, justifies the work by the remark in his preface that the technical books from England and America do not cater for the special needs of Australia. This we have no doubt is true; the climate and building materials available are different from those of either England or America; and the requirements of life, business, and habit no doubt differ, as he says, from those of the old civilisation of lands of ancient settlement.

The book appears to be an eminently sensible and practical one throughout. The author begins at the beginning, with instructions for the use of drawing materials and the method of representing work by drawings, and proceeds to describe the requirements for different classes of houses, and for banks, churches, and other buildings. Much of the advice given is universally applicable. In regard to houses, the points which have local significance, in house-building, seem to lie chiefly in a larger employment of timber than we are accustomed to in England, and in a considerable preponderance of one-story houses, even in some of those of a large size, which is natural in a country where there is still plenty of open land for building sites. The plans and illustrations are drawn by the author, and in every case he gives the points of the compass for the house plans. An example which seems to belong specially to the country is "A Bush Cottage, Built in Timber." This seems to be intended as what we should call in England "a week-end cottage," with some special provisions against heat and possible shortness of water, Australia being, as is generally known, a country short in natural water supply, so that in the bathroom it is noted that, to save water, "a tray bath is fitted with a shower fed from outside tanks." It might be well



Font, Egloshayle Church.

Digitized by Google

to remember, in some districts in England where water supply is apt to run short in dry seasons, that a shower-bath gives the same amount of cleansing with much less water than is used for a plunge bath. The description of the construction is :—

"The windows are mostly casements, of red Californian pine timber, oiled, the glass being in small clear panes, leaded in.

The outside weather boards are of jarrah, allowed to go grey. The roof is of corrugated iron, and is well ventilated with louvred ventilators, the ceiling being covered with non-conducting pugging. The inside finishings are entirely in native timbers, plainly treated, and finished with oiled and wax-polished surfaces."

In regard to workmen's homes, the author speaks with appreciation of what has been done in England to provide sanitary and comfortable blocks of "model cottages"; he does not mention France, where (in Paris at least) this class of building is attracting much attention at present, and where they succeed much better than we have generally succeeded in rendering this class of erection architecturally pleasing and attractive. But in regard to Australia the author says that the system of collective dwellings in large building blocks has not found much favour, and that the tendency has rather been to cheapen the means of communication so as to induce the working classes to seek the more open lands for their dwellings. And in a new and comparatively open country this is undoubtedly the best policy. Our great blocks of artisans' dwellings are not an ideal solution of the problem; they are an effort to make the best of difficult conditions.

A class of building probably peculiar to Australia is illustrated in the plans and sections of "A Shearing Shed for Shearing 20,000 sheep." The plan is in the shape of an inverted ⊥. On each side of the base of the ⊥ are the pens for sheep, and in the middle is the shearing-floor for sixteen shearers, to which the sheep are driven up an inclined way from the pens; the shank of the ⊥ is the wool-room for sorting, weighing, etc., the floor on the same level as the shearing-floor.

The second half of the book is occupied with details of construction in brick, masonry, ferro-concrete, woodwork, which do not appear to differ much from what are usual in England. Slating seems to be largely used for roof-covering, though all the slate has to be imported, from Wales, America, or the continent of Europe. In describing the punching of the slates for nails, the author omits to draw attention to the position of the holes and the reason for it; they are shown in the diagram, however.

Some of the designs for houses are very pleasing; others of the designs, especially some for churches, would not come up to the standard of English architecture of the present day, but one can hardly expect this in a country which has as yet no artistic or architectural traditions. One is reminded of this by the recommendation, in the introductory chapter, to study and copy book examples of the ancient styles, where it is added: "In the old world, such studies should be conducted side by side with the taking of measurements, and actually plotting and drawing to scale portions of good old examples; but in Australia, this being impossible, recourse should be had to the very best buildings here existent"; a sentence which brings home to us the gulf which separates the position of the architect in a new country, with no architectural past, from that of the architect who has before him, constantly, or within easy reach, the monuments of some of the greatest periods of architecture.

The author does not appear to suggest anything like an ambition to evolve an Australian style, the outgrowth of the conditions special to the country, and hence the title "Australian Architecture" is hardly quite suitable (though no doubt a very good title from an Australian publisher's point of view); it should rather have been, perhaps, "Architecture for Australian Architects." But the author has produced an eminently sensible and practical book, which we hope will meet in the Australian colonies with the success it deserves.

The Baronial and Ecclesiastical Antiquities of Scotland. By R. W. Billings. Parts XII. to XVI. (Edinburgh: T. N. Foulis. 1909. 1s. per Part.)

Five more parts of this interesting reprint of Billings's well-known work have been issued. They contain his very interesting series of illustrations of the cathedral at Glasgow, the beautiful church at Haddington, and the chapel attached to Holyrood Palace. The domestic work includes Heriot's Hospital, Edinburgh, Innes House, and Huntly Castle. There are also illustrations and descriptive letterpress of the cathedrals at Kirkwall and Iona, the abbey churches of Jedburgh, Kelso, Lincluden, and Kilwinning, the churches at Linlithgow and Leuchars, and among domestic examples the palace at Linlithgow and the castles at Kildrummie and Kilravock. The illustrations are uniformly well reproduced, and this further instalment emphasises the value that the work will have when completed, not only for the beauty of the buildings themselves, but as bringing the work within reach of those for whom the possession of a copy of the original is not possible.

Reinforced Concrete Diagrams. By G. S. Coleman, A.M.Inst.C.E. (London: Crosby Lockwood & Son. 1908.)

This book consists essentially of three plates with explanatory matter and numerical examples, all the diagrams being based upon the formulæ issued by the Joint Committee on Reinforced Concrete of the Royal Institute of British Architects. The main diagram in Plate I. gives the value of the total safe load in pounds for rectangular beams and slabs of various spans, the beam width being taken at the unit of 1 in. Only tension reinforcement is considered, and the percentage of steel is that representing the theoretical "economic" proportion of metal. For other percentages it is necessary to apply figures taken from a second diagram. A third diagram in the same plate relates to the stress tending to cause rupture of the adhesion between the concrete and the reinforcement.

Three similar diagrams in Plate II. are intended for the design of tee-shaped beams of specified proportions. These diagrams are necessarily of somewhat limited utility in consequence of the wide limits possible, and sometimes requisite, in the proportionate dimensions of tee-beams.

The third plate represents the ultimate loads for columns reinforced by longitudinal bars only, the values being much lower than those actually obtaining, since the effect of judiciously-applied transverse reinforcement is to increase the breaking strain of reinforced concrete columns very considerably.

Reinforced Concrete Construction. By W. Noble Twelvetrees, M.I.Mech.E., A.M.I.E.E., Author of *Concrete-Steel Buildings*, etc. (London: "The Local Government Officer." 1909.)

Mr. Twelvetrees, who is well known for his works on concrete-steel construction, must be congratulated on his success in compressing into this pamphlet of fifty pages so much useful information on the subject. The pamphlet consists of four chapters, the first of which deals with the theory of beams and columns and the properties of concrete and steel. Chapter II. contains formulæ for calculating the strength of single and continuous concrete beams and slabs with different kinds of steel reinforcement; and Chapter III. contains formulæ for columns. The fourth chapter, on "Practical Construction," occupies one-third of the book, and deals fully but tersely with the materials employed and the tests to be applied; the moulds and centring for columns, beams, floors, and walls; the methods of securing reinforcement in position and of depositing the concrete; the removal of the moulds and centring; the provision to be made for pipes of various kinds, etc.; and other details. Engineers and architects will find it a most useful book on a highly technical subject.

Concrete. Its Uses in Building from Foundations to Finish. By Thomas Potter. Third Edition, revised and enlarged. Pp. 324. (London: B. T. Batsford. 1908. 7s. 6d.)

Since the second edition of this book was published in 1891 a marked development has taken place in the use of concrete, and many new methods of employing that material have been introduced. Hence there is no lack of justification for the present issue. The book contains much interesting and useful matter, written in a plain and straightforward way, and illustrated in a manner that leaves little to be desired. The first chapter traces the history and application of concrete from early times, and elsewhere the consideration of several branches of concrete work is briefly prefaced by historical references. While not attempting anything in the nature of mathematical or scientific treatment, the author has collected a large number of really useful facts relative to the constitution and employment of plain and reinforced concrete in building construction, and in its present form the volume forms a welcome addition to the growing literature on the subject.

Portland Cement. By A. C. Davis, F.C.S., Assoc.Inst.C.E. Second Edition, revised and enlarged. (London: Woodford, Fawcett, & Co. 1909. 15s.)

Originally published in the form of articles to the *Stone Trades Journal*, the subject-matter of this second edition has been rewritten and brought up to date by more recent information relative to the production and examination of Portland cement, the author having also added a description of the most recent labour-saving devices and apparatus for cement-testing. Mr. Davis possesses the double qualification of being at once a qualified chemist and the manager of an important cement undertaking. Therefore, as our readers may anticipate, his scientific tendencies are reasonably tempered and qualified by experience of a kind not possessed by some writers on Portland cement. The volume is concluded with reprints of the British, American, German, and French standard specifications, which will be found very convenient for purposes of reference.

Reinforced Concrete in Europe. By Albert Ladd Colby, M.Am.Soc.C.E. Pp. 252. (Easton, Pa.: The Chemical Publishing Company. London: Williams & Norgate. 1909. 14s.)

The author has taken an immense amount of trouble in collecting information concerning reinforced concrete practice. The report now published is in no sense of the word a treatise, but deserves commendation as an admirable guide to the practice adopted by leading engineers and authorities in the chief European countries.

The Concrete Institute; Transactions and Notes. Vol. I.; part 3. (London: The Concrete Institute. 1909.)

The present part of the *Transactions* is mainly devoted to the paper read in May last by Mr. H. K. G. Bamber, F.C.S., on the setting of Portland cement, a contribution which was the occasion of a lengthy and instructive discussion.

British Rainfall, 1908. By Hugh Robert Mill. Pp. 304. (London: Edward Stanford. 1909. 10s.)

Another volume on the distribution of rain in space and time over the British Isles, embodying the records of more than 4,500

Digitized by Google

observers concerning the rainfall during the year 1908. This is the forty-eighth annual report of the British Rainfall Association; and in addition to the data mentioned it contains several articles upon different branches of meteorological work.

The Building Mechanics' Ready Reference. Cement Workers' and Plasterers' Edition. By H. B. RICHEY, Superintendent of Construction, U.S. Public Buildings. (New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1908.)

IN view of the greatly increased employment of cement in modern building construction, this handbook should be generally welcomed by architects, as well as by the class to which it is primarily addressed. The author deals clearly and concisely with various cements, and their uses in the form of mortar and concrete. In a succeeding chapter the subject of reinforced concrete is taken up from the standpoint of the worker in actual construction, who will find many hints of practical utility. The surface treatment of concrete, the preparation and application of concrete building blocks, and the superintendence of concrete construction, are among other noteworthy contents of the book, which we thoroughly recommend to our readers.

Handbook on Tacheometrical Surveys. By C. XYDIS, C.E. (Paris). (London: E. & F. N. Spon. 1909.)

As an introduction to the study of tacheometrical surveying this book should be of serivce to those about to take up the subject. After explaining the objects and elements of tacheometry the author describes the details of traversing field work, and afterwards considers a method for the survey of estates and wide tracts of country, the work being concluded by a series of tables and diagrams, the latter as well as those in the body of the work being admirably drawn and printed.

The Practical Management of Sewage-disposal Works. By W. C. EASDALE, M.S.E., M.R.San.I. Pp. 54. (London: The Sanitary Publishing Company. 1909. 2s.)

MR. EASDALE has had many years' experience in the design and management of sewage-disposal works, and in this little book of fifty-six pages he gives a good deal of valuable information on the subject. The book is intended mainly for the use of persons in charge of small installations, and does not profess to deal with the large works of towns and cities. It is perhaps for this reason that nothing is said about chemical precipitation. The various parts of a system of bacterial purification — grit-chambers, tanks, contact-beds, and continuous filters, sludge and humus pits, finishing filters, etc.—are described, and many useful hints on their management are given. Persons in charge of such works will find the book very helpful, and it is not without value to engineers, architects, and estate agents.

MAGAZINES AND REVIEWS.

THE *Burlington Magazine* contains two specially architectural articles. One of these is on "The Influence of Ducerceau on French Renaissance Furniture," with illustrations of some articles of furniture known or believed to be his design. They are of interest, but are in a bad and tawdry taste. Mr. Tavenor-Perry's article on "The Campanili of St. Peter's, Rome," is of real interest; campanili which do not exist but were intended by Maderno, and one of which was actually erected under the superintendence of Bernini, and destroyed a few years afterwards for some reason which Mr. Tavenor-Perry says cannot now be explained. It may have been personal animosity against Bernini. At all events it seems to have been completed in 1641 and demolished in 1646. An illustration of it is given, we are not told from what source. That it to some degree suggested Wren's very superior campaniles to St. Paul's, as the writer of the article supposes, is not at all improbable. The squareness and heaviness of the façade of St. Peter's would certainly have been much relieved by these additions, and the fact that they were intended suggests rather a different idea of Maderno's scheme than is generally entertained.

The *Architectural Record* (New York) contains a well-written and thoughtful article by Mr. W. R. Ware on "Drawing, Designing, and Thinking," with some suggestive remarks on the relation between drawings, models, and the executed building; and the points in which both drawings and models may be misleading as to the ultimate result. Mr. F. Lees contributes an article on "Some XVIth and XVIIth Century Parisian Mansions," some of them still existing though in a rather desolate condition; others, which have disappeared, being illustrated from old engravings.

The *Architektonische Rundschau* contains an article on and numerous illustrations of the new Rathhaus at Rixdorf, a building on a very large irregular plan, and with a general appearance which may be described as mediæval with modern detail. It is certainly picturesque—perhaps a little too ostentatiously so.

Mr. Kenneth Bell's second and (we presume) concluding article in the *Cornhill* on "Architecture in English History" is better than the first. It deals with English architecture after the decay of Gothic; and the part which Inigo Jones and Wren played in this chapter of English architecture is admirably summed up. We quote a portion of his remarks in regard to the former:—

> "He controlled, centralised, disciplined, and stimulated the whole building art of Britain. The Banqueting Hall, to say nothing of the magnificent project of which it is but a partial fulfilment, is an indication that architecture was to be redeemed from 'domesticity.' A greater current of national energy and effort was flowing back into it; it was again to express a portion of the national consciousness; the *genre* of the Elizabethan age was to be superseded by the advent of a 'grand style.' Inigo Jones's work is, above all, in no sense picturesque; it never relies on adventitious ornament and setting for its claim to be considered architecture, but on those essentially architectural qualities of dignity and symmetry. Nothing is more fatal to architecture than to be treated from the point of view of the artist. The architect's work must be pre-eminently a building, not a picture."

The *Antiquary* is an interesting number. Mr. W. Martin contributes the first part of "A Study of Early Map-Views of London"; those drawings in which the attempt is made to combine pictorial effect with the representation of plan, and in which naturally the accuracy of the plan is often made to bend to the requirements of pictorial representation. He analyses the methods employed, and the degree of confidence which may be placed in these attempted representations of fact under a double aspect. Dr. Cossio's article on "Leonardo da Vinci, a Precursor of Aviation," comes in opportunely at the present moment. He quotes at the end Leonardo's prophetic words—"The great bird will make its first flight . . . filling the world with stupor—filling with his fame all the books, and eternal glory to the nest where he was born." Curious to think that this was written 400 years ago. The prophecy has been fulfilled, but whether for the real benefit of mankind remains to be seen. The number also contains a reprint of Professor Bosanquet's article "Excavations in Roman Wales," with illustrations, and the first part of an article by Messrs. W. G. Collins and T. C. Cantrill, on "Solisbury Hill Camp, near Bath," with a plan and sections.

In the *Nineteenth Century* is an article in French, by M. André Beaunier, on "L'Art Français Contemporain." It is a reactionary pessimistic article, very much exaggerated and not at all fair to the best work of the writer's own countrymen, but contains some truth, and it is at all events refreshing to come across a writer on art who can recognise that Rodin is a much over-rated person, pushed by his admirers into the position of a kind of sham Michelangelo.

In an article in the *National Review* on "Modern French Pictures in England," Mr. W. Roberts has collected a good deal of interesting statistical information in regard to the progress in England of the taste for the purchase and exhibition of French pictures in London. The article is not critical, it is a summary of facts, but is in that sense a useful record, and a good deal of pains must have been spent in collecting the material for it.

In the *Century* Mrs. Pennell writes in her usual picturesque style about the church or cathedral of St. Etienne at Bourges, illustrated by Mr. Pennell, whose drawing of the west portal is in his best manner as respects style and effect, though the gable over the centre portal is not *quite* in true perspective. "The World's Greatest Aqueduct," written by Mr. Douglass Flinn, engineer to the Board of Water Supply, New York City, is not any one of the Roman aqueducts, but the new one in progress to bring water from the Catskill Mountains to New York. It appears to be a remarkable piece of work. The article is illustrated by views, a map, and constructional sections.

In *Harper* Mr. Geil's concluding article on the Great Wall of China includes among its illustrations a drawing of a very interesting and primitive cantilever bridge at Ch'ang Hou—the cantilevers formed by what appear to be trunks of trees sticking out from the bank, each protruding farther out than the one beneath it. Mr. Abbey's illustrations to "Antony and Cleopatra," accompanying a critical article on the play, as usual do not rise to the subject; his Cleopatra is very weak. He has illustrated Shakspeare finely in some of his pictures, but in these smaller black-and-white illustrations he is somewhat commonplace.

In *Scribner* Mr. Montgomery Schuyler deals with "The Evolution of the Sky-scraper." He gives a series of illustrations of the gradual development of the sky-scraper, which he regards as suggested and rendered practicable by the great American development of what are there called "Elevators." The list of illustrated buildings culminates in Messrs. Lebrun & Son's "Metropolitan" building, 700 ft. 3 in. from the side-walk to the finial. It is treated architecturally as a campanile, with a short square spire at the top. Among the earlier buildings the double block of the West-street building, New York, by Mr. Cass Gilbert, reminds one rather curiously of Borthwick Castle, on of course a much larger scale. "From Rothenburg to the Danube," by Mr. Everett Warner, is illustrated by some charming sketches of old buildings by the author.

In the *Pall Mall Magazine* Mr. C. J. L. Clarke gives an interesting description of "The Wolf and its Keepers"; not the animal, but the Wolf lighthouse, 18 miles from Penzance, built on a rocky platform where the Atlantic swell is so persistent that access can only be obtained to the lighthouse by being swung up from a boat in the loop of a rope attached to a crane above. The article is illustrated by photographs, and gives a good deal of information as to the practical working of a lighthouse.

Concrete and Constructional Engineering now appears as a monthly magazine. In view of the rapidly-increasing employment of concrete and reinforced concrete, the more frequent publication of this journal will probably be appreciated. The present number contains very little in the way of original articles, although the professional reader will find, as usual, a useful collection of details relative to construction in this country and abroad, and reports of various papers contributed to technical societies.

Digitized by Google

TEXT-BOOKS for STUDENTS of ARCHITECTURE & BUILDING CONSTRUCTION.

ESSENTIALS IN ARCHITECTURE. An Analysis of the Principles and Qualities to be looked for in Buildings. By JOHN BELCHER, R.A., F.R.I.B.A. With 80 Illustrations. Large crown 8vo, cloth, gilt, 5s. net.

A HISTORY OF ARCHITECTURE ON THE COMPARATIVE METHOD. By PROFESSOR BANISTER FLETCHER, F.R.I.B.A., and BANISTER F. FLETCHER, F.R.I.B.A. Containing 800 pp., with about 2,000 Illustrations, reproduced from photographs of Buildings and from specially prepared drawings of constructive detail and ornament. Fifth Edition, thoroughly revised and greatly enlarged. By BANISTER F. FLETCHER. Demy 8vo, cloth, 21s. net.

"A complete, trustworthy, and extremely attractive manual."—*The Builder.*

THE ARCHITECTURE OF GREECE AND ROME. A Sketch of its Historic Development. By WILLIAM J. ANDERSON, A.R.I.B.A., and R. PHENÉ SPIERS, F.S.A. Second Edition, in part re-written and much enlarged. Containing 356 pages of Text, and 257 Illustrations from photographs and drawings, including many full-page Plates. Large 8vo, cloth, 18s. net.

"As a comprehensive *résumé* of the history and characteristics of Greek and Roman architecture this must certainly be considered to be the best one-volume work of its kind that has yet appeared in our language."—*The Builder.*

THE ORDERS OF ARCHITECTURE. Greek, Roman, and Italian. Edited by R. PHENÉ SPIERS, F.S.A., F.R.I.B.A. Fourth Edition, revised and enlarged, containing 27 full-page Plates, with Descriptive Notes. Imperial 4to, cloth, 10s. 6d.; cash price, 8s. (postage 6d. extra).

"An indispensable possession to all students of architecture."—*The Architect.*

EXAMPLES OF CLASSIC ORNAMENT FROM GREECE AND ROME. Drawn by LEWIS VULLIAMY. Containing 20 finely engraved Plates (size 19½ in. by 13½ in.), illustrating a choice collection of examples. Selected and described by R. PHENÉ SPIERS, F.S.A., F.R.I.B.A. Folio in portfolio, 12s. 6d. net.

This work illustrates a variety of characteristic examples of Classic Architectural Ornament selected from Athens, Rome, etc., and students requiring authoritative and well drawn illustrations, to a large scale, of such work will find it of the greatest use.

GOTHIC ARCHITECTURE IN ENGLAND. An Analysis of the Origin and Development of English Church Architecture, from the Norman Conquest to the Dissolution of the Monasteries. By FRANCIS BOND, M.A., Hon. A.R.I.B.A. Containing 800 pp., with 1,254 Illustrations, comprising 785 photographs, sketches, and measured drawings, and 469 plans, sections, diagrams, and moldings. Imperial 8vo, cloth, 31s. 6d., net.

"The fullest and most complete illustrated treatise on the subject which has yet appeared. . . . It is a book which every student of architecture, professional or amateur, ought to have."—*The Builder.*

THE ARCHITECTURE OF THE RENAISSANCE IN ITALY. A General View for the Use of Students and Others. By WILLIAM J. ANDERSON, A.R.I.B.A. Fourth Edition, revised, with additional Plates and other Illustrations. Containing 70 full-page Plates and 107 smaller Illustrations from photographs and drawings. Large 8vo, cloth, 12s. 6d. net.

"A delightful and scholarly book, which should prove a boon to architects and students."—*Journal R.I.B.A.*

EARLY RENAISSANCE ARCHITECTURE IN ENGLAND. An Historical and Descriptive Account of the Tudor, Elizabethan and Jacobean Periods, 1500—1625. By J. ALFRED GOTCH, F.S.A., F.R.I.B.A. With 88 photographic and other Plates and 230 Illustrations in the Text from drawings and photographs. Large 8vo, cloth, 21s. net.

"Mr. Gotch shows how architecture developed from the pure Gothic through Tudor, Elizabethan, and Jacobean phases, until the full Renaissance, when classical features obtained the mastery over our English work. The book is quite a storehouse of reference and illustration, and should be quite indispensable to the architect's library."—*The British Architect.*

ARCHITECTURAL SKETCHING AND DRAWING IN PERSPECTIVE. A progressive series of 36 Plates, illustrating the Drawing of Architectural Details and Sketching to Scale. By H. W. ROBERTS, Author of "R's Method." Imperial 8vo, cloth, 7s. 6d. net.

THE PRINCIPLES OF ARCHITECTURAL PERSPECTIVE. By G. A. T. MIDDLETON, A.R.I.B.A. With chapters on Isometric Drawing and the Preparation of Finished Perspectives. Containing 60 Illustrations. Demy 8vo, cloth, 2s. 6d. net.

THE ACKNOWLEDGED TEXT-BOOKS ON CONSTRUCTION

PRACTICAL—UP-TO-DATE—COPIOUSLY ILLUSTRATED.

SEVENTH EDITION (71ST THOUSAND), REVISED, RE-ARRANGED, AND GREATLY ENLARGED, with the 1909-10 Syllabus of the Board of Education and Examination Papers for 1900-1909.

BUILDING CONSTRUCTION AND DRAWING. By CHARLES F. MITCHELL, Lecturer on Building Construction at the Polytechnic Institute, London. FIRST STAGE OR ELEMENTARY COURSE. Containing 450 pages of Text, with 1,100 Illustrations, fully dimensioned. Crown 8vo. Cloth, 3s.; cash price, 2s. 3d. (postage 4d. extra).

"It is a model of clearness and compression, and ought to be in the hands of every student of building construction."—*The Builder.*

JUST PUBLISHED.—SIXTH EDITION, REVISED TO DATE AND GREATLY ENLARGED, with the 1909-10 Syllabus of the Board of Education and Examination Papers for 1905-1909.

BUILDING CONSTRUCTION. By CHARLES F. MITCHELL, assisted by GEORGE A. MITCHELL. ADVANCED AND HONOURS COURSES (comprising Stages 2, 3, and Honours). Containing 900 pp. of Text, with 800 Illustrations, fully dimensioned, many being full-page or double Plates. Crown 8vo, cloth, 6s.; cash price, 4s. 6d. (postage 6d. extra).

"Mr. Mitchell's two books form unquestionably the best guide which any student can obtain at the present moment. In fact, so far as it is possible for anyone to compile a satisfactory treatise on building construction, Mr. Mitchell has performed the task as well as it can be performed."—THE BUILDER.

BRICKWORK AND MASONRY. A Practical Text-Book for Students and those engaged in the Design and Execution of Structures in Brick and Stone. By CHARLES F. MITCHELL, assisted by GEORGE A. MITCHELL. Second Edition, revised and much enlarged. Containing 500 pages, with over 700 Illustrations. Large 8vo, cloth, price 7s. 6d. net.

"This is a most valuable work. It is not a treatise as the term is generally understood, but a compendium of useful information admirably collated and well illustrated. . . . In its revised form the book is more useful than ever to students and builders."—*The Builder.*

*** *Illustrated Prospectuses of the above three books will be forwarded post free on application.*

JUST PUBLISHED.—SECOND EDITION, REVISED AND MUCH ENLARGED.

THE ELEMENTARY PRINCIPLES OF GRAPHIC STATICS. By EDWARD HARDY. Containing 200 pages of Text, with 232 clear and practical diagrams. Crown 8vo, cloth, price 3s. net.

PROFESSOR HENRY ADAMS says:—"You have treated the subject in a very clear and logical manner, and I shall recommend the book to my Elementary students as the best of its kind. It is exactly what is wanted to meet the examinations of the Board of Education, and particularly that of Building Construction."

MODERN PRACTICAL CARPENTRY. By GEORGE ELLIS. Containing a full description of the methods of Constructing and Erecting Roofs, Floors, Partitions, Scaffolding, Shoring, Centring, Stands, and Stages, Coffer Dams, Foundations, Bridges, Gates, Tunnels, Excavations, Wood and Half-Timber Houses, and various Structural details; together with methods of Finding the Bevels in Roofs, Setting Out Domes, Steeples, etc. 450 pages, with 1,100 Illustrations. Large 8vo, cloth, 12s. 6d. net. (*Illustrated Prospectus sent free on application.*)

MODERN PRACTICAL JOINERY. By GEORGE ELLIS. A Guide to the Preparation of all kinds of House Joinery, Bank, Office, Church, Museum and Shop-fittings, Air-tight Cases, and Shaped Work, including a full description of Tools, Workshop Practice and Fittings, also Fixing, Foreman's Work, etc. Third Edition, revised and enlarged, with Chapters on Machine Shop Practice, and the Preparation of Work for Machining. 500 Pages, with 1,200 Illustrations. Large 8vo, cloth, 15s. net. (*Illustrated Prospectus sent free on application.*)

BUILDING MATERIALS. Their Nature, Properties, and Manufacture, with Chapters on Geology, Chemistry, and Physics. By G. A. T. MIDDLETON, A.R.I.B.A. 420 pages, with 200 Illustrations. Large 8vo, cloth, 10s. net.

STRESSES AND THRUSTS. By G. A. T. MIDDLETON, A.R.I.B.A. Third Edition, revised and enlarged. With 170 Illustrations. Crown 8vo, cloth. 4s. 6d. net.

THE QUANTITY STUDENT'S ASSISTANT. A Handbook of Practical Notes and Memoranda for those learning to take off Quantities. By GEORGE STEPHENSON. Crown 8vo, 3s. 6d. net.

QUANTITIES. A Guide to the Measurement of Builders' Work. By PROFESSOR BANISTER FLETCHER. Seventh Edition, revised by H. PHILLIPS FLETCHER, F.R.I.B.A., F.S.I. With a typical example of the complete Taking-off, Abstracting, and Billing in all Trades. With 110 Illustrations. Crown 8vo, cloth, price 7s. 6d.; net, 5s. 8d. (postage 5d. extra).

"It is no doubt the best work on the subject extant."—*The Builder.*

B. T. BATSFORD will be happy to forward post free on application his Classified Catalogue of important books on Architecture, Building Construction, Sanitation, Professional Practice, etc.

B. T. BATSFORD, Publisher, 94, High Holborn, LONDON.

Digitized by Google

London: Printed for the Proprietors of "THE BUILDER" by HORACE COX at Windsor House Printing Works, Bream's-buildings, E.C., and

THE BUILDER

VOL. XCVII.—No. 3477. SEPTEMBER 25, 1909.

Contents.

	PAGE
"Suburbia"	327
The Edison Concrete House	328
Notes	329
Three Schools for Waterloo, near Liverpool	330
The Supervision of House Drainage	331
Decorative Art for the Masses	332
The Globe Theatre, Southwark, and its Site	333
The Inner Court, Whitgift's Hospital	334
London County Council Central School of Arts and Crafts	335
Liverpool University and Town Planning	335
Engineering Societies	335
Model Cottages at Alderton	335
Legal Column	337
Brixton London County Council School of Building	337
Master Builders' Associations, etc.	337
Meetings	338
Fifty Years Ago	338
Illustrations:—	
Town Hall Extension, Grimsby	338
Berks County Council Offices Competition	338
Proposed Municipal Buildings, Bursley	339
Applications under the 1894 Building Act	339
Modernising Stuttgart	340
Projected New Buildings in the Provinces	340
London and District Borough Councils	341
Competition News	341
Trade Catalogues	341
Books Received	341
Correspondence:—	
Stoke-on-Trent Town Hall Abortive Competition	341
The Lion at Lucerne	342
Obituary	342
General Building News	343
Sanitary and Engineering News	344
Miscellaneous	345
Law Reports:—	
Hawkins *v.* The King	346
Ancient Light Case Referred to Arbitration	349
Ancient Light Dispute	349
List of Competitions, Contracts, etc., Open	347
Patents	349
Some Recent Sales	349
Prices Current	350
Tenders	351

Illustrations.

First Premiated Design for the Extension of Town Hall, Grimsby. By Messrs. Eade, Johns, & Browne.

Second Premiated Design for Berkshire County Council Offices, Reading. By Mr. E. J. Shrewsbury, A.R.I.B.A.

Third Premiated Design for Proposed Municipal Buildings, Bursley. By Messrs. Warwick & Hall.

1. Perspective View. 2. Plans.

Illustrations in Text.

	PAGE
The Inner Court, Whitgift Hospital, Croydon	334
Model Cottages at Alderton. Messrs. Kemp & How, Architects	336

"*Suburbia.*"

THE London of one hundred years ago may be said no longer to exist. The ancient city, famous throughout its history for many transformations—Roman Castrum, Mediæval City, Renaissance City—has assumed during the XIXth century an altogether unique character in modern civic development. The conversion of the ancient city into a mere business quarter without resident population was perhaps almost complete a quarter of a century ago; since then a somewhat similar process has been going on in all the provincial capitals of England, and the old residences of the townspeople are gradually being abandoned to commercial purposes, or are falling into neglected emptiness, their former occupants having removed into provincial suburbs imitating the mighty "Suburbia" constituting modern London.

Even more astonishing than the custom of abandoning the ancient centre of an English town to purely commercial purposes is the rapid growth of the suburbs. This has certainly no parallel in any continental country, although a certain amount of suburban extension may be observed in German and Italian cities, and, in a lesser degree, in the other countries of Europe.

The growth of "Suburbia" may astonish the foreigner, but it is also a matter of grave interest to many Englishmen. The rate at which the speculative builders of the past fifty years have filled up the countless miles of streets which stretch away from ancient London, Glasgow, Birmingham, Liverpool, or any other town in every direction, has produced some self-evident problems. A recent Parliamentary return of the number of empty houses in Greater London and certain large English towns gives a most astonishing view of the matter, a view which can easily be confirmed by anyone taking a casual tramcar ride in any part of "Suburbia" and attempting to count the notices "To Let" on one side of the tram line only as he rushes past them.

London Suburbs.

Battersea	2,064	Islington	2,554
Bermondsey	426	Kensington	1,980
Bethnal Green	1,054	Lambeth	3,500
Camberwell	3,911	Lewisham	3,731
Chelsea	652	Paddington	2,000
Deptford	1,090	Poplar	1,321
Finsbury	1,650	St. Marylebone	1,324
Fulham	1,047	St. Pancras	1,157
Greenwich	1,212	Shoreditch	1,296
Hackney	2,017	Stepney	2,684
Hammersmith	1,213	Stoke Newington	440
Hampstead	956	Westminster	2,175
Holborn	789	Woolwich	1,276

The above list does not include the suburbs of Wandsworth and Southwark, amongst the older or inner districts, nor the vast regions of outer suburbs now united to the metropolis by continuous rows of houses, tramway lines, etc.

Provincial Towns.

Birmingham	8,461	Manchester	9,928
Bristol	4,850	Portsmouth	1,652
Leeds	6,875	Sheffield	4,907
Liverpool	6,900	Glasgow	17,000

The above figures amount to close upon 100,000. But considering the difficulty of really defining the limits of a suburban neighbourhood in the vicinity of our great modern urban communities, it is evident that such a calculation can only be approximate. For instance, if we add such suburban districts as Croydon or Kingston-on-Thames, which are as much the abodes of Londoners at the present day as Lewisham or Chelsea were in the past, and apply the same system to other great cities, the numbers would perhaps quickly amount up to more than 200,000 at the most restricted estimate.

"Suburbia" is evidently becoming a vast region of much depreciating house property. The system of living away from the centre of business or manufacture, the desire to retire of an evening into some quiet rural suburb after the day's work, has led to conditions which somewhat defeat the object in view. The original suburbs of fifty years ago have now nothing rural about them, they are hemmed in by outer suburbs, which in their turn are being outflanked by rows of London houses at many miles from the centre. As a consequence, the older suburbs are now filled with empty houses, the former occupants of which have fled to delusive outer regions under the impression that a certain limitation must take place to the ever-increasing and widening growth of cockney villas.

But there would appear at present to be no limit to this extraordinary outgrowth of somewhat useless building. Railway and tramcar facilities of transit are increased every year, and the workers in the central hive are able to retire to distances in the still comparatively rural outskirts of London, and other great cities, which would have been out of the question twenty-five years ago. Although the outer fringe of half-built neighbourhoods and rows of houses in course of construction does not appear to be, and indeed cannot be, so much *en evidence* as it was during the last decades of the XIXth century, still large numbers of speculative builders continue their operations in many places.

The foreigner, accustomed to his native way of building a city with vast apartment houses erected on freehold plots of land, the building usually executed in a substantial, even ponderous manner, calculated to last for centuries, must be puzzled to understand a system of leasehold cottage property extending over square miles of territory and involving endless problems of accessibility, water supply, drainage, etc. The tremendous wear and tear, both mental and physical, on the people who spend hours daily in making long tram and railway

Digitized by Google

journeys in the outer regions of "Suburbia," combined with the vast expenditure of money in mere transit, afford other problems for speculation.

As already stated, the inner suburbs of London are now evidently showing signs of a very serious depopulation, owing to the recent developments of tramcar and railway lines. The problem suggests itself—What will become of all the empty houses within the inner zone? What will the owners of such property do in the immediate future, and what will the ground landlords do in the eventual future? Ever since the great speculative building era all over England commenced about the middle of the last century the tendency has been to build property of as "superior" a class as possible. The poorer or labouring classes have hitherto preferred to remain housed nearer the great centre of the metropolis, but at the present day they also are taking advantage of easy transit to the outer fringe of "Suburbia," and the conversion of the old-fashioned "superior" suburban villa into tenements, which might have been anticipated under the circumstances, seems improbable.

A remarkable change has come over the style of suburban villa building during the past twenty years. The scale on which the modern house is built is minute; the furniture of the Victorian period is always far too large for such interiors, and, as a consequence, has to be sold off when people leave their old town houses, migrating to the suburbs. The peculiarly English plan still survives in use, but the "basement" style of house is quite discarded. Local government and sanitary regulations now have much to do with stereotyping the internal arrangements of modern houses.

The passing fashions in architecture are necessarily reflected in the generally overloaded decorations of the small suburban house. The so-called "Queen Anne" style is responsible for much rubbishy building with the poorest of materials used in the cheapest possible way. Usually false in construction, and applied without taste or propriety, the affectation of an ancient style and its details has, under the circumstances, a very disagreeable effect on the eye. The "streaky bacon" villa of the Victorian era was at least built in a fairly substantial manner; its modern rival is, as a rule, distinctly flimsy in style and construction, and, it is to be feared, will fall into picturesque disrepair within comparatively few years. Where suburban tenement houses are being erected by "Garden City" companies, with money loaned by the Public Works Commissioners, a superior style of construction may be looked for, although the outward appearances are not above the average. The utmost pathos of suburban villa design is perhaps reached when a hotch-potch of the "streaky-bacon, stop chamfer," and the "Queen Anne" styles is attempted; the result may be in harmony with modern ideas and fashions, but such houses are painful eyesores to persons of average education and sentiment.

In roaming through the vast suburbs which now encompass every provincial town of importance and many old villages the same extraordinary overbuilding is evident, except, of course, in cases where some flourishing industry accounts for a large population. These town and village suburbs are unfortunately characterised by deplorable imitations of the lowest class London types of buildings. The speculators of the last forty years in rural districts have not even thought to render their building estates attractive, as has been attempted in some cases within the London area.

In the agricultural districts many of the old market towns are provided with suburbs of "jerry-built" houses, which are more or less filled with colonists from the comfortable old town houses. As the townspeople turn out of the towns into the modern semi-detached bow-window house of the suburbs, with rooms 12 ft. sq., with its plot of garden of due proportions, and with all its little luxuries of modern life, the old town houses are abandoned to emptiness or to a precarious use as shops or offices. In the majority of cases country towns are becoming filled with empty old houses, in addition to the unoccupied "villas" of the suburbs.

Adding to the general overbuilt appearance everywhere noticeable, even the ancient country cottages and houses seem falling into disuse. In a few localities like Dartmoor or at seaside places of resort for the urban population the new "cockney villas" seem fairly in demand for a lodging-house season, but such places are liable to great fluctuations of population. There is also a tendency amongst the country people, when they can afford it, to remove near a town for the purpose of occupying the cockney villas.

To resume. The general impression of suburban life as presented to the average foreigner is one of stupefaction at the enormous areas now covered with house property in England, in spite of the fact that a large part of it remains unlet and unsold. If of a speculative mind, the foreigner will inquire how the builders and owners of all this property derive any return for their investment as the years go on, and possible tenants, even on a falling scale of rents, grow scarcer. Drawing comparisons with his native land, the inquiring foreigner may also feel induced to ask why the English suburban house presents such a distinct contrast with the hitherto usually quiet and unobtrusive buildings of other countries. The architectural vagaries of the speculative builder of the last two or three decades can only be compared to the phantasmagoria of a nightmare or the wanton disorder of child's play with a box of coloured bricks. But for building Acts and regulations the eccentricities of local genius might have resulted in still greater monstrosities. As it is, London may be said to present one phase of the "new style" so much talked about in years gone by; here is, in fact, a "new style" unlike anything known in the world before the XIXth century, evolved entirely by the speculative builder of recent years out of an infinite variety of materials, a strange perversity of taste, and what appears to some people a still stranger miscalculation of the requirements of the future.

Vacant houses in "Suburbia" have in some few instances been "converted" into blocks of flats; it is perhaps remarkable that instances of such a treatment of derelict property are not more noticeable and numerous. The flats of the central regions of London are being imitated in some provincial towns, and everywhere they are evidently in demand. A sharp distinction seems to exist between the middle-class "flat" and the working-class "dwelling" of a flat description; the former is at a premium, the latter is also in great demand. But at the same time it is sufficiently clear that the working-classes much prefer the minute suburban house, even with all its inconveniences of a distant journey and additional living expenses. The working classes are, in fact, desirous of living in something which represents to them the country cottage of former days; the pity is that the speculative builder should meet this demand in such an unsatisfactory manner.

As already remarked, the builders and ground landlords of "Suburbia" have somewhat miscalculated the demand for the property which they have created. The tendencies of modern life are changing, and everyone lives in a more economical manner than twenty-five years ago. The modern Englishman is not only content with, but he even prefers either a flat in central parts or a minute cottage in far-away semi-rural suburbs, which his father would have considered but a mean way of living. In the course of a few more years what will have become of the leaseholders of houses which have been standing vacant for long periods, within the intermediary zone of suburbs, and what will the ground-landlords do with all this tenantless property of such a "superior" description that it can only be converted to other uses with extreme difficulty?

THE EDISON CONCRETE HOUSE.

FOR the last year or two paragraphs have been appearing in the Press relative to the proposal of Mr. Edison to make concrete dwelling-houses by casting the whole fabric in a single mould. The idea of the inventor is to provide small houses for working men at moderate cost, and thereby to aid the movement for depopulating the overcrowded areas of large cities.

Particulars and illustrations have lately been published in American technical journals of a two-story house 25 ft. by 30 ft. in plan. On the ground floor is a living-room 14 ft. wide by 23 ft. long by 9 ft. 6 in. high, and a kitchen 14 ft. wide by 20 ft. long by 9 ft. 6 in. high. From one corner of the living-room rises a staircase giving access to two bedrooms and a small bathroom. The attic contains two large but low rooms with windows of ample size for light and ventilation.

Apart from the foundations, the structure is cast in cast-iron moulds built up of several hundreds of pieces bolted together and providing for the formation of walls, floors, roof, mouldings, cornices, bath, sinks, troughs, and chimneys. Only the doors, door-frames, and window-frames are of wood, thus making the house practically exempt from fire risks.

There is absolutely no novelty in a concrete house, the special feature of Mr. Edison's invention being the proposal to cast all structural details in one mould

Digitized by Google

with numerous ramifications. Anybody could do the same thing by using a very liquid mixture of fine concrete or cement mortar. One obvious drawback, however, would be the segregation of the constituent materials, resulting in the collection of aggregate in the lower portions of the mould and consequent defects.

Mr. Edison claims to have invented a special variety of concrete which is capable of withstanding the influence of gravity, and thereby of maintaining almost perfect uniformity of composition throughout the construction. We are not entirely free from scepticism as to the practical validity of the claim, although perfectly ready to be convinced by satisfactory proofs. Granting the possibility of concrete with the apparently improbable properties mentioned, there would obviously be no structural difficulty in the way of casting an entire house in the manner proposed.

The system involves the employment of moulds and plant estimated to cost 5,000*l*., and in consequence could only be adopted by firms prepared to go into the business on a large scale. The net cost per house is estimated by Mr. Edison at 240*l*., including all interior fittings, a figure which, after the addition of builder's profit and incidental expenditure in connexion with the site, would probably bring the total quite up to the amount necessary for a house of equal accommodation constructed in the ordinary way.

An undesirable feature of the proposal is that all the houses cast will be precisely alike, unless the contractors are willing to lay out many thousands of pounds in the provision of extra moulds. To do that would necessarily mean increased cost per house, and we fear the general tendency would be to avoid any expenditure not absolutely imperative. We already suffer in this country from the monotonous repetition of designs in suburban and semi-rural districts, even in the absence of any necessity for such dreary multiplication. The Edison cast concrete system threatens to make things still worse wherever applied. Fortunately, the probability of its advent is not very great at present.

NOTES.

The Budget and Building. DISCUSSION upon the Budget covers almost as many subjects as are affected by this far-reaching Bill, but no subject has been more discussed than the effect which the Budget is likely to have upon the market for building land and urban property. The present effect of the Budget is most concisely stated in a letter in the *Times* of the 17th inst., signed "Past-President of the Surveyors' Institution." As the writer of this letter points out, the market for building land has been adversely affected by the uncertainty about the ultimate form and effect of the Finance Bill. This uncertainty alone is bound to retard the recovery of the building trade by the restriction of dealings in land. If the Finance Bill is passed in its present form, sales of building land, especially of small plots, must, at any rate for a time, be restricted by uncertainty born of the prospect of Government valuations, increased stamp duties on the transfer of the land, and the undeveloped land tax and increment duties, which will cause the buyer of ground rents especially to hesitate before investing in this form of security.

Development and Open Spaces. THE Secretary of the Commons and Footpaths Preservation Society has written a letter to the Chancellor of the Exchequer which deserves attention. His Society points out that under the Development and Roads Improvement Bill there is a danger that commons and open spaces may be compulsorily acquired without special leave being obtained from Parliament, and it is urged that a clause similar to that which has been inserted in the Housing and Town Planning Bill should find a place in the Development Bill. It is to be hoped that this matter may receive consideration, as there is a risk of such interests being overlooked when an important Bill is being discussed in Committee at the close of a long and exhausting session, and the closure is resorted to to save time. If the proposed tax on undeveloped land is to have the effect which the Government claim for it and to cause land in the neighbourhood of towns to be covered with buildings, the commons and open spaces will be more important than they have ever been heretofore, and they should be jealously protected.

St. Paul's and the New Bridge. MR. F. HERBERT MANSFORD, architect (of Ruislip), makes a suggestion in a letter to the *City Press* which we cordially support. He recommends that the proposed new bridge and the northern approach to it should be altered from the origi..ally proposed route, by which the new road was to start from the south-east corner of St. Paul's Churchyard, by bringing its commencement a little farther west, so that the bridge and the road on the north side should be axial with the dome and the south portico of St. Paul's, which would thus form a central object at the end of a long vista. It is one of the best suggestions in connexion with a London street improvement that we have seen, and we hope it will receive due consideration.

The Oval Lift Accident. THE danger liable to follow the unexpected escape of water from hydraulic apparatus was clearly indicated by the serious misadventure on the Blackfriars Bridge extension works. Another reminder is furnished by the comparatively harmless mishap on August 2 at the Oval Station of the City and South London Railway. From the Board of Trade report on the latter occurrence it appears that as the descent of the lift was being checked near the bottom of the well the copper pipe between the ram cylinder and the regulating slide valve was burst, owing to the heavy pressure caused by the too rapid retardation of movement when the cage was heavily loaded. Although the pipe in question was capable of withstanding the bursting strain of something like 5,500 lb. per square inch, or more than five times the calculated working pressure, Colonel Druitt estimates the actual pressure developed to have been considerably greater than the resistance of the pipe. We learn that the railway company are now replacing all pipes on their hydraulic lifts by others $\frac{1}{16}$ in. thicker, and, in addition, are fitting near each ram a relief valve, opening at the pressure of about 1,400 lb. per square inch, which will minimise the effects of any sudden shock. These measures ought to obviate any future mishaps. It should be noted that the safety devices on the hydraulic lifts only take effect if one of the lifting ropes is broken or abnormally slackened by any cause. In this respect the apparatus is less perfect than that of the electric lifts on the same railway, the latter having safety appliances which come into action should the cage speed exceed certain defined limits.

Reinforced Concrete in India. IN *Indian Engineering* Major Riach, R.E., gives an account of the manner in which reinforced concrete has been applied by Major Stokes-Roberts, R.E., to the construction of door frames, rafters, bressummers, columns, and other structural details employed in the new barracks at Jubbulpore. All the parts in question were moulded in advance as independent units, and afterwards erected much as if they had been of wood. Some instructive figures relative to the comparative cost of reinforced concrete and teak are given by Major Riach for a verandah 100 ft. long. From these data we gather that there is a saving bulk for bulk in favour of reinforced concrete of 3s. 6d. per cubic foot, or 1s. 10½d. per foot run of the verandah, the latter result being due partly to the lower cost of the combined material and partly to the increased spacing of the columns permitted by the greater resistance of the reinforced concrete bressummers. Adding the cost of painting, initial and recurring, the saving comes out at 2s. per foot run of the verandah. Therefore it is evident that in cases where reinforced concrete members can be produced in fairly large quantities a substantial gain can be realised by employing that material instead of high-priced timber. We may add that very similar experience has been obtained in this country as to the relative cost of reinforced concrete and timber jetties and wharves.

Timber Seasoning. TESTS conducted by the United States Forest Service show that the strength of well-seasoned timber is about double that of the green material. In itself that is an important matter for consideration by architects desiring to reduce the cost of structures, or to gain increased strength for a given cost. An advantage of well-dried timber to builders is that the cost of transportation varies directly as the proportion of water contained in the material. Lest this item should be thought too small for attention, we may mention the fact that recent investigations show the loss of weight due to seasoning yellow pine for about four months to be 50 per cent. of the original amount. Hence there must be a difference of 50 per cent. in the freight of green and well-seasoned timber. A third reason in favour of

Digitized by Google

seasoning is that preservative substances can only be injected with difficulty into green wood, and that even when injected it is almost impossible to secure uniformly satisfactory treatment.

Electric Damage to Water Mains.

THE Peoria Waterworks Company in America has recently obtained judgment against an electric tramways company in the same town. It appears that for many years leaks have been constantly discovered in the mains, and several bursts have occurred both in the 30-in. and the 20-in. main. It was proved that several of them were pitted by electrolytic action to a depth of more than half an inch. Damages have consequently been awarded to the water company, and the defendants are "restrained" from causing further injury. It is not quite clear, however, how all damage can be prevented without the actual shutting down of the whole electric supply system. In this country the dangers arising from electrolysis were recognised from the outset. The Board of Trade rules, although regarded by many engineers at the time as excessively strict and as needlessly hampering a new industry, have proved an ample safeguard. Although from the nature of the case electrolysis must be occurring, yet time has proved that the damage done is practically harmless. Another case which occurred in Winnipeg was recently reported on by Professor Herdt, of McGill University. Apparently the "bonding" of an electric railway was exceedingly bad, and the earth in the neighbourhood was a good conductor of electricity. In these circumstances it is not surprising that currents ranging up to fifty amperes were observed in metallic pipes in the basements of several houses. A fire which recently occurred in the city was attributed to these currents. Professor Herdt has recommended that the electric power should be supplied to the railway by means of various new sub-stations, and that special attention be paid to bonding the line at certain points. The remedy if adopted will be very expensive. This case proves the necessity of seriously considering the possible damage due to electrolysis when designing electric railway systems.

Water-Hammer in Steam Pipes.

MANY architects have necessarily to provide for the installation of steam boilers and pipes, and although only a small proportion of them may be thoroughly qualified to design the detailed arrangement of such systems, it is nevertheless desirable that the nature of the risks invited by unsuitable disposition should be clearly understood. Hence the report of Mr. Strohmeyer to the Manchester Steam Users' Association is a document that may be read with advantage, for this year it contains a valuable discussion of several causes leading to the explosion of steam pipes by water-hammer. Mishaps of the kind are considered by the author in nine classes, examples of each being illustrated by clearly-drawn examples and references to preliminary inquiries and formal investigations held by the Board of Trade. Each case is dealt with separately, evidence being quoted as to the origin of the accident together with such comment and other particulars as seem necessary for a proper understanding of the causes.

Town Planning.

A CORRESPONDENT sends us a circular emanating from a Company which seems to have been formed to take advantage of the recently aroused interest in the subject of town planning, and which advertises, "Surveys made and plans prepared for estates in any part of the country." We suppose we may next expect to see a notice-board—"Towns planned while you wait." This taking of the subject of town planning into the domain of the average surveyor is exactly what is to be deprecated. Town planning, as far as it regards the laying-out of towns or of building estates to get the best effect out of them, is emphatically work for an architect, and for an architect of genius, and not for the mere surveyor or for an anonymous Company. We recommend those who wish to know how their town can be improved to go to an architect of known ability, and not to imagine that it is a work that can be carried on as a mere business.

Eltham Parish Hall Competition.

AN advertisement appeared in our columns three or four weeks ago inviting competition designs for a Parish Hall at Eltham; no particulars were given, but only the name and address of the official from whom they could be obtained. An architect who applied for them sends us a copy of the instructions. The committee ask for a hall to seat 400 people, with cloak-rooms convertible into one room for small parochial meetings; hot-water heating, electric lighting, drainage complete to main sewer in centre of road; "total cost not to exceed 2,000*l*." The ideas of the committee as to the remuneration of the fortunate architect seem to be on a par with their knowledge as to the cost of building. They ask for specification as well as drawings, and undertake either to employ the architect of the selected design to carry out the work, "or to pay him a premium of fifteen guineas for such design," which in that case is to be "the absolute property of the committee." Need more be said?

Hackney Parish Church.

A FUND is open for the repair, at a computed cost of some 1,600*l*., of the roof and for improving the sanitary condition of the fabric. The church was built in 1791-7 after James Spiller's designs for 2,500 sittings, near the site of the former parish church of St. Augustine, which, with the exception of the middle XIVth century tower and the Sir Henry Rowe memorial chapel (built in 1614), was then pulled down. The nave and chancel had been rebuilt in 1517 by Christopher Urswick, Dean of Windsor and Rector, and Sir John Heron, master of the jewel-house to King Henry VIII. The present church is remarkable for its square plan having a projecting face, 21 ft. deep, to each elevation, as well as for the large open area at the cross, 63 ft. square. The projecting face on each side has a pediment; the doors and windows are set in arched recesses. Around three sides of the interior, which measures 105 ft. each way, is a gallery carried by Doric columns. The steeple and five entrance porches were added in 1812-3. The former church was rich in brasses and monuments, some of which are preserved. The registers record the burials of Edward De Vere, Earl of Oxford; George, Lord de la Zouche; John Nevil, Lord Latimer; and Henry, Earl of Northumberland, a suitor for the hand of Anne Boleyn, who died 1537, at Temple Manor House, so named after the Knights Templar, who, with their successors the Knights of St. John, followed the rule of St. Augustine—whence the dedications of the two churches—and at one time owned the manor. In our number of December 5, 1891, is reproduced a drawing, 1805, of "The Templars," latterly "Bob's Hall," pulled down in 1825, which stood in Church-street, and was, with the "Priory" in Well-street, a reputed habitation of the Knights.

Memorial Statues in Paris.

PARIS will possess shortly considerable and important additions to her already very long list of sculptural monuments in memory of eminent men. M. Rodin is just completing the statue of Puvis de Chavannes, which will be erected on the Place de l'Alma. The statue of Sardou will form a pendant, on the Place de la Madeleine, to that of Jules Simon, and will replace the graceful fountain erected from the design of the architect Davioud. François Coppée, the poet, will have his statue on the Boulevard des Invalides; that of Zola is to be erected on the Place Dauphine; and that of Mdme. de Staël on the Boulevard Malesherbes. Lastly, a monument in honour of the inhabitants of Alsace and Lorraine is to be erected in front of the Gare de Strasbourg. On the other hand, it is gratifying to learn that the Municipal Administration have refused to sanction the erection of an absurd monument which a private committee wished to erect in the Square Saint-Pierre, at Montmartre, in honour of that sinister figure of the Revolution, Marat.

THREE SCHOOLS FOR WATERLOO, NEAR LIVERPOOL.

THE suburb of Waterloo, which is situated on the main channel of the Mersey to the north of Liverpool, is about to have three new schools; two elementary ones and a secondary and technical school combined. The latter has been designed by Mr. Littler (Preston), the County Architect, and the two former have been put out to competition. The drawings of the secondary school, which have received the approval of the Board of Education, and the various competition designs for the elementary schools have been on view at the Town Hall, Waterloo, during the afternoons of 16th, 17th, and 18th inst.

The secondary and technical school is a large building with an extended front to Cambridge-road. The secondary school is on the ground floor, with twelve classrooms, and the technical school on the first floor, including cookery, laundry, lecture-room, chemical and physical laboratories, and art-rooms. The long symmetrical front is to face south, and shows that the Council intend to spend more money on the secondary than on the elementary schools, in regard to external treatment. The design is above the average, but we should prefer to see

Digitized by Google

fewer brick and stone stripes, which appear suddenly in pediments and on door jambs.

The Assessors in the competition for the two elementary schools were Mr. Percy Worthington, of Manchester, and Mr. H. T. Buckland, of Birmingham, nominated by the respective architectural societies of those towns. Local architects were invited to compete, and seventeen schemes were submitted for one school and sixteen for the other; the successful architects for both schools were Messrs. Appleyard & Quiggin, of Liverpool. It is interesting to note that both these sets were drawn on tracing-paper, mounted. We feel that attempts at fine draughtsmanship in a school competition, where every penny on elevation has to be saved, are misplaced, and the great saving of time effected by means of tracing rough pencil sketches and having them mounted is an economy of some moment. We would suggest that in place of the "Beaux Arts" rule that no drawings on tracing-paper will be accepted, competition committees for this class of work should insert a note to the effect that mounted tracings may be submitted. Of course, this would not apply to monumental designs.

The two schools are not quite similar in requirements, and both were to have one complete portion built first to accommodate children of both sexes up to Standard III. In each case there was to be an infants' department, but the block to be erected first was to be slightly larger than the infants' block, suggesting the immediate erection of the senior block to be used temporarily by the juniors.

The school situated in Crosby-road North was to be on a tapering site with access from a road on one narrow side only. There were to be three separate departments for 350 boys and girls severally, and 300 infants.

Messrs. Appleyard & Quiggin have placed them in two separate blocks, the girls on the ground floor with the boys over in one block, and the infants in another.

Each block has an assembly-hall, and the senior block has a cookery-room, with separate entrance on the ground floor and a science room over. The manual instruction-room was placed at the back of the site over the boys' playing-shed. Particularly good was the disposition of the blocks on the site, leaving the boys' playground to the rear, and the girls' and infants' of a well squared-up shape on the Crosby-road; a third playground connected with the latter by a narrow passage between the two blocks would be useful perhaps for the boy infants. The heating apparatus was neatly placed under the two mistress's rooms where the two blocks approach nearest, thereby connecting them underground and placing both boilers under one control.

The Ranson-road school was to have a mixed department for the senior scholars of about 420 and an infants' department of about 180, together with a special subjects' department for girls to be used by other schools in the evening, containing cookery, laundry, and housewifery centres.

The site is a regular rectangle with two sides to roads. Messrs. Appleyard & Quiggin have kept their main buildings one story high, and have placed them contiguously, making a long front facing south to Elm-drive Each block in itself is exactly symmetrical, and the playgrounds are wisely placed at the back of the site. Both blocks are well arranged and simple in the extreme. The main block is roughly of the T-shape, with classrooms forming the short arm and entrances at its extremes, and the assembly-hall with classrooms on either side for the long arm. The special subjects' department is placed on the north-east corner of the site on Ranson-road.

The elevations of both schemes are plain and not elevating—no limit of cost was given, but the competing architects were to state the price their schemes could be built for, and they were warned that economy was to be practised. With these conditions in view we think that these elevations were adequate. Many of the other designs submitted were more attractive in elevation; but where so, they were all more costly. We are sorry, however, that materials out of keeping with the local characteristics of Waterloo were stipulated for in the conditions of both schools.

THE SUPERVISION OF HOUSE DRAINAGE.

By a Clerk of Works.

Of all the component parts of a building contract, no one class of work calls for more attention than the proper planning and construction of house drains; they are, when completed, out of sight, and in most cases, after the occupation of the building, out of mind also, and the writer, as a district clerk of works engaged on the maintenance of buildings after occupation, can from experience testify to the very great need of exact and careful supervision required in the drainage work of the contract, as he has received in the course of a few years not one, but many complaints of obnoxious smells from buildings—only completed and occupied a few years previous, where the planning of the drains was all that could be desired, and the construction had been under the supervision of trusted clerks of works, but which, upon retesting even by so mild a test as "the smoke test," has left no alternative but to condemn the drains and relay them *in toto*.

The quality of the materials used in house drains, as also the quality of the work, must be the best; it is useless to combine best workmanship with inferior materials, and equally as futile to use good materials with inferior labour. The clerk of works must know both when he sees or meets with them, and know how to act in either case. A few words on materials can now be given.

We have fireclay, stoneware, and iron pipes, and different qualities and finishes of each, and also different ways of jointing them, each of which have champions who urge the superiority of their own articles or methods over the others. Briefly we have: first, fireclay pipes, in themselves more or less absorbent, but rendered non-porous by being salt-glazed or enamelled; second, stoneware, according to its quality almost or quite impervious without the addition of glazing, but rendered quite so by the latter; third, iron pipes, in longer lengths and consequently fewer joints, certainly impervious, but liable to rust, etc., unless glass lined or coated with some preservative solution; costing more for materials per foot run, but less for labour per same unit, as concrete covering can be dispensed with.

The special or patent joints for stoneware and fireclay pipes are numerous, most of them have some additional merit over the ordinary spigot and socket-cemented-in joint; also the cost is much increased by using these patent-jointed pipes, which may or may not be compensated for by the greater security afforded by them. Iron pipe joints are of blue lead—the spigot end of the one pipe being centred in the socket of the next pipe by means of gaskin or lead rope—the last being much preferable as being non-decaying.

No matter what class of pipe is specified, the clerk of works must be careful to inspect each and every one before it is laid, looking out for cracked collars or split pipes, inferior glaze, warped or twisted barrels, proper depth of collar, etc., and generally see that he obtains only the best of the quality asked for by the specification. If tested pipes are to be employed, then each pipe must be so marked, which is usually done in stencil. A pipe with the word "tested" branded in was obviously not in a condition to be so classed when the actual branding was done. Iron pipes can only be inspected for their trueness in shape, uniformity in the thickness of the metal, their smoothness of casting, their proper coating if so ordered, and also as to their weight per specified length.

In the inspection of the materials a few rough tests of their quality can be made. It is not easy to tell a drain-pipe of glazed fireclay from one of glazed stoneware from the outward appearance, but by chipping a piece off and putting the fractured piece to the tongue, the fireclay pipe can be distinguished from the stoneware one by the former sucking the saliva up. Another ready test to ascertain whether the make of pipe is fit to be used is to cement a cut-to-shape piece of slate in the socket end of the submitted pipe, and, when it is thoroughly set in cement and dry, to set the pipe on its socket end and to fill it up, marking the height of the water by some such ready means as by placing a piece of stamp-edging paper at the water-level, and noticing the sinking of the water after some few hours, the lowering of the water indicating a porous pipe unfit for use. Cracked pipes can readily be discovered by striking them with a light hammer—a whole pipe will emit a clear ringing note; a split pipe will only give a dull one. To test the truly cylindrical shape of the pipe, a solid wooden template of pipe length, slightly less than the bore of the pipe in diameter, can be passed through it. It should not be necessary to point out that only straight and true shaped pipes should be used, as one bent in its length may, according to the way it is laid, form a dip or an arch or a bend, all of which are objectionable, as allowing sediment to accumulate, or retarding the flow of the sewage through the drain.

It goes without saying that fittings such as gullies, surface-water shoes, traps, etc., require to be as carefully inspected by the clerk of works as do the straight lengths of drain-pipes, and the inspection must not be confined to the perfect condition of the article from a manufactured point of view, but close attention must be paid to see that the fitting is the proper one required for the position, that its outgo or inlet is set at the proper angle, and unless the specification or quantities particularly specify stock goods—which is most unlikely—the clerk of works will insist on purpose-made fittings being procured if stock ones do not *exactly* meet the requirements of the case.

The matter of the materials can now be left, and the actual work of construction be briefly noticed. The ideal of drainage is straight lengths of drains between inspection-chambers—straight both in the horizontal and vertical planes—and inspection-chambers should be provided at all bends or turnings, also they are advisable at changes of gradient. Briefly, straight lengths and true gradients are essential. The stretched line is one way in use for effecting both of these requirements, but the method of boning rods and sighting rails is much more accurate and reliable, as a stretched line will sag when in long lengths or in strong winds.

Another essential to good work is to have the trenches properly dug, of the correct depth and to the correct fall, and of a sufficient width to allow of laying the pipes truly and well. A firm bed of concrete is necessary for stoneware pipes in most soils, and where such pipes are used under buildings the whole pipe must be surrounded with 6 in. at least of similar concrete. The clerk of works will see that he gets a proper bed, a sufficient thickness of concrete covering, and that the pipes are not laid until the bed is inspected, and the covering not put on until the pipes are tested, and the trench not filled in until the concrete covering has been passed—that is, each separate step in the construction must be first inspected and approved of before the next is proceeded with.

Other brief items calling for the clerk of works' attention are:—

(a) The inside of the pipes must be carefully wiped out to remove any cement, etc., that may have exuded through the joint

and which, if left in, would soon be the cause of stoppage.

(b) That all traps really act as traps; in some makes the water seal is so small that to set the trap the slightest degree out of level is to lose the seal altogether. All traps must be left perfectly clean and free from sediment or other matter; it is reported that a piece of string, that adhered to the trap by means of some patches of cement left in after the water-closet pan was set, was the direct cause of unsiphoning the trap—a small cause, but one that is said to have proved costly to discover and remedy.

(c) That when drains pass through or under walls, arches or other means are provided for carrying the weight above them.

(d) That scaffold poles, etc., are not placed in position over the run of drain-pipes, as when withdrawing them damage may be done the latter by disturbing the soil or the concrete bed of the drain.

(e) That the water and other tests, in accordance with the clauses of the specification, are properly applied, and that the test is really a test.

(f) That the filling in of the trenches is carefully done, and no ramming allowed until at least there is a 3-ft. covering of earth over the drain-pipes.

(g) That the closets and other fittings are left perfectly clean upon completion of the works.

(h) That proper copper or bronze ferrules are supplied and used for connecting lead soil-pipes to iron or stoneware drains.

It is not proposed to give any further notes in this article on the leadwork of a drainage system, including the ventilation and anti-syphonage of sanitary fittings, as plumbers' work will form a separate article in which the supervision of external and internal plumbing work will both be dealt with.

The clerk of works should before the drainage work is begun make himself acquainted with the by-laws of the district in which the work is situated, and then carefully check the drawings and specification to see they comply with the same, and at any rate be sure to have the whole system finally settled upon before the contractor has to commence the work, as frequently the drains cannot be carried out as shown on the contract plans, for reasons, maybe, of construction, alterations to the original planning, etc.

The clerk of works should check the depths of the various manholes, and ascertain from the local surveyor the depth of the sewers at the points connexions to them have to be made, and, as in most cases drains are hidden items, he should take careful measurements and notes in case there are variations on the contract, etc., to be adjusted at completion, and from the plans and his notes prepare to scale a drain plan showing exactly how the work has been executed; this plan, after the final test of the drains, he may be called upon by the architect to sign, certifying that the drains proved sound and perfect under the tests.

DECORATIVE ART FOR THE MASSES.

THE following is the principal portion of a paper, under the above title, read by Sir W. B. Richmond at the Sheffield meeting of the National Association of Decorators:—

"That the trade, or, as I prefer to call it, the art of the house painter and decorator in its broadest sense bears with it great responsibility goes without saying, because it deals with matters of everyday concern as applied to utility, permanence, as well as far-reaching lessons on æsthetics. By the judicious and tasteful exercise of your calling you must exercise influence upon the masses. by a dignified reserve which you can exhibit and inculcate among countless numbers of people more or less ignorant of the highest qualities of pictorial art. The range of your influence is enormous, even extending from the peasant's cottage to the prince's palace. Granting it to be so, you will not tell me that I exaggerate the responsibility of your calling.

In every art, from literature to the humblest handicraft, proportion and reserve play prominent parts. In the decorative arts each section, from the simplest to the most complicated, should be the best of its kind. What is applicable and essential to the needs of one section of a community is not so to another, yet "simplicity" should be the *lest motif* of the most elaborate as well as of the most immature decoration. "Exuberance" has its merits as "plainness" has; each is consistent in its own degree of environment. Perhaps I should define what I mean by the maintenance of simplicity or plainness, even when combined with exuberance. I mean that the underlying structure should never be lost sight of, that the roots of any design in form or in colour should never be masked by or buried under a complexity of ornament. Decoration can be plain and simple without being dull or uninteresting. It can be exuberant also without loss of reserve and dignity.

If I have made myself understood, you will recognise that while I accept elaboration and splendour of design, as well as detail, to be admissive, they are only to be judged so when in agreement with the object they are called on to fulfil or illustrate, and are in harmony with the "status" or "class" of the people they accommodate. As in life, so in all the arts, ostentation and incongruence are vulgar. By vulgar I mean something pretentious, seeming to be what it is not, to emulate a sphere outside the boundaries of consistent classification. No decoration should appear to have cost more money than it has done. Directly it does so it is open to the stigma of ostentation, hence is vulgar. . . .

Therein is your difficulty, and as wealth increases facilities for vulgarity grow. As steam engines rotate more and more, the market will be growingly flooded with shams, and until good taste is taught with axioms as definite as arithmetic, and the teachers believed in, supply will equal demand for cheap and nasty, vulgar or glaring design, in preference to what is lasting, modest, and beautiful. Setting aside the difficulties which the last paragraph has stated, and recurring to my original statement that you are artists, therefore you should be leaders, I will consider with you the decoration of a sitting-room of a small house of a rent, say, of 50*l.* to 100*l.* a year. The number of such is legion in every large town.

We will say you are called in to paint and generally furnish a room of such a dwelling. The wall-paper will probably be the first item. In nine cases out of ten, supposing you take a roll of wall-papers to your client to choose from, the chances are he will make choice of the worst, the most gaudy, and, at the same time, the cheapest, the most ostentatious appearance at the smallest cost. That will disconcert you. Presently you will be consulted as to curtains, blinds, carpets, and furniture. The same difficulty will arise. Your client will tell you "he knows what he likes." That may be so. He may like bad grammar and bad English, but his doing so does not prove that either is correct or desirable.

This is a gentleman that stands badly in need of education. If you are strong through experience and well-earned conviction you may convince; if not, another monstrosity of a dwelling-room will be added to existing millions. For some reason a wall-paper is an undesirable comparison. If of best material and first-rate design it is expensive; good or bad, however, it is difficult to cleanse. It may be the habitat for germs, harbouring in the old paste a decaying paper. There is disinclination to remove it. Too often, instead of being stripped, another paper is added. Thus a new system of germ is encouraged and inhygienic deposits are deposited.

There are some excellent distempers which fix powder colour, are washable and permanent; the use of these I strongly advocate. Tints are now obtainable which can be brought into felicitous harmony. I would advise you to select the lightest tones. Under present conditions of the atmosphere of towns and cities, light rooms are essential on every account. It is true that dirt is more visible on light than on dark objects. The dirt is there, a sign that cleaning is needful. Surely it is better to see dirt than not. A visible evil is combatable; hidden, it is dangerous. On the whole, the most effective, healthiest, pleasantest to live in is a *white room*. There is no white so pure as lime; no product is so successful in the slaughter of offensive animal matter. Lime is cheap and efficient. Every coloured object, save dark ones in large masses, looks well upon white, which, in my opinion, is the safest of all tints to use in large quantities.

A very little ornament skilfully applied in pale and quiet tints will look precious on a white ground. White is the enemy of gloom; its relationship with dark and heavy tints is distant; it seems to ask for, almost demand, a scheme of colour reminding of delicate spring flowers. White is sensitive to every change of direct and reflected light; white walls will almost double the appearance of the area they environ. It is exhilarating to the nerves and a constant æsthetic comparison, as every change of light will enhance or modify the colour of reflected light, producing delicate tints on the surface from pale violets, blues, rose colours, and orange, and the luminous grey it assumes in shadow is always restful and beautiful. I ask you to give attention to this suggestion.

We all know that white lead, mixed with oils or varnish, becomes in time discoloured, often in disagreeable patches, and finally degenerates into a nasty putty colour. I recommend the avoidance of oil or varnish white lead on walls. The washable distempers to which I have alluded supply a want and deserve given attention and renewed experiment. I see around me many instances of the success of washable distempers.

Painting of wood deserves attention, and must be done with judgment. We all know that in old days woodwork was invariably coloured; but between it and the pigment was laid a thin ground of "gesso," or plaster and glue, whereon tint and gilding were applied, rarely, however, mixed with oil or varnish. No doubt this system is a preservative one against damp and the worm. So many instances are easily accessible to give that I need not enlarge on this subject, save to say that ornament on or the colouring of wood is a delicate problem. However, this much we all agree to, the colour it receives must be in harmony with the walls, neither too much darker or lighter, however different the tint may be. If the tone of the colour is in excess either way, it will make a spot and injure breadth, so essential to all good colour decoration.

A blue room will stand a good deal of red, if the red and blue are nearly alike in tone value. Much red in a green room will prove inharmonious. In a white room pale blues, yellows, cool roses, and greens will harmonise better than any red which approaches a terra-cotta tone. Before you attempt ornament—that is, pattern—the colour of the walls and woodwork must be determined and executed. Then, a very little judicious pattern will suffice to satisfy the eye, please the sense, and gratify the fancy; but ornament should come *last*, not *first*, and appear to have grown out of the structural tones of colour.

It is undesirable to varnish woodwork; it had better receive a subdued polish. This is attained when the paint is quite dry by covering it with a thin coat of wax and petroleum; a delicate polish can be obtained by rubbing the surface gently with a soft old rag.

You will observe that I have only incidentally alluded to ornament. Of course, in

Digitized by Google

every instance, one would prefer freehand painting to any artificial substitutes, but the best freehand painting is expensive. On woodwork I should certainly deprecate any but hand-painted patterns, but upon walls, as dado or frieze, stencils may be used. It is, however, useless to attempt to mask the monotony caused by any mechanism, though some of its more disagreeable adjuncts may be ameliorated. Stencil should remain obviously stencil. I have seen very agreeable results obtained when it has been frankly adopted, and I do not think that stencil as a cheap factor for tasteful and inexpensive pattern decoration has received the attention and amount of experiment it deserves. It has one obvious merit, flatness; it has another, "fancy" may be let loose and be pretty freely exercised within certain limits. Stencil has another possibility, it permits the use of a great variety of tints which may be so agreeably varied that the machine-like monotony of line design may be modified, even rendered useful and charming. I can imagine a Japanese artist using the stencil as a colour agent with the distinction and delicacy he employs in the art of colour block printing.

I have said nothing about the use of gold as a pigment. Real gold is expensive, and no shams must come into our scheme.

A word or two about the framing of prints or photographs. Pictures do not come within the limits of expenditure in the case we are considering; better no pictures than bad ones. When we consider the cheapness of good photographs taken from the best existing art of all kinds of architecture, sculpture, painting, and all the allied arts, and the reprints of engravings, the walls of a room may at very little cost be furnished in their reproductions of the masterpieces of the ancient and modern world. Photographs and prints tell best on a white wall, if their margins are kept quite narrow. The touch of colour may come into their frames, which may be narrow reed pattern, coloured black, red, green, or blue; thus they may become pleasant notes of local colour which will redeem from monotony the quiet tints of the walls, furniture, and woodwork.

A word on carpets and furniture. In carpets there are, I confess, in my opinion, few English which are interesting in design or satisfying in colour, but now the constant importation of oriental rugs renders good material, fine design, possible to a limited purse. A carpet which covers the whole floor is surely undesirable. The dirty habit in the north of retaining the same shoes on our feet within our rooms that we wear out of doors is productive of the importation of dangerous germs and filthy produce where this should be sedulously kept out. To be really clean and healthy, carpets should be taken up once a week and the floor scrubbed.

There are some simple patterns of linoleum, a good wearing substance, quite inoffensive in design. These I advocate from experience, especially if they are waxed as wooden floors are, and then polished.

As to furniture, the simpler the better, always of unvarnished wood, and without distressing swirls and inconvenient edges so common in that much-to-be deplored "L'Art Nouveau." A long settee made of pine, painted or stained an agreeable colour, furnished with a mattress and plenty of cushions, will form an admirable sofa, providing room also for several people to use as a seat. Where electric light is used, its fittings should be of metal and of simple design.

Here, then, I have given you a type of a dining or sitting room. If some of you more accustomed than I am to provide estimates will calculate the cost, I suspect it will prove to be moderate, and within the limits of expenditure suitable to a small income. It would be a room into which a person of good taste might be ushered and not wish himself away, and one which should encourage good spirits, good health, and would with careful management be kept clean and orderly.

For the "lodgings," rather "dens," of the poorest classes, I can offer but one suggestion, that the Borough and County Councils should be granted powers to oblige landlord to limewhite them out once a year. As rents are now, it would do the landlord's moral nature good and his purse little harm if he were forced by law to consider the health of the poor creatures who only too often come within his avaricious clutches.

It is safe, I think, to suggest, perhaps to assert, that an ascent starts from a lower plane. It may start, of course, from a mountain peak. The mass of the middle class is an enormous element to move. It has been my experience that there is a truer, more refined intuition among country than among town folk; they have less to choose from, especially in villages distant from sham civilisation. A little knowledge has been called a dangerous thing; you must come upon a great deal of that article.

If there is one thing above all others to which people are inclined to hold on to with tenacity it is their *taste*, or what they believe they like.

All very well, but there is a reason for every law of taste as surely as there are laws of geometry, which, if not understood instinctively, as they have been in very rare cases, have to be taught. The majority do not like being taught anything but what is profitable; they imagine art to be outside every law, to be a disposition in everyone, innate and incontestible, "I know what I like" being a sufficient answer to every objection. Of course all the facilities, heterogeneous monstrosities, hurled from factories one after the other in chaotic confusion, form opportunities for the spread of bad taste or *no taste*; how should it be otherwise? Then another factor in your difficulty is a craze, a momentary volition towards some style set into vogue by a leader in fashion, it may be Georgian, Queen Anne, Louis XIVth, Empire, quasi classical, even approaching mediæval, but there it is for the time, as a kind of epidemic. You are called upon to serve every mood, hence firms who would be inclined to progress and improve along one settled sensible line have ever to be on the watch to supply an immediate revolution which arrives from somewhere, holds its position firmly for a few months only, to be driven out of place by some new and more extraordinary departure.

Fashion and folly are sisters. The public is ever shifting and changing, because it does not really know what it wants; like a tiresome child it wearies of toy after toy, even of the most extravagant and monstrous. It needs teaching. Was it not Lord Beaconsfield who said, "We must educate the party"? Yes; but how? Do constant experiments help that? Is it always the novel or seemingly new that is desirable? And in your experience is there not the stickler who tells you, "I like what I am used to," and the other extravagant bungler who says, "Give me something new"? You are indeed in an extreme case.

Lectures may do something, books may enlighten the literary side of our question, but a steady determination of all firms of house decorators to cultivate their tastes on the very best models, to stand firmly against the vagaries of their clients, is unquestionably the surest chance of amelioration of taste."

NEWBURY MUNICIPAL OFFICES.—The Local Government Board recently sanctioned a loan to defray the cost of pulling down the Georgian Town Hall at Newbury, the widening of Mansion House-street, and the building of an additional block of municipal offices upon the improved site. The designs have been prepared by, we gather, Mr. S. J. L. Vincent, A.M.Inst.C.E., Borough Surveyor, and a tender of 2,460*l.* has been accepted from Mr. J. Plumb, of Newbury. The new buildings will harmonise in style with that of the adjoining block. The provision of a new town hall will be undertaken hereafter.

THE GLOBE THEATRE, SOUTHWARK, AND ITS SITE.

A MURAL monument will be erected shortly in Park-street, Southwark, as a memorial of Shakespeare's Globe Theatre, 1598-1613. The site lies within the north west corner of Barclay & Perkins's Anchor Brewery, and was latterly occupied by Thrale's town residence. The playhouse was built in the winter of 1598-9, in the Liberty of the Clink, Bankside, for Cuthbert and Richard Burbadge by Peter Street, carpenter, who used the wood and timber of their father James Burbadge's playhouse, The Theatre, in Holywell, Shoreditch. The Globe is frequently cited as the model to be faithfully followed in the building, also by Street, of the Fortune Theatre in Golden-lane, Cripplegate Without, for Alleyn and Henslowe. Street's portion of the indenture for the erection of the Fortune, for 440*l.*, and executed by him on January 8, 1600, is preserved in Dulwich College.

From that specification, as we may call it, we learn that "this wooden O," Ben Jonson's "glory of the Bank," consisted of a wooden "frame," raised upon a brick substructure and roofed with thatch, which contained three galleries, the "ground," or "yard," being open to the sky. Opposite the chief entrance the frame was carried up higher for an attic, having a thatched gable, wherein were a gallery or balcony for scenical purposes and the actors' "tiring-room." The stage extended into the middle of the "ground"; over its rear portion was a thatched roof, called the "shadow," or "heaven," supported by two stout columns resting upon the stage. The only known contemporary drawing is that by Hondius of 1610. Those of the audience who went by water landed at the adjacent Horse-shoe-alley and Bank-end stairs. Malone recites in full the contract made, 1613, by Gilbert Katherens and John Browne, of St. Saviour's, bricklayer, for the building of the Hope "in all things and in such form and fashion as the Swan" (in Paris Garden, Bankside). A drawing of the interior of the Swan was discovered by Dr. Karl Gädertz twenty years ago at the Utrecht University Library, in a Latin MS. album or "stammbuch" of Arend van Buchell. The album contains a short account of the Rose, the Swan, two other theatres, and a bear-garden. The drawing is lettered, "Ex observationibus Londinensibus Johannis de Witt." It is conjectured that De Witt visited London in 1596 and that Van Buchell's notes are derived from a now lost MS. of his friend De Witt.

A model of that, the first, Globe, made to a large scale by Mr. Poel, of the Elizabethan Stage Society, was exhibited in the Hall of Clifford's Inn seven years ago by the Shakespeare Commemoration League: in our issue of May 10, 1902, will be found a description of the drawing. As rebuilt in 1613-4, after the fire on St. Peter's Day, which Jonson commemorates in his "Execration upon Vulcan," the second Globe, octagonal on plan and having a tiled roof, is delineated in C. J. Visscher's riverside view of London, 1616-20. It was finally pulled down in April, 1644, by the owner, Sir Mathew Brand. Globe-alley, court, and walk were built upon and around the site.

Dr. Rendle fixes the site of the Globe as being bounded to the south and west by Globe-alley (now absorbed in Bridge-road), to the north by Maid-lane (since Park-street), and to the east by Deadman's-place (since Park-street). The Wadsworth family, owners of Globe-alley, built, and it is said on the site of the theatre, a chapel for Thomas Wadsworth, an ejected minister, to whom succeeded there Richard Baxter. The chapel gave place, says Chalmers, to John Whatley's windmill—a mill for pulverising stones and bones. Shakespeare bought New-place, Stratford-upon-Avon, in 1598, and ceased to act at the Globe in 1604. It is said that he was living in Bankside

Digitized by Google

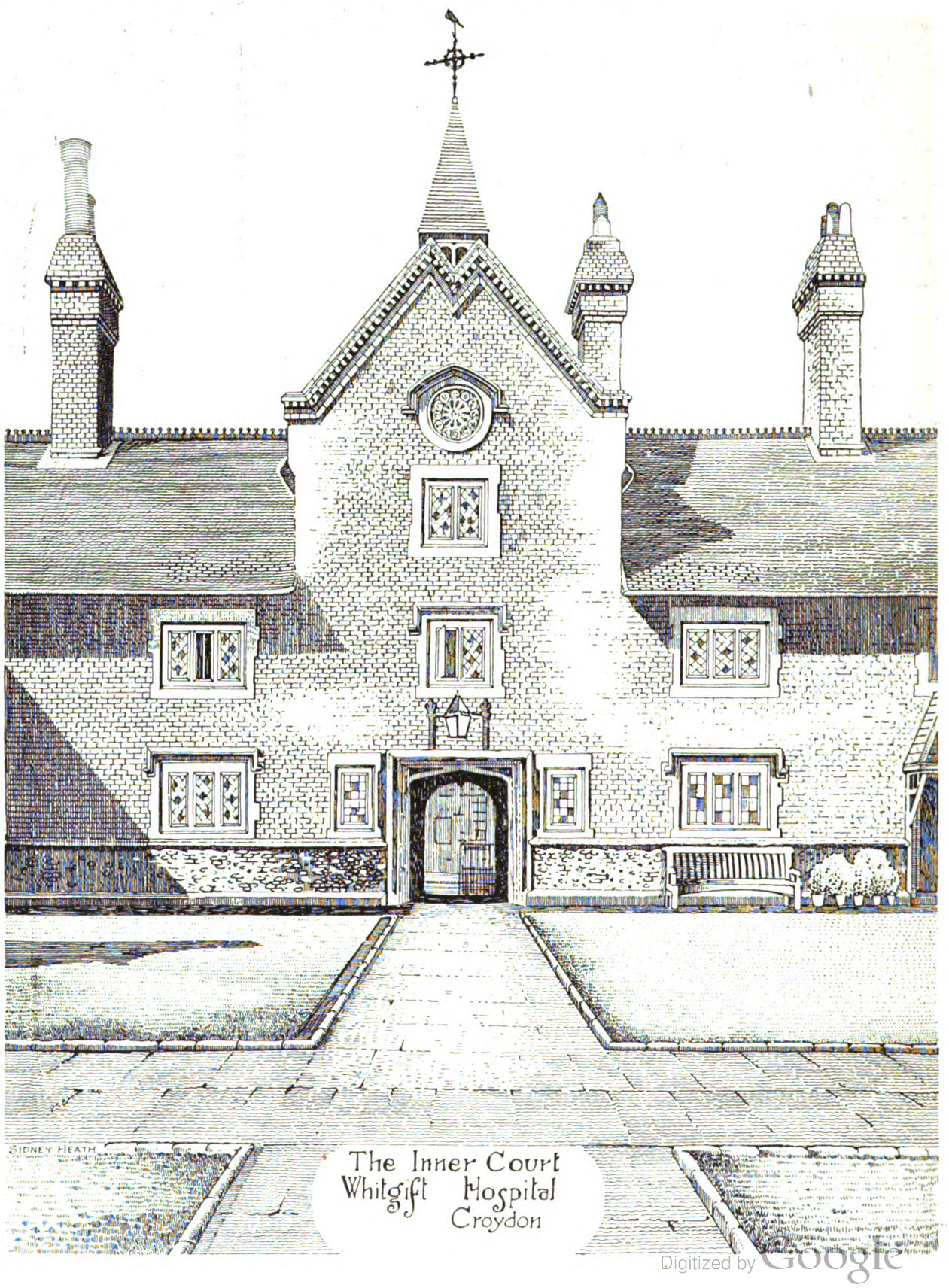
in 1596: he was assessed for a house in Clink Liberty in 1596-1609; the house was in the still existing Bear-garden, and stood, reputedly, on the site of the White Bear public-house.

The memorial has been executed in bronze by Professor Lanteri, after a general design by Dr. William Martin, F.S.A., for the Shakespeare Reading Society of London and other subscribers. The design embodies a medallion bust of the poet, with the theatre and Bankside, and the Thames and London Bridge in the background.

THE INNER COURT, WHITGIFT'S HOSPITAL.

THE accompanying illustration of the inner court of the Whitgift Hospital (an illustration of the exterior appeared in the *Builder* of July 31) will convey some idea of what the inhabitants of Croydon stand to lose should this fine remnant of Elizabethan architecture be demolished.

The hospital was dedicated to the poor brethren and sisters of Croydon in 1599, but the authorities of 1909 consider its removal essential for the purpose of widening the roadway. It has been pointed out that the congestion of traffic at this particular spot has been much exaggerated, and even were it not so no one appears to have suggested pulling down the public-house on the opposite side of the way. The crux of the whole question appears to lie in the fact, to which attention was called by one of the Councillors, that whereas the adjacent property pays 330*l.* per annum to the rates, the Whitgift Hospital contributes only some 50*l.* per annum. The Council appear to have an eye on a large income from the site of the charity. The suggestion of Mr. John Burns, as President of the Local Government Board, that a poll should be taken of the whole of Croydon is a step in the right direction, but such plebiscites generally cause much local bitterness of feeling, and resolve themselves into a tussle as to which of the two contending parties can muster the greater number of its supporters at the poll. As the Archbishop of Canterbury says, in a letter to Sir Frederick Eldridge, Chairman of the Whitgift Governors: "In every part of England wise and thoughtful men are watching to see what stuff we are made of, and whether we are prepared to sacrifice some money advantages for the sake of saving our borough's most interesting possession."



Digitized by Google

When one considers the purposes for which borough councillors are elected, and their temporary tenure of office, it is a matter of amazement that such a vicariously constituted body should have the power even to suggest, in their official capacity, the demolition of a building that has weathered the storms, political, religious, and social, of three centuries. Such a building is a national monument, and is local only in its situation and in the administration of its funds. The question of its preservation or demolition should be removed entirely from the sphere of local influences, interests, and politics. As the Archbishop so truly observes, all England is indeed waiting to see of what stuff the townsfolk of Croydon are made.

SIDNEY HEATH.

LONDON COUNTY COUNCIL CENTRAL SCHOOL OF ARTS AND CRAFTS:

EXHIBITION OF STUDENTS' WORK.

A YEAR has now passed since the opening of the new London County Council Central School of Arts and Crafts in Southampton-row, and the exhibition under notice is the second which has been held in the new building. While we cannot point to much that gives evidence of more than average ability, an excellent standard is maintained in most cases. To give the Mistress Art her fitting place, we will notice the architectural designs first. Two designs for a country church, the site a sloping hillside, reflect great credit on their authors. Mr. C. C. A. Hobbs has, we think, produced the most pleasing elevations, and the general effect, as set forth in his perspective, is exceedingly artistic. It was supposed that only unskilled labour could be procured, and Mr. Hobbs has conceived his scheme accordingly. His east window has three lights, with intersecting tracery in the head. This tracery is formed of straight lines, the curve being eliminated from the heads of the lights, though not from the containing arch. This concession to the supposed unskilled labour is far from unpleasant, revolutionary as it sounds in the telling. We do not care much for the comparatively shallow chancel. Masonry arches carry the roof, as in the design by Mr. W. Loveless, which is drawn much more attractively, but is not, we think, as good in proportion as the former.

A terrace of houses was a not very inspiring subject. The terraces in Regent's Park show how unsatisfactory the attempt to reduce a row of dwelling-houses to uniformity must always prove. By a peculiar fatality, the mere fact of living in a house which forms an element of a larger architectural whole invariably induces some tenant to embark on additions which he would not otherwise think of. The design of Mr. E. F. Tomlins is in XXth century Renaissance, and not a very great improvement on Nash or Decimus Burton; but, indeed, it would be hard to make much of so unpromising a subject. Mr. F. G. Mitchell has adopted an astylar treatment, and his scheme is comparatively successful. We should like, however, to see his ground-floor plan, which would, to judge from the elevation, prove a distinct novelty. Mr. G. A. Bryan's design for a cottage is well drawn and well thought out. Mr. S. Howard Jones's "Seaside House" is a workmanlike design.

A cartoon for stained glass with no name attached, the subject, "And the Prince came armed like a freeman's son," is excellent. The lead-lines form a part of the design, as they should. "St. Elizabeth," another cartoon for stained glass, by Mr. A. M. Robinson, is also a good design, on the right lines.

Some good studies of interior decoration were shown, notably that by Mr. W. A. Jutting. Mr. J. H. W. Brandt's drawing of library fittings are reminiscent of Pugin's designs for Gothic furniture, though none the less admirable on that account.

Miss C. Ramsey's pottery is excellent. Her best work here exhibited is a bowl of really striking design. Some plates by Miss J. Ramsey possess great merit.

Of the jewellery we liked best a silver necklace and pendant by Mr. (?) T. Sieling. Mr. W. H. Durst's enamelled back for a hair-brush, with a peacock's tail motif, is good. The miniatures shown were disappointing. Mr. F. Carter's etchings are spirited, as one might expect, though we prefer him in pen and ink. Mr. G. Maynard's dry-point, "The Knight, Death, and the Devil," after Albert Durer, we noticed some little time ago in a review of work submitted for scholarships and prizes exhibited here. Mr. Thomas Maybank displays his delicate fancy to full advantage in lithography. Mr. J. Kemp's lithograph of a river scene in misty weather is rather weak and slipshod in drawing, though atmospherically true. The specimens of bookbinding are excellent; the lettering might with advantage in some cases be less designedly clumsy. Miss C. Angus's embroidered cover for a box is most delicately and beautifully designed and wrought.

LIVERPOOL UNIVERSITY AND TOWN PLANNING.

IT is a humiliating reflection for the present generation that we have not planned a thoroughfare of any æsthetic value since the days of Nash. Kingsway presented great opportunities; here at last was an opening for us to show our progress in civic design. Mountains were in labour—— we leave our readers to finish the quotation. We are led to the sorrowful conclusion that the British public knows little and cares less about the external appearance of its streets. It is the same tale in every case; where any attempt at a comprehensive scheme has been made, the outcome is a compromise. Witness the Marble Arch improvement, and the processional road in the Mall. At the present time Regent-street is in a state of transition. The Quadrant will, it is to be hoped, preserve its unity. We have done our worst higher up the street, and we hope the public are satisfied.

We shall not live to see London Haussmannized, and indeed we do not desire such a consummation; but it would be idle to deny that an improvement on the present state of civic architecture would be desirable. The University of Liverpool, by establishing a Department of Civic Design in their School of Architecture, have rightly recognised the urgency of the need, from an æsthetic point of view, of creating a desire among our future architects to further the progress of ordered design and plan in future municipal improvements.

We have before us the prospectus for the coming session of the Department, founded by Mr. W. H. Lever, M.P., himself a pioneer of the town-planning movement. Mr. S. D. Adshead has been appointed Professor of Civic Design. The following extracts clearly state the objects in view:—

"Town planning, though intimately connected with architecture and engineering, is a distinct and separate study in itself, and the primary object of the School is to equip architects, engineers, and others with a knowledge of the supplementary subjects which town planning connotes, and to enable them to occupy with credit those advisory and permanent positions which must necessarily be created as legislation affecting civic development and extension becomes increasingly efficient. . . . In the realisation of a town plan it is the complete effect of the architecture rather than the mere plan that influences the citizen."

Shall we ever see the establishment of a Ministry of Fine Arts to control "the æsthetics of cities"? We fear not; money is our god; we cannot build a processional arch without encumbering with a load of offices a structure that should be triumphantly useless. In the meantime, all honour to Liverpool University. If there is ever to be improvement, it will come from efforts such as this.

ALMSHOUSES, KING'S LYNN.—The Burkitt Homes for old people in Queen-street have now been completed and opened. The architect for the new premises was Mr. H. T. Tilson, the contractors being Messrs. F. & S. Dickerson.

Engineering Societies.

ASSOCIATION OF ENGINEERS-IN-CHARGE.

The Council of the Association of Engineers-in-Charge have unanimously elected Mr. Henry Adams, M Inst.C.E., M.I.Mech.E., etc., as their President in succession to Mr. James Swinburne, and an attractive programme has been drawn up for the new session, including some good papers and several social functions. Among the members of the Association, Mr. Adams is one of the oldest of the engineers-in-charge, having so far back as 1865 been in responsible charge in the outdoor department of Sir W. G. Armstrong & Co., of Elswick Works.

SOCIETY OF ENGINEERS.

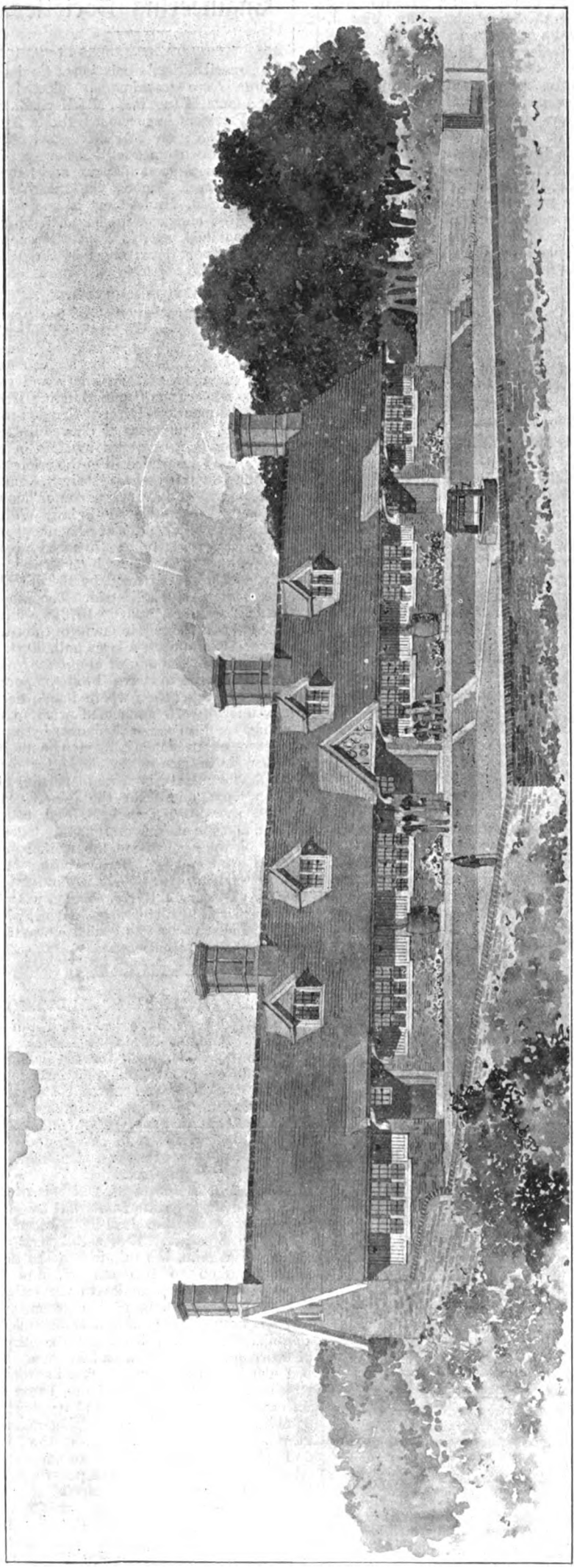
The fourth vacation visit of the present session took place on Wednesday, September 22, when, by the courtesy of Messrs. Wm. Hill & Son, facilities were given for a party of members of the Society and their friends to inspect the Organ Building Works of the above-mentioned firm at Camden-road, Islington, N. The house of Wm. Hill & Son is the oldest firm of organ builders in this country, being descended from the celebrated artist, John Snetzler, whose business, founded in 1755, passed into the possession of Thomas Eliot, and then to his son-in-law, William Hill, in the earlier part of the nineteenth century. For nearly a hundred years, therefore, the business has been in the Hill family, and is now directed by the grandson of the William Hill aforesaid. The present works in York-road, built in 1873, were constructed to suit the requirements of the trade. They consist of offices, a large hall, 80 ft. by 40 ft. (in which the organs are erected after the different parts have been prepared), and an engineering shop, where, in addition to the ordinary work connected with organ-building, the firm make their own hydraulic engines for organ blowing. Among a number of other departments are shops for metal casting, manufacturing and voicing the various pipes, shops for the joiners, case-makers, sound-board makers, and bellows makers, and for making and putting together the action-work. Outside the workshops is an extensive timber-yard, where a large stock of hard and soft woods is stacked and kept to mature. The machinery connected with the works is driven by a 30-h.p. gas-engine, whilst a steam boiler is used to generate steam for heating and other purposes.

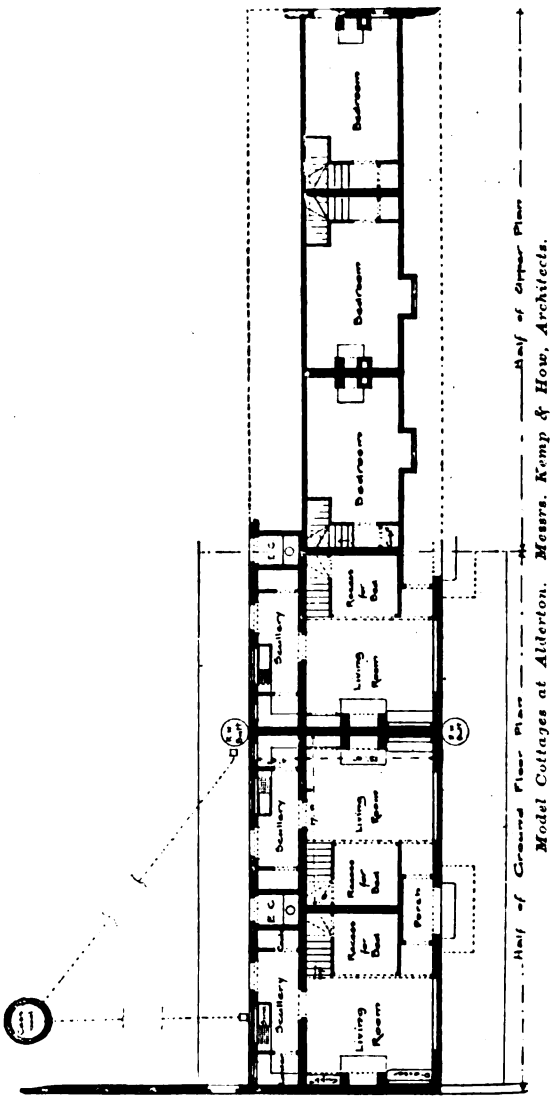
MODEL COTTAGES AT ALDERTON.

THESE cottages have been built on Sir Cuthbert Quilter's estate at Alderton, in order to provide homes for old labourers on the estate, whose families may have grown up and left them, and whose cottages are wanted for new families. They are, therefore, somewhat in the nature of almshouses provided by private munificence, and their planning and architectural treatment is suitable to such an object.

The roof of the cottages, which is of dull red tiles, overhangs the front wall by about 2 ft., protecting the lead-light casements from the weather. The six houses are arranged in pairs, the opening to the doors being common to two tenants, and the doors being at right angles to the front of the houses. The bulk of the ground-floor space is occupied by what may be called a combination room, which serves the purpose of bedroom, sitting-room, and kitchen. The bed will be placed in an alcove, in front of which will be a curtain, so arranged that any visitor entering the house in the daytime would see nothing of the sleeping arrangements. There is a good range in the room, and plenty of cupboard accommodation. At the back is a scullery and pantry, small, but neatly arranged for convenience and cleanliness, and the sanitary arrangements leave nothing to be desired. Upstairs there is a bedroom, which can be used, of course, if desired, but it is thought that old people,

Digitized by Google





Half of Ground Floor Plan — — — — — — — — Half of Upper Plan

Model Cottages at Alderton. Messrs. Kemp & How, Architects.

Digitized by Google

especially in the winter time, will prefer to sleep in the warmer room downstairs.

The cottages are built in a substantial manner, and the cost, not reckoning the value of the land, has been 700*l.*, which works out at about 116*l.* apiece.

The architects are Messrs. Kemp & How, of London, and the builder Mr. Kersey, of Bealings.

The erection of such cottages forms an interesting and useful experiment towards the solution of one of the difficulties connected with the housing problem in rural districts.

Legal Column.

The Development Bill.

The concessions made by the Chancellor of the Exchequer in Part I. of the Development Bill will, we think, be accepted with a feeling of satisfaction so far as they go. The discussions in Parliament had shown the risk involved of the funds being administered, if not corruptly, at least with a view to satisfying certain sections of the community which can make the most noise, and Mr. Lloyd George himself recognised the pressure that certain Government Departments can bring to bear on the Treasury; therefore the amendment proposed by him that the advisory committees specified in the Bill should be displaced for a small Commission appointed for a term of years independent of the executive, and during its term of office with final authority to reject any scheme, but without final authority as to any scheme that they recommend, goes a long way in meeting some of the objections to the machinery of the Bill. It remains to be seen how the Commission is to pursue its investigations, as the Government do not approve the procedure under the Light Railways Act.

So far the air has been cleared, but the Bill marks a new departure in this country, and its provisions will require careful consideration. For instance, an amendment moved by the Solicitor-General enables grants being made, in addition to Government Departments, also "through a Government Department to a public authority, University, college, institution, or association of persons or company not trading for profit." This extension may serve some useful purposes, but should be somewhat scrutinised, as many of the municipalities engaging in competition with private enterprise may yet be said to be "not trading for profit."

Another important question involved is how far Government Departments themselves shall be empowered to undertake and carry on works. Hitherto the Government of this country has refrained from entering into any undertakings of a commercial character, or competing in any way with private enterprise, save, of course, in so far as it is necessary to obtain labour for the Government Departments. This seems a wise principle to adhere to, as Governmental trading would be even more objectionable than municipal trading. Mr. Lloyd George intimated that at first, at any rate, the action of the Government Departments would be limited to experimental undertakings, and this might serve a useful purpose, for instance, in connexion with such objects as afforestation; but when once powers are granted, then extension is a question of almost invisible growth, as has been the case with municipal trading, and hence this point in the Bill requires careful consideration. The Government have shown themselves open to argument in connexion with this new departure, and the progress of the Bill will be followed with considerable interest.

Y.M.C.A. Extension Scheme, Rotherham.—The Rotherham Young Men's Christian Association have resolved on a scheme for acquiring the Masonic Hall in High-street for the use of the Association. Mr. James Totty, architect, of Rotherham, has prepared the plans for the various alterations that will have to be made.

BRIXTON LONDON COUNTY COUNCIL SCHOOL OF BUILDING.

On Saturday Mr. H. J. Clark, Vice-Chairman of the London County Council Polytechnics Committee, opened the new addition to the Brixton London County Council School of Building.

The enlargement was rendered imperative by the success of the school, which was opened five years ago, to enable artisans and others engaged in the building trade to acquire an intimate knowledge of the principles that underlie the processes which they have to carry out in their daily work. The new wing accommodates 350 more students.

Mr. James S. Holliday, Chairman of the Advisory Committee of the School, who presided, declared, as a builder of much experience, that the facilities for learning trades were now much greater than was the case when he was a boy. Now practical and theoretical instruction in trades was within the reach of every student and artisan, whose opportunities for self-improvement were far-reaching, and enabled them to rise to higher positions. At that school they did not profess to make builders, architects, or surveyors, but guaranteed to provide a practical and theoretical foundation upon which they could build a good structure, which would not only enable artisans to become good craftsmen, but would render assistance to the general community.

Mr. F. L. Dove, L.C.C., speaking as a builder, gave proof of the value of the school, which was managed on satisfactory lines. He was convinced that if technical schools were to be of real service they would have to be run on similar lines—as monotechnics. This was the first London County Council experiment in this direction, and it had met with great success, and had been followed by the starting, at Poplar, of a School for Engineering. He claimed that these special schools were of more advantage than polytechnics, which naturally could not adequately specialise in any one industry. But whilst they appreciated the work of polytechnics and so forth, they should not forget to pay due recognition to the fact that nearly all the pioneer work in connexion with trade classes had been done by the City Livery Companies, which were still rendering yeoman's service in that direction. Speaking to the students, Mr. Dove urged them, as a first principle, to understand the why and the wherefor of everything, and also to obtain a thorough knowledge of geometrical drawing. Without such knowledge they would never achieve success in any branch whatever of the building trade. They must not be in too much of a hurry. For instance, those desiring to become architects must not hesitate to spend any amount of time in thoroughly acquiring the first principles of ancient, classic, and mediæval lines. If they followed such details carefully it would put them on the right road to become designers of some repute. No matter how much genius a man might have for design, unless he adopted this course all his designing would only lead to the meretricious, or to the pastrycook order, of which they now had so much disfiguring London and the suburbs—architecture which was lacking in dignity, repose, and style. Workmen should do honest work. By that he meant that all work should be well and truly executed. Slovenly construction always led to bad work. To students who were to become foremen his advice was to select their workmen and then they would become surrounded by good men. Foremen should not bully their men, neither should they molly-coddle them. But the bulk of the students would become mechanics, and then their aim should be to produce their best. There was, he knew, the difficulty that they might find employment in firms which only desired that which was quick and cheap, heedless of quality, but the workers should get other employment as soon as possible. Much nonsense was written about art and craft, but in his opinion the man with an artistic temperament rarely possessed the mechanical instinct, whilst, on the other hand, a man who could execute the most exact work had not very much designing power. There were some exceptions, but not many. Something was needed to educate the British public, too, for it sadly needed education so as to be able to differentiate between good and bad. Nothing was more deplorable and calculated to depreciate good work than the laudation of that which was shoddy and inferior. At present ninety-nine out of every hundred members of the public were just as well satisfied with the sham as with the real article. Yet from what he had seen of old and modern work, both English and foreign, he was certain that at no time in history had better work been produced, or could better work be produced, than now. The real difficulty was due to want of knowledge and appreciation by the public of a good thing when they saw it, and also to the insane desire for cheapness in everything.

Mr. Clark, in declaring the extension open, expressed commendation of that form of education which gave opportunities to students to become proficient workers. Money spent on such education was well spent.

Mr. W. Sanders, L.C.C., remarked that he lived in a 35*l.* house, and when his windows rattled, as they did, and the floor boards come away from the skirting, and the rain came through the roof, he would recall what Mr. Dove had said, and would be glad to remember that at least there was one righteous builder in Israel. He would also regret that the man who built the house had had no opportunity of hearing such an address as Mr. Dove had given that evening. But Mr. Dove's advice to students would be no good unless employers were converted to such worthy views. Students asking for employment would be asked how fast they could work, and not how well they could work. Employers should occasionally put quality before quantity. Things might be better if there was not that contemptuous feeling concerning the men who held the tools and the man who made the design. The old artists had no such contempt for the hand worker. He would like the old connexion to be brought back again. The workman with the artistic capacity should be able to grow into the artist, plus craftsman. An artist who was not a craftsman must be a poor thing. Much of the bad architecture was due to the fact that the men thought they could be architects without having knowledge of materials and handwork.

Mr. Willis, Mayor of Battersea, complained that there was too much nowadays of that miserable spirit of making things cheap and nasty for the sake of profit.

Mr. A. E. Mumby, M.A., A.R.I.B.A., said there was no use disguising the fact that many thought the County Council was initiating a policy of starting professional education, beginning with architecture. That idea was erroneous, and it should be made clear, and then professional men might be persuaded to become more in touch with the work of the school.

Replying to a vote of thanks, Mr. Dove said it was a common form of belief that there was a distinct connexion between art and craft, but really there was no ground for it. There was no instance in which any of our ancient buildings, our cathedrals, had been designed as well as executed by the same men. The artistic instinct did not seem to lend itself to the more prosaic task of making things fit.

Master Builders' Associations, etc.

YORKSHIRE FEDERATION OF BUILDING TRADES EMPLOYERS.

The monthly meeting of the Yorkshire Federation of Building Trades Employers was held in the Council-chamber at Bridlington on the 17th inst., the President, Mr. W. R. Thompson, Dewsbury, and thirty-five members being welcomed by the Mayor, Councillor C. G. Southcott, and the Deputy-Mayor, Councillor J. V. Mainprize. In an address the President expressed his satisfaction at the fact that the Bridlington Corporation had not established a works department. Such departments, he said, could be shown in innumerable cases to have been not only unfair to local contractors, but unprofitable to the ratepayers.

The Roman Camp of Numantia.—According to a correspondent of the *Westminster Gazette* Professor Schulter has discovered, near Reineblas, the remains of the Roman city of Numantia and of the three Roman camps on the hill of Castillejo. The location of the camp was facilitated by the fact that the fortifications are still above the general level of the ground, and are generally well preserved, a fact which is ascribed to the absence of trees. From a neighbouring hill the whole line of fortifications can be seen, running in straight lines without regard for the inequalities of the soil. The walls were 2½ metres thick, and extend for about 5 kilometres. The barrack walls are partly constructed of large blocks of stone, some being as big as 2 metres long by 1 metre high, the material used being easily worked limestone found near the camp. The camp is described as the oldest Roman camp in existence, and its remains as being of unexampled importance for students of Roman military history. The excavations are proceeding rapidly, but it is stated that the funds supplied by the Kaiser and by the Archæological Institute and other bodies are exhausted, and that further money will be needed to complete the excavations.

Digitized by Google

THE BUILDER

SEPTEMBER 25, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 12s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, SEPTEMBER 24.

Royal Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. Charles Porter on "Sanitary Law"—III. 7 p.m.

SATURDAY, SEPTEMBER 25.

Junior Institution of Engineers.—Visit to Imperial International Exhibition, Shepherd's Bush. 3 p.m.

Incorporated Association of Municipal and County Engineers.—Eastern District Meeting to be held at Lincoln.

MONDAY, SEPTEMBER 27.

Royal Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. A. Wellesley Harris on "Duties of a Sanitary Inspector"—I. 7 p.m.

WEDNESDAY, SEPTEMBER 29.

Royal Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. A. Wellesley Harris on "Duties of a Sanitary Inspector"—II. 7 p.m.

FRIDAY, OCTOBER 1.

Royal Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. A. Wellesley Harris on "Duties of a Sanitary Inspector"—III. 7 p.m.

Illustrations.

TOWN HALL EXTENSION, GRIMSBY.

WE publish the perspective view and two plans of the design for the extension of Grimsby Town Hall, by Messrs. Eade, Johns, & Browne (of Ipswich), to which the first premium was awarded.

We have invited the architects, as we always do in such cases, to send their own description of their intentions in the plan and design, considering that the author of a design must know best what he was aiming at and what was the governing motive of his plan and design. As they have not, up to the time of going to press, sent any description, we must leave it to our readers to form their own judgment on the plan and design from the illustrations.

BERKS COUNTY COUNCIL OFFICES COMPETITION:

SECOND PREMIATED DESIGN.

IN the accompanying design the various departments are arranged on separate floors, and in distinct blocks, and direct communication is provided for between the heads of each department and their assistants.

All the general offices and waiting-rooms are close to the main staircase and lift, which are centrally placed, immediately opposite the entrance. A secondary staircase is provided from the first to the third floor.

Access from the Assize Court to the new buildings is arranged on the ground floor, and also on the first floor.

The committee-rooms are so placed as to be in direct communication with the court. Both rooms have a considerably larger area than is required by the conditions, and the Education Committee-room is arranged to be divided into two rooms, each having its own fireplace and entrance door.

The provisions of central areas allows for efficient lighting and ventilation of the whole of the corridors and lavatories, and there is direct and simple connexion with the main drainage. Separate cloak-room and lavatory accommodation is provided for: (1) Members of committees, (2) officials and staffs of the various departments, and (3) ladies. The caretakers' apartments in the basement have a separate entrance, are self-contained, and can be cut off completely from the rest of the building. Storage for forty bicycles is also obtained in the basement, with a separate entrance, and so arranged that all the machines can be separately placed.

For the elevations Lawrence's "Bracknell" facing bricks would be used with Portland stone dressings.

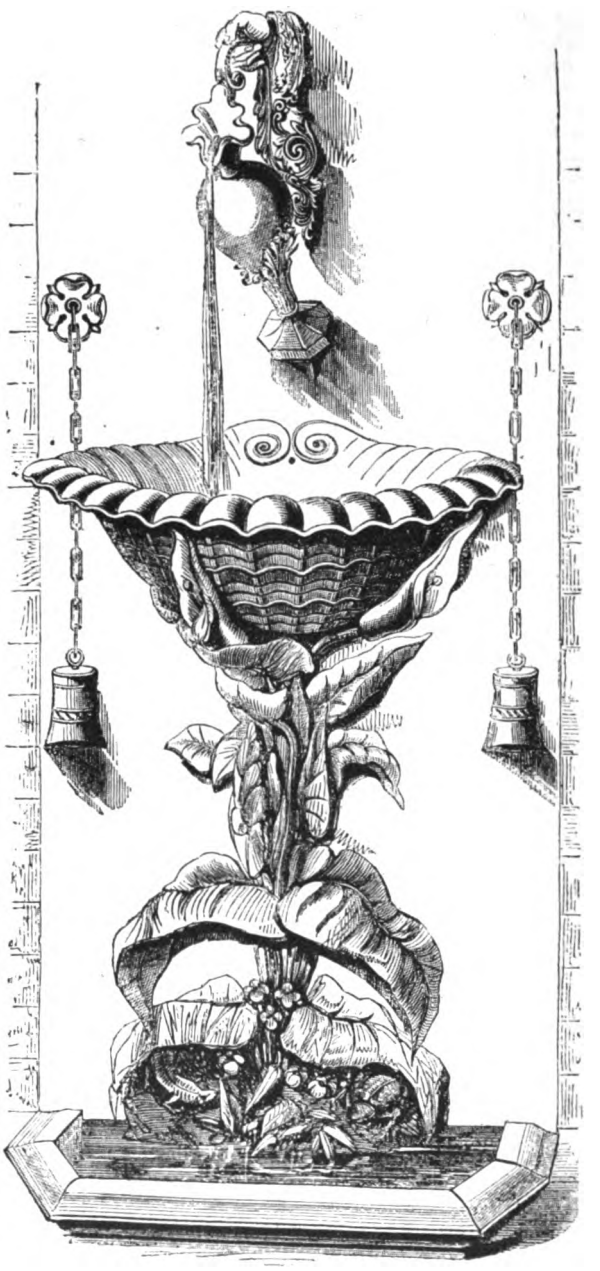
The roof to be covered with Silberthwaite Westmorland bright sea green slates. The floors to be in reinforced concrete, with metal lath ceilings suspended under.

The buildings throughout to be warmed by radiators, fireplaces also being provided in all principal rooms, and ventilating flues carried up in chimney-stacks.

E. J. SHREWSBURY.

Fifty Years Ago.

FROM THE *Builder* OF SEPTEMBER 24, 1859.



Design by an Architect for a Drinking Fountain in a Provincial Town.

*** This example of the decorative art of fifty years ago is a somewhat striking indication of the advance in our ideas about decorative design since the early Victorian era. It would hardly be possible for an architect to produce such a design now—still less to get it illustrated in our pages.—ED.

Digitized by Google

PROPOSED MUNICIPAL BUILDINGS, BURSLEM.

THE following is the Report by Messrs. Warwick & Hall on their design placed third in the recent competition, for the proposed Municipal Buildings at Burslem :—

"In preparing the accompanying design special care has been taken to adapt the buildings to the differences of level in the ground in order to observe due economy without any sacrifice of internal convenience. For this reason the floor of the large hall is at the platform level of the small hall, which is again a few steps above the level of the courts, making internal communication between each portion of the building as easy as possible.

The position of the large hall has been dictated by the advantage of having the entrance from Jenkins Street, which is quite level and free from tramlines.

The principal elevation is to Wedgwood-place, but the sharp fall in the ground renders it unsuitable for carriages to wait in this thoroughfare.

The entrances to the courts and the small hall are kept as far as possible from each other and from the entrance to the large hall, so that the traffic may be regulated with ease, when different functions are in progress.

The courts are placed internally in the quietest portion of building, and conveniently near the police station, from which it is suggested a subway for prisoners should be made below the roadway to the dock of the police-court. This has been found to work well in other cases, and the plans make all provision for such a contingency.

The walls to be built of local brick, and faced on the elevations with white Hollington stone or other approved stone. The floors to be fire-resisting throughout. The staircases to be of granolithic. The roofs to be covered with slates. All external doors to be of oak. The windows to be in casements, and all the joinery to be of red deal. The floors of the large rooms to be finished with pitch pine flooring tongued and secret nailed. The smaller rooms to be in granolithic prepared for linoleum. The flat roofs to be covered with asphalte. The basement floors to be rendered absolutely dry by lining the walls and floors with asphalte where the earth adjoins. The ceilings to be plastered, and the principal ceiling to be panelled in plaster.

The heating to be low pressure hot-water system, as required in the conditions. Ventilating radiators will be placed under the windows in the smaller rooms and corridors, with extract ducts in the ceiling.

The large and small hall and courts to be ventilated as follows: Fresh air will be warmed by passing through coils of pipes, and then propelled into the rooms at a height of 6 ft. from the ground and from the gallery level. Extract trunks for the foul air are formed in the roof and underside of galleries, which are exhausted by electric fans.

The lighting will be by electricity, and the wiring will be carried out in steel tubing in the most approved modern practice.

The sanitary work is designed with a view to simplicity and economy, and all the fittings and parts will be the best of their respective kinds."

APPLICATIONS UNDER THE 1894 BUILDING ACT.

ON August 27 last the Building Act Committee of the London County Council met to deal with applications made under this Act. The proceedings were governed by the clause in the order of reference which empowers the Committee at certain seasons to act on behalf of the Council in relation to matters included in the Committee's order of reference.

Lines of Frontage and Projections.

Bow and Bromley.—The erection of a building, with a porch in front, at the rear of the Presbyterian Church, Bow-road, Bow, to abut upon the eastern side of Mornington-road (Rev. J. H. Johnston for the Managers of the Bow Presbyterian Church).—Consent.

Clapham.—The erection of a one-story shop in front of No. 99, Clapham Park-road, Clapham (Mr. J. W. C. Whyte for Mr. P. Meredith).—Consent.

Dulwich.—That the application of Messrs. Deakin & Cameron, for an extension of the periods within which the erection of buildings abutting upon Azenby-road, Camberwell, was required to be commenced and completed, be granted.—Consent.

Fulham.—Erection of an addition at the flank of the South Fulham Constitutional Club, No. 163, New King's-road, Fulham, to abut upon Chipstead-street (Mr. C. Botterill for the Directors of the Club).—Consent.

Fulham.—Rebuilding of Stanley House, on the south-western side of Farm-lane, Walham Green (Mr. C. W. Stephens for the United Motor Cab Company, Ltd.).—Refused.

Hackney, Central.—Erection of an addition to the mortuary, and the erection of a covered way, at the Metropolitan Hospital, Kingsland-road, Hackney, to abut upon St. Peter's-road (Messrs. Young & Hall for the Committee of the Metropolitan Hospital).—Consent.

Hackney, North.—The retention of a porch in front of the house, known as "Trelans," on the northern side of Upper Clapton-road, Stamford-hill (Messrs. E. Evans & Sons).—Consent.

Hammersmith.—The erection of two projecting one-story shops in front of No. 57, Shepherd's Bush-green, Hammersmith (Mr. A. Cole for Mr. J. Bennett).—Consent.

Hampstead.—The retention of an iron sign on the forecourt of Nos. 139A and 139B, Finchley-road, Hampstead (Messrs. E. T. Morriss & Co.).—Consent.

Holborn.—Erection of a jib crane at a warehouse building on the north-eastern side of Castle-street, Holborn (Mr. H. E. Rider for the International Correspondence Schools, Ltd.).—Consent.

Islington, East.—Erection of an illuminated sign in front of No. 292, Holloway-road, Islington (Mr. C. Gardner).—Consent.

Kensington, South.—That the application of Mr. R. H. Kerr for an extension of the periods within which the erection of buildings on the site of Nos. 39, 41, 43, 45, and 47, High-street, Kensington, was required to be commenced and completed, be granted.—Consent.

Marylebone, East.—Erection of a balcony in front of No. 46, Harley-street, St. Marylebone (Messrs. Banister Fletcher & Sons).—Consent.

Marylebone, West.—Retention of two showcases in front of No. 95, Wigmore-street, St. Marylebone (Messrs. Flint & Durbridge for Mr. Balestra).—Consent.

Norwood.—Erection of one-story addition in front of No. 130, Hamilton-road, West Norwood (Mr. W. H. Callow for the Norwood and Dulwich Dyeing, Cleaning, and Carpet Beating Company, Ltd.).—Refused.

Norwood.—The erection of porches and oriel windows to sixteen houses on the western side of Doverfield-road, Brixton-hill, Norwood (Messrs. Douglas Young & Co.).—Consent.

Paddington, North.—The erection of a porch at No. 22 wharf, Harrow-road, Paddington (Messrs. Thomas & Thomas for S. Putney, Ltd.).—Consent.

Paddington, South.—Erection of an addition at the flank of No. 17, Leinster-gardens, Paddington, to abut upon the northern side of Cleveland-square (Messrs. Alder & Turrill for Mrs. Du Croz).—Consent.

St. George, Hanover-square.—Retention of a metal and glass louvred ventilator at the flank of No. 51, Grosvenor-square, Westminster, abutting upon the northern side of Grosvenor-street (Higgs & Hill, Ltd.).—Consent.

St. Pancras, South.—The erection of an iron and glass shelter at the entrance to the St. Carlo's Restaurant, No. 3, Fitzroy-square, St. Pancras (Mr. G. Rossi).—Consent.

Strand.—Erection of illuminated advertising sign at Gloucester-mansions, Cambridge-circus (Mr. S. K. Cozens for the British Photo-Lexigraph Company).—Refused.

Strand.—Erection of iron and glass covered way in Crown and Septre-court, Strand, leading to No. 32, St. James-street (Mr. W. Wallace for Messrs. Sandow).—Refused.

Strand.—The retention of three wood and glass showcases in front of No. 1, Piccadilly-circus, St. James, Westminster (Mr. A. Oldcorn).—Consent.

Strand.—The erection of a building with projections on the eastern side of St. James's-street, Westminster, to abut also upon the northern side of King-street (Messrs. Walter & Son for the Directors of Lloyds Bank, Ltd.).—Consent.

Wandsworth. — That the application of Messrs. Cox & Bissell for an extension of the period within which the erection of six houses on the northern side of Church-lane, Tooting, between Moring-road and Lucien-road, was required to be completed, be granted.—Consent.

Wandsworth.—Erection of wooden bay windows and porches in front of thirty-nine houses on the north-eastern and south-western sides of Fircroft-road, Tooting (Messrs. E. Evans & Sons).—Consent.

Wandsworth.—Erection of bay windows and porches in front of four houses on the northern side of Telford-avenue, Wandsworth, and four houses on the northern side of Kirkstall-road (Messrs. H. F. Buchan & Co.).—Consent.

Wandsworth.—Erection of a one-story porch and bay window in front of a proposed house on the western side of Luttrell-avenue, Putney (Mr. G. A. Gale).—Consent.

Wandsworth.—Erection of an addition at the rear of No. 62, Lower Richmond-road, Putney, to abut upon the eastern side of Bendemere-road (Mr. E. H. Wallis for Mr. E. Bosher).—Consent.

Westminster.—Retention of a sign attached to the projecting clock in front of Ruskin House, Rochester-row, Westminster (Mr. W. Morris).—Consent.

Westminster.—Erection of a porch in front of a proposed addition to St. Vincent's Orphanage on the western side of Carlisle-place, Westminster (Mr. J. H. B. Foss for Sister Mary W. Petre).—Consent.

Westminster.—Erection of showrooms at Baltic Wharf, Grosvenor-road, Westminster (Mr. R. F. Atkinson for Castle's Ship-breaking Company, Ltd.).—Refused.

Woolwich.—Erection of a wooden hood to the girls' entrance to St. Patrick's Schools, Griffin-road, Plumstead (Mr. A. H. Kersey for the Trustees of the School).—Consent.

Width of Way.

Limehouse.—Erection of a building on the western side of Ratcliff-square, Stepney, at less than the prescribed distance from the centre of the roadway of the street (Mr. J. Johnson for Messrs. Hamsher, Wiggins, & Robinson).—Consent.

Rotherhithe.—That the application of Mr. J. J. Freeland for an extension of the periods within which the erection of buildings between Nos. 10 and 10A, Cow-lane, Rotherhithe, was required to be commenced and completed, be granted.—Consent.

Rotherhithe.—Erection of buildings on the south-eastern side of Albion-street, Rotherhithe, at less than the prescribed distance from the centre of the roadway of Swan-lane (Mr. J. J. Freeland for Mr. A. E. Cast).—Consent.

Width of Way and Lines of Frontage.

Camberwell, North.—That the application of Mr. H. Falkner for an extension of the periods within which the erection of a one-story shop at No. 363, Old Kent-road, Camberwell, to abut upon the north-western side of Charlotte-street, was required to be commenced and completed, be granted.—Consent.

Chelsea.—The erection of a building (new Crosby Hall) on the northern side of Cheyne-walk, Chelsea, to abut also upon the western side of Danvers-street (Messrs. Wratten & Godfrey for the University and City Association of London, Ltd.).—Consent.

Lewisham.—The erection of buildings on the southern side of Brockley-cottages, Lewisham, to abut also upon the western side of Malyon-road (Mr. A. W. Osborn for Mr. J. H. Beeley).—Consent.

Marylebone, West.—The erection of a porch in front of the proposed Swedish Church, Harcourt-street, Marylebone-road, St. Marylebone (Messrs. Niven & Wigglesworth for Count Herman Wrangel).—Consent.

Poplar.—The erection of a warehouse building on the site of Nos. 76 to 82, High-street, Poplar (Mr. G. J. Anderson).—Consent.

St. George-in-the-East.—The erection of an addition to No. 15, Chandler-street, St. George-in-the-East, at less than the prescribed distance from the centre of the roadway of the street (Mr. F. Hooper for Messrs. E. H. Price & Co.).—Consent.

Lines of Frontage and Construction.

Dulwich.—The erection of a greenhouse and potting-shed of a temporary character at the rear of No. 29, Alleyn-park, Dulwich, to abut upon Alleyn-road (Messrs. J. Aird & Sons for Mr. A. C. Hurtzig).—Consent.

Finsbury, East.—The erection of an iron and concrete gangway over the public way of Type-court, Finsbury, to connect Nos. 59 and 61, Moor-lane, at the second floor level (Mr. W. Hammond for Messrs. Jaeger & Co.).—Consent.

Marylebone, East.—The retention of a wood and iron tool-shed of a temporary character at the entrance to Sussex Lodge, Park-road, St. Marylebone (Mr. J. Wilson Moore for Colonel W. Hall Walker).—Consent.

Marylebone, West.—Erection of showcases of a temporary character beneath the builder's gantry in front of Nos. 32, 34, 36, and 38, Edgware-road, Paddington, and Nos. 66 and 68, Seymour-street (Mr. F. W. Hunt for G. Cozens & Co., Ltd.).—Consent.

Paddington, North.—The erection of an addition to the iron and glass shelter in front of the Metropolitan Music Hall, Edgware-

Digitized by Google

road, Paddington (Messrs. F. Matcham & Co.).—Consent.

Strand.—The erection of an iron and glass shelter in front of Oxford-circus tube railway-station, Oxford-street (Messrs. Mott & Hay for the Central London Railway Company).—Consent.

Wandsworth.—The retention of a notice board on the forecourt of the Southfields Baptist Chapel, Wimbledon Park-road, Wandsworth (Mr. W. J. Collins for the Southfields Baptist Brotherhood).—Consent.

Wandsworth.—Erection of a wood and glass covered way at the flank of No. 71, Magdalen-road, Wandsworth, to abut upon Ellerton-road (Mr. T. Sheppard).—Refused.

Westminster.—The erection of bay windows and an iron and glass shelter at the rear of No. 20, Old Queen-street, Westminster, next to Bird Cage-walk (Mr. F. W. Troup for Mr. H. G. Spicer).—Consent.

Width of Way, Line of Frontage, and Construction.

Hackney, South.—The retention of a wood and iron building and an iron screen at No. 122, Lea Bridge-road, Hackney (Messrs. I. Livermore & Sons).—Consent.

Width of Way, Deviation from Certified Plan, and Projection

Strand.—Rebuilding of Nos. 6, 7, 8, and 9, Bury-street, and No. 17, Ryder-street, St. James, with oriels, an angle turret, a porch, and balconies in front (Mr. G. Thrale Jell for Mr. G. Lawrence).—Consent.

Space at Rear.

City of London.—Alterations and the erection of additions at the rear of No. 136, Cheapside, City (Messrs. Parr & Sons for Williamsons, Ltd.).—Consent.

Stepney.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building upon a site on the northern side Commercial-road, Stepney, eastward of Myrdle-street, with an irregular open space at the rear (Mr. J. F. Parker for Mr. M. Cohen).—Consent.

Space at Rear and Conversion of Building.

County of London.—The conversion of No. 1, Bartlett's-passage, Fetter-lane, City, for use as a newspaper boys' club (Mr. P. F. Story).—Consent.

Alteration of Buildings.

Hackney, North.—That the Council do not allow a modification of the provisions of sect. 74 (2) as far as relates to No. 2, The Broadway, Stamford-hill (Edmondsons, Ltd., for Mr. J. Edmondson).—Refused.

Paddington, South.—The erection of an additional story at the rear of No. 17, Sutherland-place, Bayswater (Mr. W. Bonnamy).—Consent.

Separation and Alteration of Building.

Kensington, South.—The alteration and uniting of Nos. 16 and 17, Emperor's-gate and No. 2, McLeod-mews, Kensington (Mr. H. Row for the National Mutual Insurance Society).—Consent.

Formation of Streets.

Clapham.—That an order be issued to Messrs. Freeman & Co. refusing to sanction the formation or laying out of a new street for carriage traffic in connexion with the erection of buildings upon a site on the southern side of Lavender-hill, Clapham.—Refused.

Hackney, North.—A deviation from the plans sanctioned for the formation of two new streets for carriage traffic to lead from Spring-hill to Craven-walk, Clapton-common, so far as relates to the formation of the northernmost road in a slightly altered position (Mr. H. B. Michell for the British Land Company, Ltd.).—Consent.

Lewisham.—That an order be issued to Mr. J. Everington sanctioning the formation or laying out of a new street for carriage traffic to lead from Whitefoot-lane to Hazlebank-road, Catford.—Consent.

Norwood.—That an order be issued to Messrs. Douglas Young & Co. sanctioning the formation or laying out of new streets for carriage traffic out of the northern side of Upper Tulse-hill, Norwood.—Consent.

Wandsworth.—That an order be issued to Mr. A. Wellings sanctioning the formation or laying out of a new street for carriage traffic to lead from Mitcham-lane to Tooting Beggardens, Wandsworth.—Consent.

Width of Way and Construction.

Finsbury, East.—That the Council, on the application of Mr. D. Archer, do consent to the retention of a hoarding of a temporary character on land at the rear of No. 88, Old-street, Finsbury, at less than the prescribed distance from the centre of Young's-buildings.—Consent.

Woolwich.—The erection of a wood and iron motor-shed at the rear of No. 25, Wood-street, Woolwich (Mr. J. Scott Fenn).—Consent.

Space at Rear and Projection.

Lewisham.—The erection of thirteen houses on the western side of Manwood-road, Lewisham, with wooden bay windows, and with an irregular open space at the rear of the northernmost house (Messrs. Norfolk & Prior for Mr. W. F. Connor).—Consent.

Buildings for the Supply of Electricity.

Hammersmith.—Erection of a steel structure to support a coal conveyor at the electric lighting station of the Kensington and Notting-hill Electric Lighting Company, Wood-lane, Hammersmith (Babcock & Wilcox, Ltd.).—Consent.

Newington, West.—That the Council do approve the plans submitted in connexion with the application of Mr. A. Harrison, on behalf of the Southwark Metropolitan Borough Council, for approval of the construction of additions to a generating-station at Penrose-street, Southwark.—Consent.

Cubical Extent.

Holborn.—The use of iron doors with the stiles and top rails 3 in. by ¼ in. instead of 4 in. by ¼ in. (Messrs. Whitfield's Safe and Door Company).—Consent.

City of London.—That the Council do not consent to the retention of a building on the eastern side of Old Bailey, City, with the northern division exceeding in extent 250,000 cubic ft. (Mr. P. Hoffmann).—Refused.

Limehouse.—The erection of an additional story to warehouse premises at Hough's Wharf on the northern side of Narrow-street, Limehouse, whereby such premises will exceed in extent 250,000 cubic ft. (Mr. J. M. Knight for Mr. R. Hough).—Refused.

Uniting of Buildings.

City of London.—The use of armoured doors in lieu of iron doors to two party wall openings between No. 32, London-wall and No. 5, London-wall-avenue, City (Mather & Platt, Ltd.).—Consent.

Kensington, South.—The uniting of Nos. 86 and 88, Gloucester-road with Bailey's Hotel, Gloucester-road, and Courtfield-road, South Kensington (Spiers & Pond, Ltd.).—Consent.

Marylebone, East.—The retention, as united, of buildings abutting upon Ogle-street and Ogle-mews, St. Marylebone (Messrs. H. P. Adams and C. Holden).—Consent.

Peckham.—The retention of an opening between Nos. 6 and 7, MacDermott-road, Peckham (Mr. H. R. Sayer).—Consent.

MODERNISING STUTTGART.

Of all the towns in Germany Stuttgart perhaps leads the way in questions of social reform. An instructive example of well-directed energy is to be found in the methods lately adopted for improving the housing conditions obtaining in the old quarter. Old Stuttgart, with its profusion of mediæval and XVIIIth century work, its tortuous, narrow streets, its picturesque houses, with double overhanging stories and immense, steep gables, was one of the quaintest and most characteristic towns in Swabia. It was also, by reason of its extremely insanitary condition, a source of imminent danger to its surroundings. In 1905 this was realised by the Society for the Promotion of the Welfare of the Working Classes, who has for many years been actively engaged in building workmen's colonies. As no half-measures could avail, it was decided to pull down the worst part of the town and erect blocks containing two and three roomed dwellings, for which there was a large demand.

The financial difficulties to be overcome were great. Negotiations were carried on with over 100 proprietors before the price of the land could be fixed. This finally came out at 3,216,000 marks, or, on an average, 477 marks per square metre, the actual price varying from 206 to 1,027 marks per square metre. It was estimated that the work, including site, demolition, and re-erection would cost 7 million marks, and most of this capital was advanced by the Municipality, the Society for the Promotion of the Welfare of the Working Classes, and by private persons for the moderate interest of 3 per cent. The Society further took all risks, requiring no security, and renouncing all claim to any profits that might accrue. It engaged to hand over any such profits to the town treasury, on condition that the moneys should be devoted to further improvements, hygienic and artistic, in the old town.

From the outset the rapidity with which the houses were let or sold pointed to the complete financial success of the scheme. Architecturally the success has been as great, owing to the wise lines on which the project was drawn up. The retention of the plan of the quaint old Geiss Platz (the centre of the quarter), being the starting point of the new scheme, this involved the retention of the lines of the old streets. The curves and bends, contractions, and expansions have been retained as far as was compatible with the necessary widening from 4·25 metres to 11 metres, with the result that the streets have none of the rectilineal stiffness of modern thoroughfares. It was further resolved to rebuild the houses as nearly in the old style as modern requirements would permit, in order that the new buildings should not clash with their old setting. Herr Karl Hengerer, assisted by Messrs. Mehlin & Reissing, is responsible for the plan as a whole, though many architects contributed to the designs. Consequently there is an absence of that monotony usually prevailing in the modern quarters of a town. The necessary simplicity of the designs is relieved by a quantity of quaint carving, the work of the sculptor J. Zeitler, whose mediæval groups at street corners add considerably to the pervading old-world feeling. Many of the façades are further enriched with decorations by Robert von Haugs, one of the finest exponents of the modern school of Swabian fresco painting. Altogether Stuttgart is to be congratulated on its new old quarter, which combines so much picturesqueness with the demands of modern hygiene.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERBARGOED.—Fire-station; Council Surveyors.

Abertillery (Mon.).—School (3,400*l.*); Mr. J. Morgan, builder, Blaenavon.

Ashford.—Alterations to Links Hotel, for Mr. Carter.

Attleborough.—Restoration of parish church; Mr. A. J. Lacey, architect, King-street, Norwich.

Bargoed.—Skating-rink; Messrs. Williams Brothers, architects, Bargoed.

Birmingham.—New Co-operative Stores, Pershore-street; Mr. F. Harris, architect, 1, Balloon-street, Manchester.

Bootle.—Skating-rink; St. Helens Skating Rink Company.

Brandon.—Thirty-four houses; Messrs. Bell Brothers, builders, Brandon.

Chester Moor.—Additions, parish church; the Vicar.

Cleveleys.—Church; Churchwardens of St. Andrew's Parish.

Colne.—Additions, parish church; the Vicar.

Cwmrhydyieirw.—Chapel; Mr. F. Simpson, architect.

Darren View.—School; Mr. Thackeray, achitect, Town Hall, Merthyr.

Dean Bank.—Additions to school; Mr. T. Richardson, architect, 57, High-street, Stockton-on-Tees.

Doncaster. — Three shops, Trafford-street (3,000*l.*); Messrs. Sprakes & Son, builders, Doncaster.

Driffield.—Isolation hospital; Surveyor to Urban District Council.

Dundee.—Skating-rink, East Dock-street; Messrs. W. S. Cruickshank & Co., Dundee.

Easington.—School; Mr. F. Coates, architect, County Hall, Durham.

East Thorpe.—Church; Messrs. Chancellor & Sons, architects, Duke-street, Chelmsford.

Edinburgh. — Chapel, Rise-street; the Trustees, Charlotte-street Baptist Church, Edinburgh.

Ely.—Additions to infirmary (4,000*l.*); Mr. J. Allen, builder, Cardiff.

Epsom.—Nurses' home (1,450*l.*); Mr. J. T. White, surveyor, Epsom Union.

Epworth.—Primitive Methodist Sunday-school; the Trustees.

Gloucester.—Additions to workhouse; the Guardians.

Hawarden.—Vicarage (1,800*l.*); Messrs. G. Wright & Son, builders, Shotton.

Hertford.—Additions to infirmary; Clerk to the Guardians.

Heywood.—Underground convenience (500*l.*); Borough Engineer, Council Offices, Heywood.

Keyingham. — Church; Hull Primitive Methodist District Committee.

Kingscliff (Stamford).—Wesleyan chapel; Mr. H. Ireson, builder, Stamford.

Levensey.—School-house; County Surveyor, Horsham.

Loughborough.—Skating-rink, Asby-road, for the Loughborough Skating Rink Company.

Lowestoft.—The Town Council has passed the following plans:—Additions to Havelock public-house, Love-road, Messrs. Youngman, Preston, & Co.; eight houses, Beccles-road, Mr. G. Ansdell; mission-room, Meadow-road, Oulton, Rector and Churchwardens of St. Margaret's Parish.

Luton.—Electric Theatre, Gordon-street: Mr. F. Aulton, architect, Luton. Extensions to stores, Hastings-street; Secretary, Luton Co-operative Society.

Digitized by Google

Newbottle.—School: Mr. T. Rushworth, architect, Shire Hall, Durham.

Newport (Mon.).—The Town Council have passed the following plans:—Lock-up shops, Bridge-street, Messrs. Phillips & Vaughan, for Mr. C. F. Williams, Henleaze, Brynhyfryd-road; alterations to milk depôt, Evans-street, for the Newport Co-operative Society, Dock-street; skating-rink, Stow-hill, for the South Wales Rink Company, care of W. Longworth, 4, St. Mary's Parsonage, Manchester. The following plans have been lodged:—Houses, Somerton-road, Mr. F. R. Bates; ten houses, Mendalgief-road, Mr. G. Stemp, for Messrs. Dowden Brothers & Fisher, 88, Duckpool-road.

Oldham.—Additions to workhouse laundry; Clerk to the Guardians.

Pensnett.—Wesleyan chapel, for the Trustees.

Peterborough.—Skating-rink, for the Peterborough Rink Company.

Radclyffe.—Methodist church, Answorth-road (2,500*l.*); Mr. F. W. Porter, builder, Bury, Lancs.

Romford.—Art Gallery, Pyrgo Park, for Lord O'Hagan.

St. Neots.—Engineer's office; Messrs. Bull, builders, St. Neots.

Skelmanthorpe.—Vicarage; Mr. H. Scott, architect, 44, Waterloo-street, Birmingham.

Stockport.—Extensions to infirmary; the Guardians, Stockport.

Stourbridge.—Skating-rink; Mr. H. Boswell, builder, School-street, Wolverhampton.

Sutton.—A plan lodged by Mr. J. H. Thompson for a skating-rink in Throwley-road was passed by the Urban District Council.

Sutton.—Police-station; Messrs. F. Perks & Son, builders, Mansfield.

Swansea.—Proposed municipal depôt and stores, Foresters'-yard; Mr. Geo. Bell, Surveyor, Swansea Town Council. Training college (45,000*l.*); architect, care of Mr. Geo. Bell, Surveyor, Swansea Town Council. The Town Council has passed the following plans:—Seven houses, Monteney-street, Manselton, Mr. L. E. Jenkins; additions to St. Winifred's Convent, St. James's-crescent, for the Superioress; three houses, Cwm Lanterrace, Landore, Mr. Thomas John; four houses, Eaton-road, Brynhyfryd, Mr. W. Ingleson; four houses, Penvillia-road, Mr. W. Evans; three houses, Bonymaen-road, Mr. Hopkin Williams.

Taunton.—Factory, Rosebery-avenue; Mr. A. B. Cottam, architect, High-street, Taunton.

Treorchy.—Sunday-school; Mr. W. Morgan, architect, High-street, Pentre.

Tunstall.—Pavilion (1,200*l.*); Mr. F. Pemberton, builder, Tunstall.

Wallington. — Church hall, Holmwood-gardens, for the Wallington Congregational community.

West Ham. — Temporary building at Frederick-road School (1,200*l.*); architect, care of Mr. F. E. Hilleary, Secretary, West Ham Education Committee.

Westwood.—School: Mr. F. E. Coates, architect, Shire Hall, Durham.

Whitley.—Church; Messrs. Croggon & Co., builders, London.

Witham.—Restoration of parish church; the Vicar.

LONDON AND DISTRICT BOROUGH COUNCILS.

Bermondsey.—The following plans have been received:—Messrs. W. Lawrence & Son, builders, Canal Works, Waltham Cross, N., bovine factory, Mill-street and Jacob-street; Mr. J. J. Freeland, architect, 19A, High-street, Clapham, S.W., rebuilding No. 88, Albion-street; Messrs. J. E. Whiter & Co., builders, 13, Railway-approach, London Bridge, S.E., additions to Bacon's School, Grange-road; Mr. T. Thomas, builder, 191, Edgware-road, W., additions to Fountain Dock saw-mills, Farncombe-street.

Deptford.—278*l.* is to be spent in road repairing. The following plans have been passed:—Mr. F. J. Oldman, additions to the Aske's Boys' School, Pepys-road; Messrs. Wylson & Long, rebuilding the Navy Arms public-house, New King-street.

Finchley.—The District Council has passed the following plans:—Alterations and additions to St. Michael's Convent, Nether-street, for the Church Authorities; Messrs. Betstyle, Ltd., sixteen houses, Woodgrange-avenue; the Pinner (Barrow Point) Estate Company, four houses, Westbury-road; Messrs. Taylor & Huggins, four houses, Hendon-lane; Mr. J. C. Williamson, three houses, Lyndhurst-gardens; Mr. I. Rich, ten houses, Clifton-road, Bowlane; addition to substation for the North Finchley Metropolitan Electric Tramways Company, Ltd.; Mr. H. Watts, ten houses, Rosemary-avenue; Mr. J. A. Kensit, six houses, Hendon-lane and Wycliffe-avenue; Mr. A. J. Harris, two shops, Great North-road.

Finsbury. — The Borough Council have decided that the carriage-way of Bath-street, City-road, should be paved with compressed asphalt, at an estimated cost of 1,351*l.*

Fulham.—The Borough Surveyor has been instructed to have four side street of Field-road asphalted, at an estimated cost of 385*l.* A portion of Dawes-road is to be repaved with wood, at an estimated cost of 2,114*l.*

Hackney.—Part of Ravensdale-road is to be paved and drained, at an estimated cost of 1,079*l.* New street works are to be carried out in Leabourne-road by Mr. E. T. Bloomfield, the contract price being 419*l.* Cornish granite is to be used, Mr. Bloomfield's alternative prices for other granite being Norwegian, 425*l.*; Guernsey, 432*l.*; Leicestershire, 425*l.* Messrs. Mills & Daniells have lodged plans for additions to the premises of the Crown Perfumery Company, Sydney-road, and Tyntestreet, Homerton.

Hammersmith.—The seal of the Council has been affixed to an agreement with the Ecclesiastical Commissioners for the construction of a footway across the Commissioners' estate to connect Bloemfontein-road and Ducane-road. A plan, by the Borough Surveyor, for the paving of a portion of Wormholt-road as a new street, has been passed. Plans lodged by Messrs. Farebrother, Ellis, & Co. for shops in front of 266-276, King-street, have been approved.

Ilford.—The following plans have been passed by the Urban District Council:—Mr. A. Haines, four houses, Bradford-road; Mr. H. Harvey-George, forty houses, Guernsey-road; Mr. F. E. Clarke, ten houses, Stainforth-road; Messrs. W. P. Griggs & Co., four houses, Wanstead Park-road; Mr. E. T. Dunn, for Messrs. F. & A. Willmott, four houses, Park-avenue; Mr. W. H. Farquhar, new offices for Ilford Gas Company, Ilford-hill; Mr. A. Thomerson, for Messrs. Diprose & Knox, eighteen houses, South Park-drive; Mr. P. Cornish, for Mr. E. Partridge, nineteen houses, Mortlake-road; Mr. C. W. Duly, four houses, Coventry-road, and one house, Toronto-road.

Lewisham.—Part of Nowlands-park is to be paved and formed. Plans have been passed for paving and forming Haseltine-road, Lower Sydenham. The estimated cost is 511*l.* Drainage works are to be carried out in Beckenham-lane by direct labour by the Borough Surveyor at an estimated cost of 550*l.*; 344*l.* is to spent in repairing footways in Muirkirk-road. Chalcroft-road, Manor-lane, is to be paved as a new street. Mr. W. Pearce is to kerb, channel, and make up the footways of Wearside-road, at a cost of 384*l.*, and is to pave the footways with artificial stone at 3s. per yard super. The following plans have been passed:—Mr. James Watt, fourteen houses and one house and shop, Arran-road and Bromley-road; Mr. H. R. Hunter, thirty-six houses, Tannsfield-road; Mr. A. Roberts, eight houses, Brownhill-road; Mr. S. C. Kirby, six houses, Cranston-road; Mr. T. A. Boughton, twenty-eight houses, Bromley-road and Thornsbeach-road; Mr. W. J. Rees, three houses, Brockley-grove; Mr. A. Cooper, five houses, Datchet-road and Perry-hill; Messrs. Sheffield Brothers, skating-rink, Silverdale.

Poplar.—Repairs, etc., are to be carried out at the Bow, Island, and Poplar baths, at an estimated cost of 367*l.* In addition 260*l.* is to be spent in the internal painting, etc., of the Bow and Island baths.

Thames Ditton.—Several thousand pounds will have to be spent upon the sewage disposal works, which have now been in use for over twenty years. Pending the taking in hand of the larger scheme, it has been decided by the District Council to carry out various improvements as temporary expedients.

Tottenham.—Mr. E. Knifton, Edmonton, is to make up Ashfield-road, Hermitage Estate, the contract price being 427*l.* Plans have been passed as follows:—Mr. Henri Torley, two factories, Ashley-road; Mr. J. C. Isaacs, care of Mr. E. Evans, 253, Lavender-hill, S.W., two houses and shops, High-road; Mr. E. A. Chapman, two factories, Braemar-road; Messrs. F. Bender & Co., factory, Vale-road; Messrs. H. Knight & Son, additions to Middle-class Girls' School, Scotland-green; Messrs. Sage & Hope, 267, Park-lane, Tottenham, three houses, Willoughby Park-road; Messrs. Rowley Brothers, 462, West Green-road, South Tottenham, fifty-five houses; Mr. S. E. Child, care of Mr. E. Evans, 253, Lavender-hill, S.W., four houses, Wargrave-avenue; Mr. G. W. Rowley, two houses and shops and two houses, Thackeray-avenue; Messrs. Marshall & Griffin, 16, Crowland-road, South Tottenham, eighty-six houses, Elm Park-avenue, five houses and shops, Bailey's-lane, and six new streets off Elm Park-avenue; Messrs. Abbey & Sons, care of Mr. W. J. Burstow, 16, Gloucester-place, Brighton, twelve houses, Sherringham-avenue.

Wandsworth.—Paving works are to be carried out in front of new shops in Clapham Common, south side, at an approximate cost of 185*l.* Clairview-road, Streatham, is to be paved by Mr. R. Dykes at 1,070*l.*, and Pulborough-road, Southfield, is to be also paved by him, the contract price in this case being 1,279*l.* The following plans have been passed:—Mr. G. J. Philpot, twelve houses, Welldale-road, Streatham; Messrs. Chapple & Utting, twenty-one houses, Daysbrook-road and Wyatt Park-road, Streatham; Messrs. Woodley Brothers, four houses, Standen-road, and twenty-nine houses Wimbledon Park-road, Southfield; Mr. F. E. Cain, four houses, Hendham-road, Springfield; Messrs. Whitehead Brothers, addition to the Lady Close, Upper Richmond-road, Putney; Messrs. Antill & Squires, seventeen houses, Gracedale-road, Streatham; Messrs. H. F. Buchan & Co., four houses, Telford-avenue and four, Kirkstall-road, Streatham.

Competition News.

COUNCIL OFFICES, NEWBURN.

The Urban District Council have unanimously adopted the assessor's recommendation, accepting plans No. 15, and appointing the author of these, who proved to be Mr. Edward Cratney, Wallsend, as the architect to carry out the work, and awarding the premium of 10*l.* to the authors of No. 3, Messrs. Marshall & Tweedy, Newcastle. Mr. R. J. Leeson was the assessor.

Trade Catalogues.

THE Bostwick Gate Company send us a catalogue of their collapsible gates, window guards, and kindred specialties. A new form of collapsible steel gate for lifts is that described as Clark's patent, the main feature of the gate being the complete lattice filling, which leaves no space at the end of either lattice, as in the original form of collapsible gate. The same patent is applied to the construction of window guards and gates, as illustrated later in the same catalogue, wherein architects will find particulars of numerous purposes to which the useful apparatus described has been applied, together with some structural details and tables stating the space occupied by various gates and window guards when collapsed.

From Messrs. Doulton & Co. we have received a pamphlet containing four illustrations of good valve-closets. One of these has a neat pottery enclosure which can easily be removed, and another has a removable arm-chair enclosure. The No. 1620 pattern has the trap above the floor, and the rubber seating to the valve can be renewed without removing the basin. In the No. 1621 pattern a push-knob is provided for operating and flushing the basin.

The "Interioven" Patent Stove Company have sent us a four-page catalogue containing a description and illustrations of their fire-grate interior with oven and hot-plate. The grate appears to be well adapted for small flats and bungalows and other dwellings where economy must be carefully studied. It consists of an open firegrate with an oven above it, the oven door when closed having the appearance of a canopy. Just over the fire is a hot-plate, which is hinged at the back, so that it can be turned up or down as required. The whole grate is self-setting, special flues being provided around the oven.

BOOKS RECEIVED.

TOWN PLANNING IN PRACTICE: An Introduction to the Art of Designing Cities and Suburbs. By Raymond Unwin. Pp. 403. (T. Fisher Unwin. 21s.)

THE ELEMENTS OF MECHANICS AND MATERIALS. By C. E. Houghton, A.B., M.M.E. Pp. 184. (Archibald Constable & Co. 7s. 6d.)

Correspondence.

STOKE-ON-TRENT TOWN HALL ABORTIVE COMPETITION.

SIR,—After the following statement of this case, you will probably see that the above heading is fully justified. My first venture in a competition was as far back as the year 1849, and from that date at various times certain subjects have drawn me into the fray, and, generally, competitions and all that has passed in relation to them have had my attention more or less. Many have been the complications of trouble to the trustful aspirant to architectural fame, but on no occasion within my memory has there arisen anything like the extraordinary proceedings in the case in question.

Digitized by Google

The Town Council of Stoke-on-Trent resolved to erect a great extension to the present Town Hall, and they sought the advice of the Royal Institute of British Architects in the matter of appointing an assessor, and applied to the Institute to give them a name, and that of Mr. Leonard Stokes was put forward and adopted by the Council. Under his concurrence, as is commonly understood, regulations for the guidance of competitors were framed and issued; they included a stringent clause on the score of limit of outlay, amounting to disqualifying designs not estimated to be within the specified sum of 25,000*l.* The advertisement of the instructions attracted the submission of designs from upwards of no less than eighty architects, some of them men of first-rate standing, and not a few of them Fellows or Associates of the Institute. The proceedings up to the deposit of the plans were all that could be desired; yes, for a further time than this, even to the moment of the choice of the assessor of the designs which merited the appointment for carrying out the works, and the awarding of premiums of 100*l.* and 50*l.* respectively. At this point the action of the assessor was on its trial. He had to consider what his powers were and what his construction of the conditions really was, more especially on the clause as to outlay. Exclusion on the clause on excess of cost was to be "adjudged," but the regulations did not state by whom. The assessor seems to have concluded that he was the arbitrator between the Town Council and the competitors, and that if he chose designs the best in his opinion and nearest to the stipulated outlay, he would be giving a legal and equitable award. But he wrote a letter to the Town Clerk stating that in his view the fixed amount for the expenditure was not sufficient to cover all the requirements, and that he had selected the three designs he considered the best and nearest to the money prescribed. On this letter the Committee decided that the three designs named by the assessor were disqualified under the conditions, and that neither commission nor premiums had been duly earned, but as the estimate for the third design was only 15*l.* above the stipulated sum, they would give the higher premium of 100*l.* to its authors, but they regarded the first and second of the assessor's choice as disqualified. Thus the assessor's labours became absolutely abortive, and the Committee withhold the second premium.

Was ever such fiasco perpetrated before even in competition concerns? But the complications do not end here. The Committee "carefully inspect all the designs" themselves, but find none equal to being adopted, and from their own bat select a design to their own liking, but not being satisfied with it they commission its authors to prepare a new design, and arrange terms for the carrying out of the building. Had there been any desire to follow the assessor's award, could not the authors of his choice have made a new design? Could not any one of the three have done so? Had not the first named by Mr. Leonard Stokes a legal claim for priority under the circumstances? But there is, indeed, serious subject for thought and action on the part of the Institute of Architects. They nominated the assessor, he acted under their influence through the Committee which brought about an unusual competitive effort from architects of every part of the country. Have they not a claim on the Institute for a pronouncement of its view on the facts here stated? Can the Institute enlighten the competitors as to the legal position of the assessor in relation to his award? Does it amount to a position of arbitrator? If the Committee have acted fairly and legally, it may, with all respect, be asked, where is the virtue of a nomination by the Institute? The Committee may take up the position of saying that the duty of the assessor was to disqualify every design where the estimate exceeded the given sum of 25,000*l.*, but as a rule it may be said that a percentage of margin is admitted to be allowable. Every competitor in this intricate case must feel, looking to the broad future, that he is entitled to learn from the Institute after their nomination of assessor where he stands in relation to the invitation to compete, the nomination by the Institute, and the final dealing in the case by the Town Council. CHARLES LYNAM, F.R.I.B.A.

*** Our opinion has always been that where a definite limit of cost has been stated, all competitors who exceed it by more than 10 per cent. should be considered as disqualified, and that it is the duty of the assessor to act on this principle. If the assessor considers that the sum named is too little for the building, the promoters should be informed of that before, and not after, the designs are asked for.—ED.

THE LION AT LUCERNE.

SIR,—I notice in your columns some reference to the supposed decay of the noted Lion Monument by Thorwalsden, which dramatically recalls the bravery of the Swiss Guards during the French Revolution.

I inspected the monument so recently as a fortnight since, and saw nothing in it to alarm, but in the adjoining rocks slight signs were visible, and I was informed that the local authorities have recently excavated with a view to draining off the water from the earth behind the rock, and so prevent any evil consequences. HENRY LOVEGROVE.

*** The statements in the *Times* and elsewhere implied that the monument was rapidly going to pieces.—ED.

Obituary.

M. CHOISY.

We greatly regret to announce the death, which seems to have taken place rather unexpectedly, of M. Auguste Choisy, whose name is well known to all serious students of architecture in this country for his remarkable works on the practical illustration of the building methods of ancient architects. We say "the practical illustration," because M. Choisy, a member and latterly engineer-in-chief of the Department of "Ponts et Chaussées," although he made architecture one of his chief studies, and was Professor of that subject in the Department, was by study and temperament more of an engineer than an æsthete. But it was this fact and this special temperament which give the special value to his treatises. There have been many writers on the artistic principles and developments of ancient architecture, and no doubt it is as an art that ancient architecture has its highest value. But M. Choisy set himself to study and elucidate not so much *what* the architects in ancient times did as *how* they did it. It was the "art de bâtir" that fascinated him; the "method of building," among the Egyptians, the Romans, and the Byzantines; and his three treatises on these three subjects are full of acute reasoning, the fruit of minute study and observation; and if (like some other French archæologists) he was too prone to treat as proved that which he had only succeeded in representing as probable, many of his probabilities as to ancient construction impress themselves on the reader, in his brilliant demonstrations, as at all events more likely to be the true solution than any other that could be offered. His "History of Architecture," the fruit of many years' study, is a monumental work in its way. Like the "Art de Bâtir" treatises, it is concerned with the processes of architecture rather than with the results. The illustrations to this and his other books are characteristic of the man and of his attitude towards his subject; there is no attempt at artistic effect in them; they are the careful and learnedly drawn representations of *fact*, or what he believed to be such; and if some of his facts may be rather imaginative, they are much less so than the brilliant and picturesque inventions of Viollet-le-Duc. M. Choisy, who was a native of Vitry-le-François, was 68 at the time of his death. In 1904 he was invited to London to receive the Gold Medal of the Institute of Architects at the hands of the then President, Sir Aston Webb, and gained the personal regard of all who met him. Though short in stature, M. Choisy was a man of very fine presence, with something military about his personality—that combination of the character of soldier and *savant* which has been not infrequently seen among eminent French artists and engineers: Horace Vernet, Decamps, and Gérôme impress one in the same way. In every way he was a remarkable Frenchman, and his loss will be widely regretted.

MR. MCKIM.

We regret to announce the death, on September 14, of Mr. Charles Follen McKim, aged 62 years, senior partner of Messrs. McKim, Mead, & White, of New York, architects. Mr. McKim, Royal Gold Medallist, 1903, was born in Chester Co., Pennsylvania; he entered Harvard University as a mining engineer student, and then, in 1866, entered the offices of the late Mr. Russell Sturgis, of New York, architect. In the autumn of that year he studied in the Atelier Daumet, Paris, for admission into the Ecole des Beaux-Arts, and lived in Paris until the outbreak of the Franco-Prussian War. In the interval he travelled in Europe, and coming to England in 1869 was made an honorary member of the Architectural Association. In 1870 he entered the offices of Mr. H. H. Richardson, architect. Two years afterwards he began to practise independently; in 1877 he took as partner Mr. William Rutherford Mead, and, in 1879, Mr. Stanford White (who died, under tragical circumstances, on June 25, 1906), under the style of McKim, Mead, & White. In 1889 were established the two McKim Fellowships in the School of Architecture, Columbia University. In 1891 Mr. McKim was appointed to the Commission of ten architects practising in the United States to design the World's Columbian Exhibition, Chicago; in 1897 he was appointed President of the then incorporated American Academy of Architecture in Rome; in 1899 he was made member of the first Municipal Art Commission of the City of New York, and was elected member of the Academy of San Luca. Eight years ago Mr. McKim was appointed member of the Park Commission for improving the park system of the Columbia district, and shared in drawing up a scheme, at an estimated expenditure of from three to four millions, for many great public buildings, with an avenue one and a half miles long and 1,600 ft. wide. In 1901, and again in 1902, Mr. McKim was elected President of the American Institute of Architects; in the latter year the then President Roosevelt nominated him as architect of the new Army War College and Engineers' School, and the Barracks at Washington, and of the restoration of the White House (Executive Mansion), Washington. In 1894 the firm were appointed architects of the new Capitol buildings, Rhode Island. Mr. McKim was appointed member of the United States Council of Fine Arts upon its constitution in February of this year.

The following is, we believe, an almost complete list of the works carried out during the past thirty years by Mr. McKim and his firm:—In Boston—Free Public Library (1888-95), built at a cost of 473,000*l.* for the fabric; Radcliffe College, Harvard University; Symphony Hall; Algonquin Club; and houses for the Hon. J. A. Andrew, General C. A. Whittier, Mr. F. I. Amory, the Hon. R. Olney, and Mr. G. A. Nickerson. In New York—Washington Memorial Arch; City University; Harvard and University Clubs; Carnegie branch Libraries; Pennsylvania Railroad terminal station; Library and Art Museum, with high side-lights and an exterior of white marble, in East-street, for Mr. J. Pierpont Morgan; New Bellevue Hospital; Harmonie Club; buildings for Messrs. Tiffany & Co., jewellers, the Knickerbocker Trust Company (in classic style), and the Gorham Company, silversmiths; Imperial Hotel; the *Judge* Building; Freundschaft, Century, and Metropolitan Clubs; Deutscher Verein; Judson Memorial Church; Power-house and Offices of the Broadway Cable Railway; 135th-street (branch) Public Library; Bowery Savings Bank; *New York Herald* buildings; office buildings for Messrs. Cornelius and W. K. Vanderbilt; Museum of the Brooklyn Institute of Arts and Sciences; No. 22, East 35th-street; Madison-avenue Presbyterian Church, of coloured materials; and houses for Mr. Louis C. Tiffany, Mr. J. Stillman, Mr. H. Villard, the Hon. J. Hampden Robb, the Hon. Levi P. Morton, Mr. J. Pulitzer, and the Hon. W. C. Whitney. In New York State—Power-house of the Niagara Cataract Company, Niagara Falls; West Point Battle Monument; Officers' Mess Hall and Quarters, and Cullom Memorial Building, West Point; Columbia University, and the Library; Medical Department, Cornell University; and country houses for Mr. C. J. Osborn (Mamaroneck), Colonel E. F. Shepard (Scarborough), Mr. Fredk. W. Vanderbilt (Hyde Park), and Mr. Ogden Mills (Staatsburg). In Chicago—The Agricultural Building and New York State Building, World's Columbian Exhibition. In Montreal—The Bank of Montreal, and Mount Royal Club (illustrated in the *Builder*, July 10 last). In Cambridge, Mass.—Harvard University Architectural Department; the Campus Fence; and the Johnston, Porcellian, and the several "Class" Gates; and the Harvard Union. The New York Life Insurance Company's buildings in New York, Kansas City, Missouri, Omaha, and Nebraska. In Rhode Island—Capitol of the State; and, in Newport, the Casino; and country houses for Mrs. W. Edgar, Mr. E. D. Morgan, and Mr. H. Oelrichs. In Long Island—Country houses for Mr. C. H. Mackay (Roslyn), Mr. E. D. Morgan (Wheatly Hills), and the Hon. W. C. Whitney (Roslyn). In New Jersey—St. Peter's Church, Morristown; Public Library, Orange; and a country house for Mr. H. McK. Twombley (Madison). First Methodist Episcopal Church, Baltimore; Walker Memorial Library, Bowdoin College, Brunswick, Maine; Public Library, and First Congregational Church, Naugatuck, Connecticut; University of Virginia, Charlottesville, Virginia; Detroit Savings Bank; Cottage Club, Princetown; and houses for Mr. T. B. Wanamaker in Philadelphia, Mr. L. C. Hanna in Cleveland, and Mr. T. N. Page and Mr. R. W. Patterson in Washington; Germantown Cricket Club, Philadelphia; and, by Mr. McKim, the design for the John Harvard stained-glass memorial window, St. John's Chapel, Southwark Cathedral, London, 1905. We may add that Mr. McKim received the Royal Gold Medal at the hands of Sir Aston Webb, R.A., then President of the Institute.

Digitized by Google

General Building News.

BOXFORD PARISH CHURCH, NEWBURY.

The ancient church of St. Andrew, Boxford, has been restored. The scheme of restoration includes the following:—The ceiling of the nave, which hid the roof, has been removed, and the ancient oaken timbers exposed to view, being carefully repaired where necessary. The XVIIIth century deal gallery was taken down, and the tower arch opened out, with an oak screen placed before the entrance. The floor is relaid with wood blocks. The aisle roof, of 1841, has been preserved and improved by wooden beading. The tower and porch were thoroughly repaired, the bell frame being strengthened. In the chancel the ceiling was removed, and the roof lined with oak below the rafters. The plaster was taken from the south wall, opening out a chancel door, formerly hidden, a south window, and a XVth century piscina, much damaged, but now restored. The floor is relaid with squares of Bath and Hamton stone. The work has been carried out by Messrs. Hoskings Brothers, builders, of Newbury, from the plans of the Diocesan Architects, Messrs. J. Oldrid Scott & Sons. The cost will be probably nearly 1,000*l*., exclud the work done to the chancel.

NEW CHURCH, STARBECK.

The foundation-stone was recently laid of the new church of St. Andrew, Starbeck, near Harrogate. The new building has been designed by Messrs. Austin & Paley, architects, Lancaster. It will seat rather more than 600 people, and will cost about 6,000*l*.

CHURCH ADDITIONS, HULL.

The Wycliffe Congregational Church has been enlarged by the erection of a new lecture hall and Sunday-schools. The new buildings comprise, on the ground floor, minister's and deacons' vestries, lady workers' and teachers' rooms fitted with sliding partitions, also church keeper's lobby, cloakrooms, and conveniences. In the basement there is a kitchen for providing teas, etc., heating chamber, and fuel store. From the crush hall two stone staircases lead up to the church balconies and the large hall, which measures 70 ft. by 27 ft., and will accommodate over 400 people. It is lighted by windows east and west, filled with stained-glass, and with stained-glass counter light in the ceiling; the floor is also made sound-proof. From the staircase there are the necessary conveniences, which are paved with terrazzo. The buildings are fitted throughout with electric light, and heated on the hot-water radiator system and well ventilated. Gas stoves are provided in the various rooms. The contractors were Messrs. Quibell, Son, & Greenwood, Ltd., builders and stonemasons; Messrs. H. Williamson & Co., slaters; Messrs. R. Finch & Co., joiners; Mr. W. G. Padgett, plumbing, glazing, and gas fitting and electric lighting; Messrs. Young & Peck, Ltd., iron-founders; Messrs. E. J. Owen & Co., painters; Messrs. King & Co., Ltd., heating engineers; and the buildings have been designed and carried out under the superintendence of Mr. P. Gaskell, of the firm of Freeman, Son, & Gaskell, architects and surveyors, Hull.

WESLEYAN CHAPEL BUILDING SCHEMES.

At a meeting, recently held, of the Wesleyan Connexional Chapel Committee, it was reported that new chapels are to be erected at Streetly, in the Birmingham (Sutton Park) Circuit, seating 210 persons, at a cost of 1,586*l*., and at Bourne End, in High Wycombe Circuit, seating 125, and costing 1,062*l*. Among alteration and enlargement schemes are:—Pleck, Wednesbury, erection of porch and kitchen, 100*l*.; and Chilvers Coton, Nuneaton, adapting old chapel for institute, 208*l*.

WESLEYAN CHAPEL, UPPER CALDECOTE.

A new Wesleyan church and school have been opened at Upper Caldecote. The buildings, which are of red brick with white stone dressings, were designed by Mr. Thomas Cockrill. The contractor was Mr. Charles Wright, the contract price being about 1,300*l*. The walls throughout have been treated with Duresco. The floor is of pitch-pine, as also are the seats, which provide for 220 persons. The school has seating accommodation for 200 persons, and is constructed so that it and the main building can be used as one. At the western end of this building is situate a minister's vestry and a classroom for the men's Bible class. The heating is provided by a hot-water system.

COUNCIL SCHOOL, BYKER.

A new school has been erected by the Newcastle Education Committee in Bolam-street, Byker. The premises provide accommodation for 1,400 children. The building at the east end is two stories in height, and is arranged for 300 senior girls on the ground floor, and 300 senior boys on the upper floor, each in six classrooms which open off a central hall. Teachers' rooms are provided in convenient positions, and, in connexion with the girls' school there is a cookery department, with scullery, pantry, and the usual equipment. Above the cookery department is a manual instruction department for the boys. The central block of buildings is occupied, on the upper floor, by 400 junior scholars, and on the lower floor by 400 infants, each accommodated in seven classrooms about the central hall. The school for defectives is placed at the west end of the site, and comprises a small hall and classrooms, together with dining-room, kitchen, bathroom, etc. The buildings have been designed by Mr. W. H. Knowles, architect, Newcastle, Mr. J. S. Graham being the clerk of works, and Mr. John Craven the general contractor. The sub-contractors were Messrs. E. Beck & Son for slating, Mr. J. Turton for plastering, Messrs. Merrilees & Denton for painting, and Messrs. Allinson & Son for the plumbing. The heating has been executed by Messrs. Dinning & Cooke, the ventilation by Messrs. Aynsley & Co., and the smith work by Messrs. Swinney Brothers, and the general hardware by Messrs. H. Walker & Son. The cost of the premises amounted to 18,061*l*. 14s. 6d.

WESLEYAN SCHOOL-CHAPEL, NORWICH.

A Wesleyan school-chapel has been built on Sprowston-road, Catton. The new building is erected from plans prepared by Messrs. E. Boardman & Son, comprising a central hall, with four classrooms. At the rear is a large room for infants, on one side of which is a kitchen, with heating chamber under, and on the other lavatory accommodation. The heating, which has been carried out by Messrs. Johnson, Burton, & Theobald, is on the low-pressure hot-water system, the main hall and small hall being provided with ventilating radiators. Ventilation is also provided by means of a number of hopper and pivot hung windows, and a large exhaust ventilating turret is provided in the centre of the roof. The premises are lighted with electric light, for which Messrs. Mann, Egerton, & Co. have been the contractors, Osram lamps being fixed in all the principal parts. The oak seats with which the main hall is provided have been made by Messrs. G. E. Hawes & Sons, and the glazing throughout has been done by the Norwich Glass Company. The contractors for the building have been Messrs. J. Youngs & Sons.

HIGH SCHOOL FOR GIRLS, DUDLEY.

A high school for girls is being erected on a site in the Priory-road, Dudley. The main building of the new school consists of two stories, and is laid out in the form of a letter "E," the large assembly hall occupying the centre. This hall (70 ft. by 30 ft.), which is partitioned off from the main corridor, contains a gallery at one end, and a retiring-room, with separate exit, at the other. The two outside wings contain eleven classrooms and two lecture-rooms, with preparation-rooms adjoining; also physical and chemical laboratories, combined cookery and dining room, besides head mistress's-room, waiting-room, assistant mistress's-room, and staff laboratory. On the upper floor are provided on one side of the assembly hall a library, and on the other four music-rooms. Amongst other details in the matter of accommodation there will be storage space for fifty-six bicycles. The buildings will be built in brick and stone. A low-pressure, hot-water heating apparatus will be provided, and the electric light will be installed throughout the premises. The amount of the tender for the building is 15,500*l*., and altogether the cost will probably reach nearly 23,000*l*. The school has been designed and is being carried out under the superintendence of Mr. J. Hutchings, Architect to the Staffordshire County Education Committee, and the builder is Mr. G. F. Fisher, of Northampton.

CRANLEIGH SCHOOL, CAMBERLEY.

A number of improvements have been effected during the holidays at this school. They have been carried out under the supervision of Mr. E. L. Lunn, architect, of Guildford; and the main work has been executed by Messrs. Warren & Killick, of Cranleigh.

CHURCH SCHOOL, REACH, CAMBRIDGE.

A new Church of England day school is being built in the village of Reach. The building of the school is in the hands of Mr. J. S. Cowell, of Soham, and Mr. Herbert Hunt, of Burwell, is the architect for the work.

GIRLS' HIGH SCHOOL, WALLASEY.

A new High School for Girls has been built by the Wallasey Education authorities in Mount Pleasant-road, New Brighton. It has been built from the designs of the architects, Messrs. Appleyard & Quiggin, of Liverpool. The building comprises three stories, and is faced with red Ruabon brick, with grey terra-cotta dressings. The main front entrance hall is flanked by the headmistress's room and the library, and leads to the great central hall. There is accommodation for 300 scholars. To the west of the main building is the gymnasium, furnished. Blocks to the east and west contain cloakrooms, lavatories, and bicycle-sheds. On the ground floor are the assistant mistresses' room, the kindergarten classroom, and three other classrooms. On the first floor there are seven classrooms, access to which is obtained from the balcony around the central hall. In the east block, over the cloakrooms, is a science-room, whilst the lecture-room and laboratory (with a preparation-room) are in one, there being benches for thirty pupils for laboratory work in physics and chemistry. Over this is a art-room, with a north light, fitted up for modelling in clay, work from the cast, and all other forms of advanced art. Next to this is the music-room, with practice-rooms. Over the cloakroom in the west wing is a large dining hall, with kitchen, scullery, and servery attached, where forty scholars can dine at once. There is also a cookery-room. The school is lighted throughout by electricity. The work has been carried out by Messrs. T. Spencer & Son, Aintree.

COUNCIL SCHOOL, SUNDERLAND.

A new school has been opened by the Durham County Education Committee at Fulwell, near Sunderland. The building has been erected at a cost of 9,000*l*. by Mr. James Armitage, of Southwick, from designs by Messrs. W. and T. R. Milburn, of Sunderland. On the ground floor there is accommodation for 400 girls, and on the first floor provision for an equal number of boys. On each floor there are eight classrooms arranged on the three side of a central hall. There are also corridors and rooms for the staffs, the latter being so placed as to permit of supervision over the school and playground. There is a cookery section for fifty-four scholars.

PROPOSED SECONDARY SCHOOLS, WHITBY.

The North Riding Education Authority have accepted the plans of Messrs. Thompson & Bristoe, of London, for the new secondary schools proposed to be built at Whitby.

COUNCIL SCHOOL, BOSCOMBE.

A Council school for girls has been built in Haviland-road, Boscombe. The building was designed and erected under the supervision of the Borough Surveyor (Mr. F. W. Lacey), and the net cost has been 4,215*l*. 6s. 6d.

LONDON COUNTY COUNCIL SCHOOL OF BUILDING EXTENSION, BRIXTON.

The buildings recently completed form an extension to the school, which was opened in 1904 for the purpose of instruction in building and the allied trades. The position of the extension on the vacant land available was determined by the proximity to the railway on the north side, and to the dwelling-houses in Ferndale-road on the south side. These factors led to placing the lecture hall farthest from the railway and adjoining the Ferndale-road houses, where, by reason of the comparatively low roof, interference with rights of light of these houses would be avoided. The principal portion of the building is arranged in a block parallel to the railway, and double windows are provided in those rooms where quiet is essential. Laboratory and workshop accommodation (in accordance with schedules prepared by the officers of the Education Department) is provided chiefly on the north side of the main corridor. The extension (about 198 ft. long) contains two staircases extending the whole height of the building, providing alternative means of escape in case of fire. On the ground floor are placed the lecture hall, arranged to seat 200 persons, rooms for the principal, principal's assistant and clerks, mechanical and physical laboratories, smiths' shop, men's cloakroom and lavatories. On the first floor are the chemical laboratory, demonstration classroom, stone-carving room, a workshop, and the students' common-room, and library, also cloakroom accommodation for women. On the second floor are classrooms for wood-carving, ornamental leadwork, a painter's shop, two classrooms, teachers' common-rooms, and lavatory accommodation for men. On the third floor are architectural drawing office, architectural classroom, ornament-room, modelling-room and figure-room, the three latter being provided with north light. The buildings, externally, are faced with yellow stock bricks, and the roof is covered with green slates. The walls of the corridors, staircases, and laboratories are lined to height of about 4 ft. with brown salt-glazed bricks, and above this they are plastered and finished with distemper. The walls of other classrooms generally are plastered and distempered. The floors of the classrooms are laid with wood blocks, and those of the corridors with red tiles. The details of the fittings have been

Digitized by Google

considered in conjunction with the Education officers. An external hoist has been provided in the yard for conveyance of clay, plaster, etc., to and from the upper floors. The building is mechanically ventilated by means of electrically-driven fans placed in the roof, and is lighted by electricity, and heated by steam on the vacuum principle. The building has been designed without reference to any particular style, the object being to secure a plain, substantial structure expressive of its use. The contract amount for the building work is 24,996*l.*, and the Council sanctioned a sum of 2,000*l.* for the equipment. Mr. W. E. Riley was the architect of the work.

FOSSDYKE, SOUTH LINCOLNSHIRE.

The new bridge will replace the wooden one which was built across the Welland some 100 years ago in lieu of the old ferry, for the transit by road to London of the cattle which were carried by sea from Scotland to the ports of Grimsby and Hull. The parish, which separates the parts of Kesteven from those of Lindsey, is named after the fosse dyke which King Henry II. caused to be constructed between the rivers Witham and Trent. The Holland County Council appointed Mr. J. Healy Johnson, of Boston, to make designs for the work, and have accepted a tender of 16,834*l.* from Messrs. Andrew Handyside & Co., of Derby, for a swing bridge to be built, and providing a widened road and increased waterway, on the west side of the existing bridge, and at a lower level, with a reduced gradient rate in the approaches. It is proposed, we gather, to carry a light railway across the bridge.

GOVERNMENT BUILDING CONTRACTS.

The following tenders have been accepted by the Departments named:—War Office—Clarke & Epps, Cornwallis-road, Maidstone, construction of groynes, Hythe; H. Laverty & Sons, Ltd., Cambridge-street, Belfast, erection of mobilisation storehouses, etc., Newbridge Barracks; H. Lovatt, Ltd., Darlington-street, Wolverhampton, erection of pier, Shoeburyness; E. Deane & Beal, Ltd., 1, Arthur-street East, E.C., heating, etc., Army Ordnance Depôt, Tidworth; and heating and hot-water apparatus, Colchester Military Hospital; G. Mackay & Son, 32, York-place, Edinburgh, main sewage and surface water drainage, Redford, N.B.; Crosby & Co., South-street, Farnham, Surrey, repair of roofs of twenty-nine huts, North Aldershot. Office of Works—Doulton & Co., Ltd., Albert-embankment, S.E., drainage renewal, Treasury; Acme Flooring and Paving Company, Ltd., Gainsborough-road, Victoria Park, N.E., flooring, wood block, Admiralty Block IV.; Brightside Foundry and Engineering Company, Ltd., Wicker Works, Sheffield, heating apparatus, Sheffield P.O.; Charles Ritchie & Co., 32, Torphichen-street, Edinburgh, heating apparatus, Edinburgh G.P.O.; A. Grindrod & Co., 9, Shrewsbury-road, Sheffield, heating apparatus, Scarborough, P.O.; Cannon & Hefford, Stanbury Works, Stanbury-road, Peckham, S.E., heating apparatus, Southampton Ordnance Survey; H. W. Pollard & Son, Bridgwater, erection of new post-office, Taunton; W. Bainbridge Reynolds, Ltd., Manor House, 7B, Old Town, Clapham, S.W., wrought-iron and glass covered way. Office of Woods—Stephen Kavanagh & Co., Surbiton-hill, Surrey, road widening at Oxshott, Surrey; Bottrill & Dawtrey, Broadway-buildings, Reading, alterations and repairs to Cumberland Lodge, Windsor Great Park. Commissioners of Public Works, Ireland—Patrick J. Gilmartin, Ballina, Co. Mayo, Bullsmouth New National School, Co. Mayo; Saula New National School, Co. Mayo. Metropolitan Police—Croggon & Co., Ltd., 16, Upper Thames-street, E.C., building a temporary charge-room, etc., at Vine-street Police Court.

NEW BUILDINGS IN ABERDEEN.

The Plans Committee of the Aberdeen Town Council report having sanctioned plans as follows:—Dwelling-house on the north side of Victoria-road, for Messrs. R. Beattie & Son, builders, per Mr. William Beattie, architect; four dwelling-houses on the west side of Whitehall-terrace, for Messrs. Bowie & Manson, masons, per Messrs. W. Henderson & Son, architects; Mannofield Parish Church, Great Western-road, for the Managers of the Church, per Mr. John Milne, architect; and alterations on premises at Commercial-road, for the North-Eastern Ice Company, Ltd., per Messrs. Brown & Watt, architects.

FREE LIBRARY, DUDLEY.

A new free library has been opened in this town. The building comprises a hall, a magazine-room, general reading-room, and a reference library. The warming is effected by radiators and pipes, and the ventilating by electric fans. The artificial lighting is by electricity. The Town Council invited designs for the new building, receiving in response twenty-three plans and designs, and of these the design of Mr. Geo. H. Wenyon, of Dudley, was accepted.

BUILDING IN LONDON.

Cordwainers Hall, Cannon-street, E.C.; Messrs. Chatfeild Clarke & Son, architects, Bishopsgate-street, E.C. Rebuilding 36, Queen Anne-street, for Dr. R. Percy Smith, 50, Welbeck-street, W. Rebuilding 268 and 270, Oxford-street, W.; Mr. Barrett, care of Messrs. Elliott, Son, & Boyton, 6, Vere-street, W. Rebuilding 272, Oxford-street, W.; Mr. J. Sawyer, architect, 118, Holborn, E.C. Shop, Blackfriars-road, S.E.: Messrs. J. Hoare & Son, builders, 74, Blackfriars-road, S.E. Rebuilding 46, Harley-street, W.; Mr. H. H. Hollingsworth, builder, High-street, Peckham, S.E.

NEW BUILDINGS IN SLOUGH.

The Slough Urban District Council have passed the plans of the following new buildings:—Two houses in Montague-road, for Mr. J. H. R. Atkins; motor-house in Upton-road, for Mrs. M. E. Evans; two houses in Ragstone-road, for Mr. H. Atkins; additions to house in Church-street, for Mrs. Weaver Adams; and, conditionally, three houses in Church-street, Chalvey, for Mr. J. W. Holdway.

NEW HARBOUR OFFICES, YARMOUTH.

New offices have been erected on the South Quay, Yarmouth, for the Port and Haven Commissioners. The premises face west, the elevation to the quay having grey Cornish granite for the ground floor. The first and second floors have granite dressings to the windows and granite quoins at the sides, the main portion of the walling being filled in with dark squared flintwork. The gable has granite and flint chequer-work, with a carved apex block representing shipping. The roof is covered with a dark brindle plain tile, and the rest of the walling is of dark red Somerleyton brickwork. The ground floor of the building has a public office. Opening into this is the Harbour Master's room and the Accountant's office. The staff lavatories and caretaker's quarters are arranged at the back of the premises. Through the public office is the inner hall, with oak staircase leading to a wide landing on the first floor, off which are the Commissioners' lavatories. The clerks' office opens off this landing, and is a counterpart of the office below. The main feature of the building is the board-room on this floor, measuring 22 ft. by 25 ft. On the second floor is a committee-room. The work has been carried out by Messrs. Carter & Wright, of Great Yarmouth, who also executed the oak panelling, fittings, and plaster-work, the carved work being done by Messrs. Howard & Son, of Norwich. Mr. Pank, of Great Yarmouth, is responsible for the electrical work, and Messrs. Palmer Brothers, of this town, supplied the floor coverings, window blinds, etc. The roof tiles were supplied by Messrs. Dawber, Townsley, & Co., Messrs. Olley & Haward, of Great Yarmouth, were the architects.

PROPOSED HALL AND PAVILION, PORTHCAWL.

The Porthcawl Council have approved plans submitted by Messrs. J. F. Lambert & Sons, architects, Bridgend, for a proposed hall, pavilion, refreshment-rooms, and caretakers' house, and also a block plan showing tennis-courts, and cricket and cricket grounds, with band-stand and promenade.

HOME FOR SAILORS, BRISTOL.

The Incorporated Seamen and Boatmen's Society is building a Sailors' Rest and Home at Hotwells, Bristol. The new building comprises a large reading-room, a smoking-room, lavatories, etc. The tender of Messrs. Marsh & Stone, of Bedminster, was accepted, and this firm is carrying out the work on the plans and specification prepared by the architect, Mr. Trew, of Bristol.

NEW BUILDINGS AT MIRFIELD.

The Mirfield District Council have approved plans for the erection of a branch store in Dark-lane, for the Perseverance Co-operative Society, and for a working-men's club and institute in Eastfield-road, Northorpe.

BUSINESS PREMISES, EXETER.

New premises have been erected in Sidwell-street, Exeter, for Mr. Sidney T. Herbert. Mr. J. Archibald Lucas, architect, prepared the plans and supervised the work, which was carried out by Mr. W. Brealy, of St. Thomas.

ODDFELLOWS' HALL, NEWPORT, ISLE OF WIGHT.

The members of the Earl Yarborough Lodge of Oddfellows are building a new hall. The tender of Mr. Harry Scott, at 950*l.*, has been accepted. The work will be carried out from plans prepared by Mr. J. C. Millgate.

TRADE NEWS.

MESSRS. DOULTON & CO., Ltd., have supplied the whole of the sanitary fittings to the Strand Hotel. In each bedroom there is a Jaune Lamartine marble lavatory, fixed on plated legs, with towel rail and high skirting with glass shelf. There are hot and cold fittings, and specially large basins. The bathrooms have cast-iron baths, white porcelain-enamelled inside and outside, the outside enamel being very superior to the ordinary painted outside; it not only improves the appearance, but it is so easily kept clean. The closets are wash-down type, complete with cisterns, pipes, and seats, etc. In the public rooms the lavatories are in dove marble, and in the hairdressing rooms they are in sanitary marble, with special mixing valves and hand sprays. The urinals in the public rooms and the sinks in the offices, etc., are in Doulton's special white glazed vulcanware.

The fronts to the four surrounding thoroughfares are glazed with Doulton's "Carrara" (or "Egg-shell" surfaced) ware, built in with the brickwork as the walls were erected. With the exception of a sparing use of a grey-green colour on the jambs and arch of the Strand entrance all the ware is glazed in white, the slightly differing tones of which (resulting from the method of firing the ware) prevent any effect of monotony in such large frontages. The front to the Strand is the most elaborate, though of relatively small dimensions (70 ft. high and 24 ft. wide), occupying only the width of the former entrance to Exeter Hall (the stones of which, it will be remembered, have been rebuilt at the London County Council School of Building, Ferndale-road). The fronts to Exeter-street West, Exeter-street North, and Burleigh-street are more simple in design, and measure, respectively, 116 ft., 216 ft., and 64 ft. in width, with heights ranging between 70 ft. and 90 ft. There are eight floors included in these elevations. The architects were Mr. W. J. Ancell and Mr. H. Tanner, jun.

Messrs. John Greenwood, Ltd., 12 and 14, Arthur-street West, London Bridge, S.E., have secured the contract for the erection of the central premises for the Y.M.C.A., with frontages to Tottenham Court-road, Great Russell-street, Caroline-street, and Bedford-avenue. The plans have been prepared by Mr. Rowland Plumbe, and comprise accommodation for young men's club, business training college, gymnasium, swimming-baths, department for boys, residential home with from 200 to 300 beds, school for Bible study, etc. The total estimated cost of the premises is put down at 175,000*l.*

Considerable additions have been carried out at Wells Asylum under the supervision of Mr. G. T. Hine, architect. Doulting stone was used from the Chelynch beds, and was supplied by the Ham Hill and Doulting Stone Company, Ltd. The builder was Mr. H. W. Pollard, of Bridgwater.

Messrs. Patman & Fotheringham are making extensive alterations to the premises of the General Electric Light Company, of Queen Victoria-street, under Mr. Eustace Haynes, architect; and also have just secured the contract for rebuilding 220 and 222, Great Portland-street, Mr. W. Claude Ferrier being the architect.

The Halton Schools, near Aylesbury, and the Council Schools, Presteigne, are being warmed and ventilated by means of Shorland's patent Manchester grates, supplied by Messrs. E. H. Shorland & Brother, of Manchester.

The police-station at Crowborough, Sussex, has been considerably enlarged for the Sussex County Council. The building is of brick, with dressings of Ham Hill stone supplied by the Ham Hill and Doulting Stone Company, Ltd. The architect was Mr. F. J. Wood, County Surveyor, Lewes.

The International Time Recording Company have just received a repeat order for twelve automatic two-colour time recorders from Messrs. Marshall, Son, & Co., Ltd., Gainsborough, also further orders from the Municipal Council of Shanghai, the Imperial Japanese Navy, and the Woolwich Arsenal.

Sanitary and Engineering News.

ROSARIO PORT WORKS.

The British Consular Report on Rosario (Argentine) says that considerable progress has been made during the year in advancing the construction of the port works upon which, up to the time of writing, the company had spent 400,000*l.* The company has obtained the consent of the National Government for a further extension of quays and other improvements, at a cost of 600,000*l.* These include the erection of a second large grain elevator.

KIRKCALDY HARBOUR EXTENSION.

The new harbour and dock at Kirkcaldy have now been opened. The engineers for the extension were Messrs. Rendel & Robertson, C.E.,

Digitized by Google

London. The first part of the work, the extension of the east pier, was begun in January, 1905, the contractors for the whole work being Messrs. C. Brand & Son, Glasgow. The area of the wet dock is about 4 acres, with 22 ft. depth of water at ordinary spring tides, the depth of water over the sill being 20 ft. The new dock embraces the whole area of the old tidal basin and dock, and has a quayage space of 1,840 lin. ft. The entrance is 50 ft. wide. The new tidal basin is 5½ acres in extent, with the east pier running 600 ft. in a south-easterly direction beyond the old pier, and the south pier, which is built to protect the entrance to the dock from the prevailing winds of the district, running from west to east. The present dock is capable of taking a vessel at least 300 ft. long, with a beam of 46 ft. and a draught up to 18 ft. The total cost of the harbour will amount to 140,000*l.*

EDINBURGH DRAINAGE.

On the instruction of the Town Council of Edinburgh, Mr. William Allan Carter, M.Inst.C.E., Edinburgh, has prepared a report on the conflicting proposals with regard to the sewerage arrangements for the Haymarket and Lochrin districts. During times of sudden and heavy rainfall the Water of Leith Sewerage Commissioners' sewers are unable to convey away the whole of the storm water of these areas, and a considerable overflow passes into the channel of the Water of Leith, causing pollution of the stream and a nuisance in the neighbourhood. While the engineer for the Commissioners maintains that the proper way of dealing with the overflows is by means of a regulating tank, the engineer for the Corporation holds that by altering the point of discharge into the Commissioners' sewer he will be able to take advantage more fully of the carrying capacity of the sewer, and thus in a large measure avoid the overflows. He maintains that for a comparatively small outlay the trouble can be practically overcome, and the cost of the regulating and subsidiary works saved to the community. Mr. Carter reports that, generally speaking, he is of opinion that the Burgh Engineer has made out his case, and although his (Mr. Carter's) calculations in nearly all cases bring out smaller results than those stated by him, the differences are not material, and he thinks the Corporation will be following a sound policy in giving effect to his proposals and recommendations.

THE NORFOLK BRIDGE, NEW SHOREHAM.

Repairs and improvements have recently been made to the Norfolk Suspension Bridge at Shoreham. The bridge, which was built in 1832 from designs by Mr. Tierney Clark, has a total length of 600 ft., with a central span of 280 ft., and the entire structure has been thoroughly overhauled. The chief improvement, however, was the reconstruction of the roadway, under the supervision of the County Surveyor, Mr. H. W. Bowen. Owing to the extraordinary vibration, due to the passage over the bridge of the increasing traffic of heavy motor-cars and omnibuses, no satisfactory results could be maintained by the continued use of ordinary macadam for the road surface of the bridge. Permission was therefore granted to lay a short, experimental length of bituminous macadam, supplied by the Val de Travers Asphalte Company, Ltd. The result proved so satisfactory that the Committee decided to authorise the use of this material for the reconstruction of the whole roadway over the bridge. The alteration has caused a very considerable relief to the girders and suspension chains, as the weight of the new material is upwards of 100 tons less than that which formed the old roadway.

Miscellaneous.

GARDEN CITIES, KNEBWORTH AND EASTBOURNE.

Lord Lytton has adopted an enlarged scheme for the development of his property at Knebworth. The general project embraces the widening and planting of the Great North-road, which traverses the estate, and the planning of broad avenues, large gardens, and recreation spaces, with an average number of eight or nine houses per acre. The ground is being laid out by Mr. Thomas Adams, with Mr. Lutyens as consultant architect. At Hampden Park, Eastbourne, the number of houses will range from nine to twelve per acre.

KIRKDALE, N.R., YORK.

A fund is open for the reparation of the ancient parish church, formerly St. Gregory's Minster, situated in Welburn, in the valley of the Hodge beck. An inscribed stone over the south door records that Orm rebuilt the minster *temp.* Edward the Confessor. Two coffin-lids bearing runic characters are, it is believed, those of Ethelwald, son of Oswald, overlord of the Northumbrian Deira, and of Cedd, Bishop of East Anglia (London), who, as we read in Bede's "Ecclesiastical History," was buried on the right side of the altar in the church of St. Mary's Monastery he founded, 660, at Lestingua, now Lastingham, in Ryedale, North Riding.

RECOVERING DROWNED-OUT PUMPS.

The following report of the recovery of deep well pumps may prove interesting:—At the works of a firm of Yorkshire manufacturers there is a well 128 ft. deep by 6 ft. diameter, which supplies water to the works. The well is situated 10 or 12 yds. from the building. The pump, which is of the ordinary deep well type, is worked by a shaft hand-belt from inside the mill premises. The pump had broken down, but owing to stays being fitted to the bottom of the well the rods and valves were unable to be drawn from the top. Under these circumstances the aid of a Pulsometer pump was evoked, two No. 3 pumps being used. These were slung in the well, the lower pump delivering into the suction of the upper one. When starting the level of the water from the surface ground line was 87 ft., leaving 41 ft. of water in the well. The Pulsometer pump started on the job of pumping on Monday at six, and at 3.30 that afternoon the water had been pumped out to the bottom, although pumps had been stopped and lowered four times, and delivery and steam pipe connexions broken in order to put in more piping. The bucket and stays above referred to were removed, and the work completed by 9.30 that evening. It was essential that the pump should be kept steadily at work, as any failure of any description would have immediately flooded out the well, as the water was timed to rise at the rate of 3 ft. in a quarter of an hour.

PAINTERS' AND DECORATORS' WORK.

A course of "Lessons in Painters' and Decorators' Work" is to be given at the City Technical School at Oxford, by Mr. James Lawrance, Instructor at the Paddington Technical Institute. The lectures will be given on Thursday evenings, and the first one was announced for Thursday of the present week, which was an inaugural lecture on "House Decoration—Past, Present, and Future."

THE EXCAVATIONS AT MAUMBURY RINGS.

The second series of excavations at Maumbury Rings was practically concluded on Saturday last week (save for the filling in), after lasting three weeks instead of only two, as proposed at the outset. The reason for the extension of the time was to clear up the points raised by the cuttings at the S.S.W. end of the oval earthwork. The result of the work has been to substantiate the belief held locally that there was an entrance into the amphitheatre from this end, as well as the main entrance from the town side on the N.N.E., and that the bank at present filling this entrance was a comparatively modern work thrown up during the Civil War, when Dorchester, described by Clarendon as "the seat of great malignitie," was fortified on behalf of the Parliament against the Earl of Carnarvon. There are records of disbursements on "defensive works at Maumbury," and the place is described as "ye fortt called Maumbury." From the level of the Roman entrance path to the crest of the bank the measurement is 13·4 ft., of which the topmost 11 ft. is a Cromwellian upthrow. The popular tradition which appears to be supported is that at this end was the den for keeping the wild beasts used in the fights. An enclosure cut out of the virgin chalk has been completely cleared out. It measures 20 ft. wide and 10·4 ft. deep. The height of the chalk walls varies, being about 6·5 ft. high at the highest point, and sloping down somewhat towards the arena. On Friday another coin of Constantine the Great was found—almost on the very floor of the supposed den—making the third found during the week. The other two were a Hadrian—a second brass in fine preservation—and Constantine. In the N.E. corner of the den another prehistoric pit or shaft was struck, and followed down to a depth of 19 ft. from the turf level, at which depth a very fine pick of red-deer antler was found, the tines showing evidence of wear. The filling in will probably be begun forthwith.—*Times.*

TRURO CATHEDRAL.

Considerable progress has been made during the last eighteen months towards the completion of the Cathedral buildings. The chief work has been the finishing of the western towers with their spires. At the time of the building of the nave these towers were carried up to the highest of the nave parapets, some 70 ft. above the nave floor, and now the upper stages have been added, and the spires are rapidly approaching completion. In addition to the western towers an important work has been accomplished in the building of the Cathedral school, which, begun just a year ago, is practically ready for occupation. It is placed on the north side of the Cathedral, adjacent to what will eventually be the north walk of the cloister, that is on the site which was, according to the original scheme, to be occupied by some of the houses for the Cathedral clergy. These houses, however, will, at some future time, be more conveniently placed in another position, and, acting under instructions from the Dean and Chapter, their architect, Mr. F. L. Pearson, has prepared plans for dealing with the site. This scheme includes a cloister of three walks enclosing a garth of about 100 ft. each way; the Chapter-house, an octagonal building on the east side of the cloister; the Cathedral library to be placed over the east walk; the song school for the choristers over the eastern bays of the north walk; and the Cathedral school.

BUILDING IN VANCOUVER.

A Consular report from Vancouver says that the present season is one of great activity in all classes of business, especially in building. Large tracts of land are being sold for subdivision into building lots at high prices in all directions from the city, although much of the land is not cleared from stumpage, nor are the streets graded or the water and sewerage pipes laid. The city is, however, making a large expenditure for street improvements, such as grading and curbing footwalks, street paving with wood blocks laid on concrete, macadamising, and laying water and sewage pipes. Many framé buildings and a large number of business blocks, several of which are to be constructed with steel frames, are being erected.

KING'S COLLEGE, LONDON.

The syllabus of studies in the Architectural Department of King's College includes two courses of lectures on Architectural History, by Mr. R. Elsey Smith and Mr. Arthur Stratton, and courses on Building Construction, Quantities, and Constructional Drawing, by Mr. J. Bartlett. The College gives a Certificate and an Honours Certificate on conditions stated in the syllabus.

HOUSING AND TOWN PLANNING BILL.

In the House of Commons, on September 20, Mr. Clough asked the President of the Local Government Board whether he can give any assurance that, in the event of a local sanitary authority acting as a responsible authority under the Housing and Town Planning Bill for a town planning scheme within the area of a neighbouring authority, the latter will retain all its duties and powers as regards the provision of sewerage, water supply, lighting, and consequential works throughout its own area, and that none of such duties and powers will pass to the responsible authority by virtue of any regulations hereafter made under that Act by the Local Government Board.—Mr. Burns, in a written reply, said: It is not intended that the powers and duties of a neighbouring local authority should be transferred to the local authority responsible for the execution of a town planning scheme. These powers and duties would not be interfered with, except in so far as it might be necessary in order to secure the carrying out of the scheme. For example, it might be necessary to provide that they should be exercised in some particular way.

ST. PIRAN'S ORATORY, PERRANZABULOE.

Efforts have been made for some time past to raise funds in order to protect from the ravages of wind and weather and the encroachment of drifting sands the ruins of St. Piran's Oratory, at Perranzabuloe. It is proposed to build a protecting house of concrete around the ruins. About 100*l.* more is required to complete the scheme, which includes a certain amount of restoration work. If this protection is not forthcoming, says a correspondent of the *Standard*, it is probable that "the lost church," as it is locally known, will be again buried beneath the sands which covered it for so many centuries. It is generally believed to be the original church of St. Piran, to whom the Cornish miners give the credit of first showing them tin, and who was one of the most notable of many Cornish saints. The scheme is heartily supported by the Bishops of Truro and St. Germans.

THAMES EMBANKMENT EXTENSION.

An extension is being made to the Embankment on the Middlesex side of the river from Victoria Tower Gardens to Lambeth Bridge in connexion with the Westminster improvement scheme. This work, which is in the hands of Messrs. Price & Reeves, will necessitate the demolition of the existing power-stations at Millbank of the London Hydraulic Power Company and the Westminster Electric Supply Corporation, as well as Millbank, Prince's, and other wharves. The power-stations are being rebuilt on adjacent sites. The Victoria Tower

Digitized by Google

Gardens will be extended behind the length of new embankment, and Millbank-street will at the same time be both straightened and widened. Mr. E. H. Tabor is representing the London County Council as resident engineer, and the embankment construction on both the north and the south shores of the river is being carried out under the superintendence of Mr. Maurice Fitzmaurice, Engineer-in-Chief to the London County Council.

THE NEW LONDON COUNTY HALL.

Work has been completed on the construction of the cofferdam, in which the work of building the embankment will be carried out in the dry. In all some 600 piles, each 14 in. square and 50 ft. long, have to be driven into the London clay below the bed of the river to form the cofferdam, and the contractors, Messrs. Price & Reeves, have now completed this portion of the work. The embankment will be 570 ft. long, and is to be built of concrete with granite facing. This contract is to be completed by June next. The work of preparing the foundations for the building, a contract for which has been placed with Messrs. F. & H. F. Higgs, is already in progress.

NATIONAL ASSOCIATION OF MASTER HOUSE PAINTERS AND DECORATORS.

The second day of the annual convention recently held at Sheffield (a summary of the first day's proceedings has already appeared in our columns) was devoted chiefly to the reading of papers. Several papers were read by members under the title "The Need for Reviving the Apprenticeship System." Mr. John H. Cantrill, of Manchester, put in a plea for a more general adoption of apprenticing, holding it to be the only really effectual means of instructing a youth in the trade. No school instruction, he said, could take the place of instruction in a well-founded establishment. Commenting on the reluctance of parents to apprentice their children to a trade, Mr. Cantrill suggested as one reason the low rate of pay during the first two years of apprenticeship. He suggested the following rate of payment:—Apprenticed for six years—7s. per week for the first year, 8s. for the second year, 10s. for the third, 12s. 6d. for the fourth, 15s. for the fifth, and 20s. for the sixth. Apprenticed for five years—7s. for the first year, 9s. for the second, 12s. 6d. for the third, 15s. for the fourth, 20s. for the fifth. Mr. T. Peters, of Sheffield, followed with a paper on "Painters and the Public Health." The first aim in doing anything approaching good work, he said, was to make a clean ground for it. To make a good, clean job of a thing was as important in its way as to make a good artistic job; indeed, they could not have the second without the first. When walls and ceilings were covered with accumulations of past ages—ceiling thickly coated with mud (once distemper), cornices filled up, and walls covered with from six to twelve layers of dirty paper—he maintained that the houses were not in a fit condition to live in. Papers, concluded Mr. Peters, were without doubt a good and sanitary decoration providing ordinary care was bestowed on the correct preparation of the walls and the making of a really good paste. Paint, however, was, without a question, the best of all sanitary decorations, and, providing it was finished with good varnish, would meet all the requirements of the most critical sanitary agent. The following resolution was passed:—"That the question raised on Mr. Peters's paper be remitted to the executive of the Association with a view to circularising the public authorities of the country in regard to the necessity of safeguarding the public health so far as this can be secured by the proper regulation of painters' work." Mr. J. H. McDermid (Darlington) read a paper on "Direct Tendering and Subcontracting." What, he asked, was the position of the master painter as a sub-contractor? In almost every instance the identity of the individual was lost sight of. It had undoubtedly a tendency to reduce the quality of the work done, inasmuch as the sole aim of the sub-contractor necessarily became one of £ s. d. He suggested that architects should when granting certificates to the general contractor endorse upon them the amount allotted to each sub-contractor. In accordance with Mr. McDermid's suggestions a resolution was passed:—"That this meeting recognises the importance to the trade and the public of doing all in its power to promote direct tendering, and, where this cannot be secured, of taking such steps as shall at least secure the sub-contractor from the minimum risk of financial loss." Mr. George Kilpack (London) dealt with some industrial aspects of the painting trade—the industry, the employer, and the workmen. There were, he said, 168,000 men in the industry, and he claimed that they had more men of seventy-five still working than any other trade, so theirs was evidently not such an unhealthy business after all. The annual dinner in connexion with the convention was held in the Royal Victoria Hotel in the evening, the President occupying the chair. After the loyal toasts had been submitted, Mr. H. A. Campbell, President of the London Association, proposed "Sheffield: Its Municipality and Industry," to which Mr. Thorpe Haddock (of Messrs. Mappin & Webb) responded. Mr. James Orr (Glasgow) proposed "The National Association." They were taking, he said, a wise step in spending the money they did on the young people: they would get a good return for it in the days to come. He congratulated the Association on having captured London, and on establishing a section in the metropolis. The President, in the course of his reply, mentioned that the Association had spent over 2,000*l.* on assisting the apprentices. Mr. J. Standall also responded. Mr J. M. C. Vaughan proposed "The Antient Company of Paynter Stayners." The Master (Mr. T. Murray James, C.C.) and the Warden (Mr. Couper) responded. The "Kindred Associations" was submitted by Mr. Preston (Burnley), and was responded to by Messrs. Sonmans, L'de Groot, and Nooyen, of the Netherlands Association of Master House Painters. Mr. Sonmans, in responding, invited an English deputation to visit the Holland convention next year. Mr. Carfrae, representing the Scottish Association, and Mr. E. Gibson, representing the Irish Association of Master House Painters, also responded.

ORDNANCE SURVEY.

The Board of Agriculture have notified to all county and county borough councils their intention in future to plot in the maps upon the 1-in. to a mile and smaller scales every important change and correction in respect of new or demolished bridges, roads, canals, works of communication, and large buildings, engineering works, factories, etc. The alterations will supplement those brought about by the construction of new railways, and will be made, as in the case of the railways, *pari passu* with current events. They will not, as hitherto, be postponed until the expiration of the period of fifteen years, after which the maps to those scales are revised.

TWO DECEASED BUILDERS' ESTATES.

The estate of the late Mr. Charles Philip Roberts, of St. Mary's-road, Canonbury, N., who died on June 24, in his 63rd year, amounts to 43,632*l.* 9s. 2d. gross value, whereof the net personalty has been sworn at 40,989*l.* 5s. 8d. The estate of the late Mr. Thomas Barnsley, of Edgbaston, a Past-President of the Master Builders' Association, who died on June 19, aged 78, is valued at 79,972*l.* gross, with net personalty 37,895*l.*

ARMOURED CONCRETE WORK AT CARDIFF.

The Cardiff and District Architects' Association were invited, on Friday last, by Messrs. Teather & Wilson, architects, of Cardiff, to view the armoured concrete floors which are now being constructed on the Coignet system at the Newport-road Intermediate School for Boys. The members present were taken over the work, and an explanation was given to them of the methods employed for the construction of floor slabs, beams, pillars, and balconies. The contractors for the armoured concrete work are Messrs. Watt Brothers, of Cardiff.

BUILDINGS, ETC., AT BILBAO.

Mr. A. Maclean, the British Consul at Bilbao, reports that there were, at the time of writing, some houses arranged for flats being built inside the town, and a number of villas outside, and, speaking generally, the building trades were fairly active, but the relative activity of the building trade did not signify any considerable opening for foreign manufacturers, as most of the materials are produced locally, and the fittings which are imported are of the least expensive description. British manufacturers, he goes on to say, are keenly alive to the very restricted potentialities of these trades, and keep themselves well informed through the agency of local correspondents and travellers, several of whom he had the pleasure of receiving at the Consulate. He believed that very few business openings escape the vigilance of these gentlemen, and if potentialities they observe do not develop into business it is generally because on close examination they do not prove to be sufficiently attractive. A local firm were about to erect a factory to employ eighty to one hundred men, capable of producing 300 to 400 pedestal water-closets in a week. Some further port works are to be put in hand, including the building of a ferro-concrete wharf.

BUILDING BOOM IN CASABLANCA (MOROCCO).

There was a great boom in building at Casablanca when Mr. Madden, the British Consul, wrote his annual report, which has just been issued by the Foreign Office. The Consul says that dwelling-houses were rapidly constructed outside the town walls, and even at high rents easily found tenants. Some bungalows from the United Kingdom had been sent out and erected. The town itself continues to expand, and during the past twelve months a new quarter has sprung up consisting of great stores and offices of the principal merchant houses of all nationalities. Vast numbers of small native shops have been constructed in connexion with these stores. An enormous quantity of building material, such as bricks, tiles, iron rafters, wood, iron roofing, and even lime was being imported from abroad. It was satisfactory to observe, says Mr. Madden, that while the commerce of all nations improved during the year, the trade of the United Kingdom well maintained its position, with an aggregate value of 1,611,169*l.*, or rather more than 48 per cent. of the whole.

THE INSTITUTE OF METALS.

The Institute of Metals will hold their Autumn meeting on October 14 and 15, at the Municipal School of Technology, Sackville-street, Manchester. Various papers on the composition of metals and alloys will be read and discussed. The programme will include visits to several important works and factories—the Baxendale Company's lead mills, the Westinghouse Electric Company, etc. Application for further particulars should be made to the Secretary, Mr. G. Shaw Scott, Caxton House, Westminster, S.W.

CEMENT INDUSTRY IN GERMANY.

According to the Report of the British Consul-General at Hamburg the expectations of the German cement industry at the commencement of 1908 were not fully realised. In consequence of the financial crisis there was a serious falling-off in the building trade, and particularly in the building of cheap houses, and the owners of factories which were not fully occupied showed little inclination to embark on alterations or extensions. Therefore large stocks of cement accumulated during the summer at the factories. The latter sought relief in the export market, with the result that the export prices experienced a rapid fall of nearly 25 per cent. Owing to the demand brought about by these low prices several of the syndicates disposed of a considerable portion of their stocks. The financial results realised during the year by the German cement works were nevertheless regarded upon the whole as good, in spite of the unfavourable state of trade, because the prices, regulated in the interior of Germany by means of agreements between the syndicates, ensured a good profit. These agreements have been renewed for 1909, and steps have been taken to raise the export prices; in fact, a minimum price has been fixed. It is said also that efforts have been made with some success to secure the adhesion of the British and Belgian cement industries, and it is anticipated that it will be possible to form international agreements for the regulation of export prices.

Law Reports.

HAWKINS v. THE KING.

MR. VEREY, the Official Referee, recently made known to the parties his findings upon the issues raised in the Petition of Right in the above case.

Messrs. Thos. J. Hawkins & Co., who are large contractors, were employed by the War Office to execute certain works at Longmoor and Bordon, such as artillery barracks, stabling, etc. The petition contained a number of claims against the Crown under the contracts, but the present findings were limited to certain paragraphs in the petition dealing with a promise alleged to have been made to the petitioners by the Commanding Royal Engineer of the district that a railway would be constructed within six months between Bentley and Bordon Camp. This railway had not been built, and in consequence the petitioners claimed to have suffered damage through the extra cost of freight of their materials. In the answer to the petition the Crown denied the alleged promise of the railway, or the authority of the Commanding Engineer to make such a promise, and a claim was made, based on the certificates of various District Surveyors, for damages caused to the roads through the extraordinary traffic used in the carriage of the bricks and materials for the work.

The issues before the learned Official Referee were:—(1) Whether the alleged warranty had been given; (2) whether the claim of the Crown for extraordinary traffic was sustainable; all questions as to the amount of damage were to stand over.

LAW REPORTS.—*Continued on page 349.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii. xix.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

SEPTEMBER 28.—**Lyminge.**—SEWAGE DISPOSAL.—The Elham R.D.C. invite schemes and estimates for the disposal of the sewage of Lyminge Parish. Mr. R. Lonergan, Clerk, 11, Cheriton-place, Folkestone.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l.*, 50*l.*, and 25*l.* are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l.* 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

* OCTOBER 30. — **Workington.** — SCHOOL. — The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. See advertisement in this issue for further particulars.

NOVEMBER 1. — **Kendal.** — TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1. — **Preston.** — GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l.*, 30*l.*, and 20*l.* Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

SEPTEMBER 25.—**Liverpool.**—PLASTERING, PLUMBING, ETC.—Tenders are invited for plumbing and plastering (labour and material), slaters (labour only), for the Liverpool Skating Rink. Names to Mr. G. Parker, Manager, 63, Renshaw-street, Liverpool.

* SEPTEMBER 25.—**Uttoxeter.**—REMODELLING CATTLE MARKET.—The Uttoxeter U.D.C. invite tenders for the remodelling of the Smithfield Cattle Market. See advertisement in this issue for further particulars.

SEPTEMBER 27. — **Bradford.**—INFANTS' SCHOOL.—The Bradford Corporation Education Committee invite tenders for works of all trades required in the erection of new infants' department, Undercliffe School. Drawings may be seen, and bills of quantities, etc., obtained, on application to the City Architect, Whitaker-buildings, Brewery-street, Bradford.

SEPTEMBER 27.—**Donacloney, Co. Down.**—ALTERATIONS AND ADDITIONS.—Tenders are required for making alterations and additions to residence at Donacloney, Co. Down. Quantities may be obtained from Mr. S. C. Hunter, surveyor, 2, Wellington-place, Belfast, and the plans may be seen at the offices of Messrs. Barrett, Robinson, & Barcroft, architects, 1, Lombard-street, Belfast.

SEPTEMBER 27.—**Middlesbrough.**—HOSPITAL ADDITIONS.—Additions and alterations to North Ormesby Hospital, Middlesbrough. Names and addresses to the architects, Messrs. J. M. Bottomley, Son, & Wellburn, 28 and 30, Albert-road, Middlesbrough, and 13, Bond-street, Leeds.

SEPTEMBER 27. — **Plymstock.** — COUNCIL SCHOOL.—Devon County Education Committee invite tenders for a new Council School for 260 children and a cookery and manual training centre at Plymstock. Names to the County Architect (Education), 1, Richmond-road, Exeter, enclosing a crossed cheque for 1*l.* 1s., drawn in favour of the County Treasurer.

SEPTEMBER 28.—**Aldershot.**—ALTERATIONS.—Tenders are invited for alterations and additions to the "Angel" Hotel, Aldershot, and the "Plough and Horses" Public-house, Cove, for the Friary, Holroyd, & Healy's Breweries, Ltd. Plans, etc., can be seen, and further particulars obtained, upon application to Messrs. Friend & Lloyd, architects.

SEPTEMBER 28.—**Porth.**—ALTERATIONS TO CHAPEL.—Tenders are invited for the alterations and repairs to the Porth Welsh Congregational Chapel, Porth. Plans, etc., may be seen at the residence of Mr. W. D. Thomas, architect, Porth.

SEPTEMBER 29.—**Barrow-in-Furness.**—ADDITION.—Tenders are invited for the addition to a classroom at St. George's School, Barrow-in-Furness. Plans and specifications may be seen, and bills of quantities obtained, from the architect, Dean J. Brundrit, A.R.I.B.A., 127, Ramsden-square, Barrow-in-Furness.

SEPTEMBER 29. — **Crumpsall.** — BRANCH LIBRARY. — Manchester Corporation Libraries Committee invite tenders for the erection of a new branch library at Crumpsall. Drawings may be seen, and specification, etc., obtained, at the office of the City Architect, Town Hall, upon payment of 2*l.* 2s. Cheques or postal orders to be made payable to the order of "The Manchester Corporation."

SEPTEMBER 29.—**Merthyr Tydfil.**—Tenders are invited for the erection of twenty or more semi-detached houses of design (A), and sixteen or more semi-detached houses of design (B), with the construction of roads, footways, and sewers, for the Court Building Club. Plans and specifications can be seen at the office of the architect, Mr. Rees Morris, architect, Idrisville, Queen's-road, Merthyr Tydfil.

SEPTEMBER 29. — **Pellon.**—WORKSHOP EXTENSION. — Tenders are invited for the mason's, joiner's, plumber's, slaterer's, and concretor's work required in extending workshop at Pellon. Plans and specification may be seen, and bills of quantity obtained, on application to the architects, Messrs. Longbottom & Culpan, George-street, Halifax.

SEPTEMBER 30. — **Carreghofa.** — COUNCIL SCHOOL.—Montgomeryshire Education Authority invite tenders for the erection of Carreghofa Council School. Plans may be seen at the County Education Offices, Newtown, during office hours, on written application to Mr. Llewelyn Phillips, Clerk to the Education Authority, County Education Offices, Newtown, and also on payment of a deposit fee of 1*l.* 1s.

SEPTEMBER 30.—**Hastings.**—ALTERATIONS, ETC.—The Hastings Guardians invite tenders for certain alterations and repairs at the Union Offices, 11, Wellington-square, Hastings. A plan and specification of the work may be seen at the offices of the architects, Messrs. Jeffery & Son, 5, Havelock-road, Hastings.

SEPTEMBER 30. — **Middlesbrough.** — BUSINESS PREMISES.—The erection of new business premises at the corner of Grange-road and Linthorpe-road, Middlesbrough. Names to Messrs. Moore & Archibald, architects, 27, Albert-road, Middlesbrough.

SEPTEMBER 30.—**Salford.** — ALTERATIONS AND ADDITIONS.—Tenders are invited by the Guardians of the Salford Union for alterations and additions to The Elms, 92, Eccles New-road, Salford. Particulars and quantities may be obtained on application to Mr. H. Lord, F.R.I.B.A., 42, Deansgate, Manchester.

SEPTEMBER 30-OCTOBER 14. — **Scartho.**—ELEMENTARY SCHOOL.—Lindsey C.C. Education Committee invite tenders for the erection of an Elementary School at Scartho, Lincoln. Bills of quantities and forms of tender may be had on application to Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln, on or before September 30, and on payment to them of 2*l.* 2s.

OCTOBER 1.—**Porth.**—EXTENSIONS AND ALTERATIONS.—Tenders are invited for extensions and alterations to the Cymmer Colliery Workmen's Library, Porth, for the Committee. Plans and specifications may be seen, and bills of quantities can be obtained, at the office of Mr. Edwin Jones, F.I.A.S., architect and surveyor, Porth, Glam., on payment of 1*l.* 1s.

OCTOBER 2. — **Pontypool.** — SECONDARY SCHOOL IMPROVEMENT.—Monmouthshire Education Committee invite tenders for extensions and alterations to the Pontypool County Girls' Secondary School. Plans and specification may be seen, and bills of quantities obtained, at the office of Mr. Benjamin Lawrence, architect, Mount View, Caerau, Newport, on deposit of 2*l.* 2s.

OCTOBER 4.—**Bury St. Edmund's.**—TOWN HALL ALTERATIONS.—The Corporation invite tenders for alterations to the Town Hall. Plans and specification may be seen during office hours at the offices of Mr. Sydney Naish, 30, Abbeygate-street, Bury St. Edmund's, architect, from whom quantities, etc., may be obtained on payment of 2*l.* 2s.

OCTOBER 4.—**Cobham.**—CEMETERY WORKS.—Cobham P.C. invite tenders for draining and laying out proposed extension to, and erection of mortuary at, Cobham Cemetery, Cobham, Surrey. Specification, etc., may be obtained on application to the surveyors, Messrs. Mills & Summerfield, High-street, Cobham, on depositing a cheque for 2*l.* 2s.

OCTOBER 4.—**Horncastle.**—WORKHOUSE ALTERATIONS.—Horncastle Guardians invite tenders for alterations at the Workhouse at Horncastle, in accordance with plans and specifications, which can be seen at the Union Offices, Church-lane, during office hours. Mr. J. E. Chatterton, Clerk to the Guardians.

OCTOBER 4.—**Tyntyla.**—COTTAGES.—Tenders are invited for the erection of fourteen or more cottages at Tyntyla, near Ystrad, Rhondda, for the Pantyreisteddfa Building Club. Plans and specification can be seen at the offices of Messrs. A. O. Evans, Williams, & Evans, architects, Post-office-chambers, Pontypridd.

* OCTOBER 6.—**Camberwell, S.E.**—ALTERATIONS.—The Commissioners of H.M. Works, etc., invite tenders for new sanitary offices and redrainage of Camberwell Sorting Office. See advertisement in this issue for further particulars.

OCTOBER 6. — **Ushaw Moor.** — COTTAGES.—Tenders are invited for the erection of twenty cottages at Ushaw Moor, for the Aged Miners' Homes Committee. Plans, etc., can be seen on application to Mr. C. Johnston, architect and surveyor, Victoria-street, Bishop Auckland.

OCTOBER 8.—**West Riding.**—SCHOOL IMPROVEMENTS.—The West Riding Education Committee invite whole or separate tenders for alterations and additions to High and Low Bishopsides, Glasshouses Provided School. Plans may be seen, and specifications with quantities obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

* OCTOBER 9.—**Crewe.**—ADDITIONS TO SCHOOLS.—The Crewe Education Committee invite tenders for additions and alterations to the Bedford-street Schools. See advertisement in this issue for further particulars.

OCTOBER 9. — **Newton-in-Makerfield.**—TECHNICAL SCHOOL.—The U.D.C. of Newton-in-Makerfield invite tenders for the erection of a technical school. Plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Riddlesdale-place, Preston, by payment of a deposit of 3*l.*

OCTOBER 26. — **Warrington.** — FERRO-CONCRETE BRIDGE.—The Bridges Committee invite designs, specifications, and tenders for a single span, ferro-concrete bridge across the River Mersey, in Warrington, and training walls. Conditions and particulars, with plans of site and existing bridge, may be obtained from the office of the Borough Engineer and Surveyor, Town Hall, Warrington, on payment of 1*l.* 1s., which is to be made payable to the Borough Treasurer, Warrington.

NO DATE. — **Cork.** — TECHNICAL SCHOOL.—The Cork County Borough Technical Instruction Committee invite tenders for the erection of a technical school. Plans may be inspected, and all particulars obtained, on application to the architect, Mr. Arthur Hill, B.E., F.R.I.B.A., 22, George's-street, Cork.

ENGINEERING, IRON, AND STEEL.

SEPTEMBER 27.—**Salford.**—HEATING.—The Tramway Committee invite tenders for the heating by hot water of certain rooms at the Central Car Depôt, Frederick-road, Pendleton. For further particulars apply to the General Manager, 32, Blackfriars-street, Salford.

SEPTEMBER 29. — **Manchester.** — CAST-IRON TANK.—The Manchester Corporation invite tenders for the supply and erection at the Harpurhey Baths of one cast-iron tank, about 65 ft. by 24 ft. by 9 ft. deep, in sections. Drawings may be seen, and further particulars obtained, at the office of the City Architect, Town Hall, upon payment of 1*l.* 1s. All cheques or postal orders to be made payable to the order of "The Corporation of Manchester."

SEPTEMBER 29.—**Runcorn.**—CAST-IRON WATER MAINS.—The U.D.C. of Runcorn invite tenders for the supply of about 26 tons of 6-in. spigot and socket cast-iron water mains, coated with Dr. Angus Smith's solution and tested to 600 vertical feet. Mr. E. Marshall, Secretary, Town Hall, Runcorn.

OCTOBER 1.—**Croydon.**—CAST-IRON PIPES AND SPECIALS.—Croydon B.C. invite tenders for the supply of 21-in. cast-iron pipes and specials, in connexion with the Waddon Pumping Station. Specification, etc., may be obtained on application at the office of the Borough Engineer, Town Hall, Croydon, on deposit of 1*l.* 1s.

Digitized by Google

ENGINEERING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 1. — **Pentre Rhondda.** — GAS WORKS SUPPLIES, ETC.—Rhondda U.D.C. invite tenders for (1) the supply of lead and comp. pipe and block tin, and (2) for a horizontal steam engine and exhauster (contract No. 48). Plans and specifications for contract No. 48 may be seen, and forms of tender obtained, upon application to Mr. Octavius Thomas, the Engineer and Manager, Gas and Water Offices, Pentre Rhondda, upon depositing the sum of 1*l.* 1s.

OCTOBER 4.—**Glasgow.**—ELECTRIC MAINS, ETC.—The Corporation of Glasgow invite tenders for transmission of electrical power to motors, etc., and for lighting at the Shieldhall Outfall Works. Specifications and forms of tender may be had on application at the Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow, by depositing cheque for 2*l.* 2s., to be crossed and made payable to Mr. Jas. D. Borthwick, Treasurer. Plans and drawings may be seen, and further particulars obtained, at the office of Mr. William D. Hamilton, 59, Bath-street.

OCTOBER 4.—**Glasgow.**—LIFTS.—Glasgow Corporation invite offers for supplying and fitting up the following lifts required for the new Mitchell Library at North-street, viz.:—(1) One electric passenger lift; (2) three electric book lifts; and (3) three hand book lifts. Specifications and forms of tender may be had on application at the office of Mr. W. B. Whitie, 219, St. Vincent-street.

OCTOBER 4.—**Glasgow.**—RENEWAL OF UNDERBRIDGES, ETC.—The Directors of the Caledonian Railway Company invite tenders for the steelwork to be executed in the renewal of one underbridge on the Uddingston and Holytown Line, at 3 miles; one underbridge on the Cleland and Midcalder Line, at 4 miles 50 chains; and one overbridge on the Motherwell Deviation Line, at 89 miles 61 chains. Drawings may be seen at the offices of the Company's District Engineer, 3, Germiston-street, Glasgow, where copies of the specification and schedule may be obtained on payment of 2*l.* 2s.

OCTOBER 4.—**Glasgow.**—RENEWAL OF UNDERBRIDGES. —The Directors of the Caledonian Railway Company invite tenders for the work to be executed in the renewal of the superstructures of seven underbridges on the main line near Stonehaven, the Dundee and Perth branch, the Dundee and Forfar branch, and the Arbroath and Guthrie branch. Drawings may be seen at the office of the Company's District Engineer, General Station, Perth, where copies of the specification and schedule may be obtained on payment of 2*l.* 2s.

OCTOBER 7. — **Abergavenny.** — BOILERS. — Abergavenny Guardians invite tenders for the supplying and fixing of two of Messrs. Barford & Penkins's slow-combustion steam boilers; also the supplying and fixing of a Royle's calorifier; also the alteration and extension of the present boiler-house. The plan of the proposed alterations of the present boiler-house may be seen at the Workhouse. Mr. W. H. P. Scanlon, Clerk to the Guardians, Union Offices, Town Hall, Abergavenny.

OCTOBER 7. — **Swansea.** — BOILERS.—The Property Committee invite tenders for the provision of two low-pressure hot-water boilers at the Free Library Buildings, Alexandra-road, Swansea. Specifications and conditions may be obtained at the office of Mr. Marcus Hoskins, F.S.I., Borough Estate Agent, Coleridge House, Swansea.

OCTOBER 8.—**Carlisle.**—IRON STAIRCASE.—The Guardians invite tenders for supplying and erecting an external iron staircase at Harraby Hill House, Carlisle. Also for the breaking out of doorways, etc., in connexion with the same. Plans, etc., can be seen, and all information obtained, at the offices of Mr. George Armstrong, architect, 24, Bank-street, Carlisle.

MISCELLANEOUS.

SEPTEMBER 27.—**Horley.**—REMOVAL OF ASHES, ETC.—Reigate R.D.C. invite tenders for the removal of ashes and house refuse in the Parish of Horley. Particulars to be obtained at the office of Mr. Nimrod Walter, Surveyor to the Council, South Park, Reigate, any morning before eleven o'clock.

SEPTEMBER 27.—**Merstham.**—REMOVAL OF REFUSE.—Reigate R.D.C. invite tenders for the removal of ashes and house refuse in the Parish of Merstham. Further particulars can be obtained at the office of Mr. Nimrod Walter, Surveyor to the Council, South Park, Reigate, any morning before eleven o'clock.

SEPTEMBER 27.—**Romford.**—FURNITURE.—The Romford Guardians invite tenders for the supply of furniture to the Workhouse, in accordance with estimates and forms of tender, which can be obtained from the Master of the Workhouse, or from Mr. William Smith, Clerk, 13, North-street, Romford.

SEPTEMBER 27.—**Steyning.**—STEAM ROAD ROLLERS.—Steyning West R.D.C. invite tenders for the hire of two steam road rollers and scarifier. Specifications and forms of tender can be obtained of Mr. Frederick Slaughter, A.M.Inst.C.E., Surveyor to the Council, High-street, Steyning.

SEPTEMBER 28.—**Northfleet.**—SEWAGE VAN.—Northfleet U.D.C. Sanitary Committee invite tenders for the supply of a new sewage van. Particulars and specifications may be seen at the Sanitary Inspector's office, The Hill, Northfleet.

SEPTEMBER 29.—**Woolwich.**—DEAL AND BATTEN ENDS. —The Guardians invite quotations for the supply of about 40 fathoms of good yellow deal and batten ends for chopping into firewood. Quotations to Mr. Tom Cutter, Clerk to the Guardians, Union Offices, Woolwich.

SEPTEMBER 30. — **Woking.** — TEAM LABOUR. — The U.D.C. of Woking invite tenders for the haulage of road materials, etc.; also for road watering, scavenging, etc. Forms of tender and further particulars may be obtained of Mr. G. J. Wooldridge, Surveyor, Council Offices, Woking.

OCTOBER 2. — **Dorchester.**—MANUAL LABOUR.—Dorchester R.D.C. invite tenders for manual labour in the Parishes of Burleston, Tincleton, and Tolpuddle. Tender forms may be obtained of Mr. W. Wilton Reed, Clerk to the Council, 24, High West-street, Dorchester.

OCTOBER 2.—**Windsor.**—DUST VANS.—The Corporation of New Windsor invite tenders for the supply of four new dust vans. Pattern van and specification may be seen upon application, and form of tender obtained, at the office of the Borough Surveyor, Mr. E. A. Stickland, between 1 and 2 daily.

* OCTOBER 12.—**London.**—WOOD, FURNITURE, ETC.—The London C.C. invite tenders for supply of cupboards, notice-boards, easels, meat safes, plate racks, and platforms. See advertisement in this issue for further particulars.

OCTOBER 14.—**London.**—MILD STEEL GALVANISED SHEETS, ETC.—The Egyptian War Department invite tenders for very mild steel galvanised sheets and brass and iron buckles and rings. Particulars from Lieut.-Col. Western, Queen Anne's-chambers, Westminster.

PAINTING, etc.

SEPTEMBER 27.—**East Preston.**—COLOURING.—East Preston Guardians invite tenders for colouring walls and other works at the Workhouse Infirmary, East Preston, near Worthing. Specifications of the work can be seen at the Workhouse. Mr. Arthur Shelley, Clerk to the Guardians, Littlehampton.

SEPTEMBER 27.—**Lancaster.**—PAINTING.—The Visiting Committee of the County Lunatic Asylum, Lancaster, invite tenders for the exterior painting of certain portions of the Asylum. Forms of tender and full particulars may be obtained on application to Mr. J. R. Wilson, Clerk and Steward, Clerk's Office.

SEPTEMBER 27.—**Reading.**—PAINTING.—The Corporation of Reading invite tenders for the works of cleaning and painting at Park Hospital. Specification, etc., may be seen, and form of tender obtained, on application at the office of Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

SEPTEMBER 27. — **Redhill.** — PAINTING. — Reigate Board of Guardians invite tenders for painting the exterior of certain buildings at the Workhouse, Redhill, in accordance with a specification which may be inspected upon application to the Master of the Workhouse.

SEPTEMBER 28.—**Leeds.**—PAINTING.—Tenders are invited for painting, etc., to be done in various parts of the Union Infirmary, and the Nurses' Home, Beckett-street, Leeds. Specifications, etc., may be obtained on application to Mr. James H. Ford, Clerk to the Guardians, Poor Law Offices, South Parade, Leeds.

SEPTEMBER 29.—**Hull.**—PAINTING.—The Corporation invite tenders for certain painting required at the parks. Forms of tender and other particulars may be obtained at the office of Mr. A. E. White, M.Inst.C.E., City Engineer, Town Hall, Hull.

SEPTEMBER 30.—**Macclesfield.**—PAINTING, ETC.—The Cemetery Committee invite tenders for the outside painting required at "West Bank," Upton. A specification may be inspected at the Borough Surveyor's office, Town Hall, Macclesfield.

OCTOBER 5.—**Nantymoel.**—PAINTING, REPAIRS, ETC. —Tenders are invited by the Renovation Committee of Horeb English Baptist Chapel, Nantymoel, for painting, repairs, and ventilating windows. Specifications may be seen with Rev. H. R. Byatt, 8, Brookland-terrace.

ROADS, SANITARY, AND WATER WORKS.

SEPTEMBER 28.—**Hazel Grove.**—SEWERAGE, PAVING, FLAGGING, ETC.—Hazel Grove and Bramhall U.D.C. invite tenders (1) for the execution of works of paving, flagging, etc., in Chapel-street; (2) for the execution of works of sewerage, paving, etc., in Grundey-street. Plans may be seen, and forms of tender, etc., obtained, on application to the Surveyor, Council Offices, Hazel-grove, on deposit of 1*l.* 1s.

SEPTEMBER 28. — **Leeds.** — PAVING, ETC.—The Highways Committee invite tenders for paving and flagging St. Thomas-avenue, Waterhouse-terrace, Henley-crescent, Noster-street, Noster-place, back Devonshire-lane, and back Tower-grove; also for the making of a macadam carriageway and asphalt footpaths in North Park-grove (part). Drawings may be seen at the City Engineer's office, Municipal Buildings. Bills of quantities, etc., may be obtained on application at the Highways Office, 155, Kirkstall-road, Leeds.

* SEPTEMBER 28. — **Neasden.** — ROAD-MAKING.—The Willesden D.C. invite tenders for certain road-making and paving works in Prout-grove, Neasden. See advertisement in this issue for further particulars.

SEPTEMBER 28. — **Woodford.** — PRIVATE STREET IMPROVEMENTS.—Woodford U.D.C. invite tenders for kerbing, channelling, and making-up a portion of Monkhams-drive, Woodford Green. Plans and specifications may be seen, and quantities, etc., obtained, on application to Mr. William Farrington, Surveyor to the Council, Council Offices, Woodford Green, upon deposit of 1*l.* 1s.

SEPTEMBER 29. — **Birmingham.** — SURFACE-WATER SEWERS.—The Public Works Committee invite tenders for the construction of surface-water sewers in Heather-road, St. Benedict's-road, and across park and private property between Bankes-road and Somerville-road. Plans and specification may be seen, and quantities and forms of tender obtained, at the office of Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, the Council House, Birmingham, on deposit of the sum of 2*l.*

SEPTEMBER 29.—**Rotherham.**—SEWAGE WORKS EXTENSION.—The R.D.C. of Rotherham invite tenders for the extension of Dalton and Thrybergh Sewage Works. Plans may be seen, and quantities, etc., obtained from Mr. B. Hey, Surveyor of the Council, Imperial-buildings, Rotherham.

SEPTEMBER 30.—**Silsden.**—SEWAGE WORKS EXTENSION. —Silsden U.D.C. invite tenders for the construction of additional tanks, channels, and other works, for the improvement and extension of their existing sewage-disposal works. Drawings may be inspected, and specification, etc., and form of tender obtained, at offices of Messrs. Chas. Gott & Sons, Engineers to the Council, 18, The Exchange, Bradford, on deposit of the sum of 1*l.* 1s.

SEPTEMBER 30.—**Tynemouth.**—CARRIAGEWAYS, ETC.— The Tynemouth R.D.C. invite tenders for the construction of carriageways, footpaths, etc., in the following streets at West Allotment, Long Benton, viz.:—Griffith, Backworth, Holywell, Ryton, Earsdon, and Co-operative terraces; also portions of Crossley-avenue and Cook-street, Forest Hall. Plans and specifications may be seen at the office of Mr. A. S. Dinning, surveyor, 21, Ellison-place, Newcastle.

OCTOBER 2. — **Allonby.** — SEWERAGE SCHEME. — The R.D.C. of Wigton invite tenders for the construction of a main sewer in the village of Allonby, with outfall into the sea. Specifications and quantities may be obtained from Mr. J. F. W. Ritson, Clerk to the Council, Wigton, and plans can be seen at the office of the Engineer, Kildare, Wigton, on a deposit of 2*l.* (cheque only).

OCTOBER 2. — **Slough.** — SHEDS AND BUILDINGS — Slough U.D.C. invite tenders for the erection of sheds and buildings at Dorney. Particulars may be seen, and forms of tender obtained, upon the deposit of 1*l.* 1s., at the Town Surveyor's office, William-street, Slough.

OCTOBER 4. — **Penny Stratford.**—WATERWORKS.— Penny Stratford U.D.C. invite tenders for the construction of a service reservoir, pumping station, and the supplying of pipes for, and laying cast-iron mains and other works. Drawings may be seen, and quantities, etc., obtained from the engineer, Mr. John Chadwick, Bletchley, on payment of 3*l.* 3s.

OCTOBER 4. — **Horncastle.** — EXTENSION OF WATERWORKS.—The Horncastle Water Company invite tenders for the construction of a 40,000-gallon brick reservoir and filters, and laying cast-iron and stoneware pipes at the Cawkwell Waterworks. Plans and specification may be seen at the offices of Messrs. Clitherow & Sons, Secretaries to the Water Company, Lindsey-court, Horncastle, and also at the offices of the engineers, Messrs. G. & F. W. Hodson, Bank-chambers, Loughborough, from whom quantities may be obtained on deposit of cheque for 2*l.* 2s.

OCTOBER 4.—**Windsor.**—PRIVATE STREET WORKS, AMENDED NOTICE.—The Windsor R.D.C. invite separate tenders for making-up Rays-avenue, Jutland-lane, Forest-lane, St. Leonard's-place, Albert-place, and Rose's-lane, Parish of Clewer. Plans may be seen at any time during office hours at the office of Mr. J. E. Gale, Clerk, 3, Sheet-street, Windsor.

OCTOBER 5. — **Belfast.**—FERRO-CONCRETE SEDIMENTATION TANKS.—The Improvement Committee invite tenders for the construction of ferro-concrete sedimentation tanks of about 3,000,000 gallons capacity, with channels, etc. Drawings, etc., may be obtained at the office of the City Surveyor on payment of 1*l.* 1s.

OCTOBER 5. — **Billinge.**—RESERVOIR.—The Billinge U.D.C. invite tenders for the construction of a service reservoir on Billinge Hill. Plans and specifications can be seen at the offices of Messrs. Heaton, Ralph, & Heaton, architects and surveyors, King-street, Wigan, and quantities obtained from them on payment of 2*l.* 2s.

OCTOBER 5. — **St. Albans.** — SEWER. — St. Albans R.D.C. invite tenders for providing and laying new sewer in the Boundary and Warwick roads, Sandridge Rural, St. Albans. Plan, etc., may be seen, and bills of quantities obtained, at the office of the Surveyor, Mr. Henry F. Mence, 11, St. Peter's-street, St. Albans, on payment of 1*l.* 1s.

OCTOBER 5.—**St. Albans.**—SEWER EXTENSION.—St. Albans R.D.C. invite tenders for providing and laying new sewer extension in the Hatfield-road, Sandridge, near St. Albans. Plan, etc., may be seen, and form of tender obtained, at the office of the Surveyor, Mr. Henry F. Mence, 11, St. Peter's-street, St. Albans, on payment of 1*l.* 1s.

OCTOBER 6. — **Dundrum.** — SEWAGE WORKS. — The Rathdown No. 1 R.D.C. invite tenders for the construction of sewage-purification works for the Dundrum District, in accordance with plans and specification furnished by Mr. P. H. McCarthy, M.A., B.E., M.Inst.C.E.I., which can be seen with Mr Patrick Cunniam, Clerk of the Council, Clerk's office, Loughlinstown, between the hours of 11 a.m. and 3 p.m. A copy of the specification, quantities, and form of tender will be supplied on depositing 3*l.*

OCTOBER 6.—**Hove.**—PAVING.—The Corporation invite tenders for executing paving and other works in Aymer-road. Further particulars may be obtained, and plan and specification seen, at the office of the Borough Surveyor, Mr. H. H. Scott, Town Hall, Hove.

OCTOBER 6. — **Twickenham.** — PRIVATE STREET WORKS.—Twickenham U.D.C. invite tenders for the works in connexion with forming, etc. (1) Bonser-road; (2) Holmes-road. Plans and specifications may be seen, and quantities, etc., obtained, on application at the office of Mr. Fred. W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham, and the payment of a deposit of 1*l.* 1s. to Mr. H. Jason Saunders, Clerk to the Council, Town Hall, Twickenham.

OCTOBER 7. — **Heston and Isleworth.** — PRIVATE STREET WORKS.—The U.D.C. of Heston and Isleworth invite tenders for the making-up of Albert-road, Hartham-road, Highfield-road, Newton-road, Percy-road, St. Mary's-crescent. Plans, etc., may be seen, and bills of quantities and form of tender obtained from Mr. J. G. Carey, Engineer and Surveyor to the Council, Council House, Hounslow, on payment of the sum of 1*l.* 1s.

OCTOBER 7. — **Southend-on-Sea.** — ROADWAY AND FENCING.—The Corporation invite tenders for the construction of a roadway and the erection of unclimbable iron fencing (contract No. 6). Conditions, etc., and drawings may be obtained on application to Mr. Ernest J. Elford, M.Inst.M.E., Municipal Buildings, Southend-on-Sea, on payment of a deposit of 1*l.* 1s.

OCTOBER 8.—**Yardley.**—CONCRETE SLAB PAVING.—The Highways and Bridges Committee of the Worcestershire C.C. invite tenders for supplying and laying concrete slab paving on the Stratford and Warwick

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

main roads, in the Parish of Yardley. Specification and further particulars may be obtained on application to Mr. J. H. Garrett, County Road Surveyor, Shire Hall, Worcester.

OCTOBER 11.—**Alnwick.**—SEWERAGE.—The R.D.C. of Alnwick invite tenders for providing and laying cast-iron pipes, with manholes, ventilators, etc., at Craster North Side. Plan and specification may be seen at the office of the Clerk, Mr. H. W. Walton, Alnwick.

OCTOBER 15.—**Farnley.**—PUMP-HOUSE AND RESERVOIR.—The Waterworks Committee of the Leeds City Council invite tenders for the construction of a small service reservoir and pump-house at Farnley, near Leeds (contract No. 87). Plans may be seen, and specifications and tender form obtained from Mr. Chas. G. Henzell, M.Inst.C.E., Waterworks Engineer, Leeds, on payment of 1*l.* 1s.

STONES, MATERIAL, AND STORES.

SEPTEMBER 27.—**Felixstowe.**—GRANITE AND STEAM ROAD ROLLING.—Felixstowe and Walton U.D.C. invite tenders for the supply of Guernsey granite, and also for steam road rolling. Specifications and forms of tender may be obtained on application to Mr. H. Clegg, A.M.Inst.C.E., Surveyor to the Council, Town Hall, Felixstowe.

SEPTEMBER 27.—**Reigate.**—STONE.—Reigate Board of Guardians invite tenders for the supply of about 150 tons of Cherbourg quartzite spalls or Penlee basalt spalls, for breaking. Mr. Frank C. Morrison, Clerk to the Guardians, 46, High-street, Reigate.

SEPTEMBER 29.—**Barnet.**—BROKEN GRANITE.—Barnet U.D.C. invite tenders for the supply of 2-in. broken granite. Mr. H. W. Poole, Clerk of the Council, Barnet.

SEPTEMBER 29.—**Runcorn.**—EARTHENWARE DRAIN PIPES.—The U.D.C. of Runcorn invite tenders for the supply of glazed socket stoneware pipes. Mr. E. Marshall, Secretary, Town Hall, Runcorn.

SEPTEMBER 30.—**West Ham.**—GRANITE.—West Ham Guardians invite tenders for the supply of 600 tons of Blue Guernsey granite spalls, to be delivered free at the Workhouse, Union-road, Leytonstone, N.E. Tender forms may be obtained on application. Mr. Thomas Smith, Clerk, Clerk's office, Board-room, Union-road, Leytonstone, N.E.

SEPTEMBER 30.—**Windlesham.**—MATERIALS.—The U.D.C. of Windlesham invite tenders for the supply of road materials and for cartage. Forms may be obtained from the Surveyor, Mr. Owen G. Stanley, at the Council Offices, Bagshot.

OCTOBER 1.—**Aberdeen.**—STORES.—The Harbour Commissioners invite tenders for supplying, for the ordinary harbour works, various materials, according to schedules, which will be delivered to intending contractors at the office of Mr. R. Gordon Nicol, Harbour Engineer, Harbour Engineer's office, Aberdeen.

OCTOBER 2.—**Gellygaer.**—LIMESTONE, GRAVEL, ETC.—Gellygaer U.D.C. invite tenders for the supply of broken limestone, nutstone, and gravel. Forms of tender and full particulars can be obtained upon application to the Council's Surveyor, Mr. Jas. P. Jones, Council Offices, Hengoed, via Cardiff.

OCTOBER 7.—**Bishop's Stortford.**—SHINGLE.—Bishop's Stortford U.D.C. invite tenders for the supply of about 120 cubic yds. of shingle. Mr. Thomas Swatheridge, Clerk, Council Offices, North-street, Bishop's Stortford.

OCTOBER 11.—**Todmorden.**—GRANITE SETTS.—Todmorden B.C. invite tenders for the supply and delivery of about 3,000 tons of granite setts. Specification and form of tender may be obtained on application to Mr. J. A. Heap, Borough Engineer.

NO DATE.—**Carn Brea, Cornwall.**—TRAMWAY PAVING SETTS.—Tenders required for 850 tons of 5-in. by 4-in. setts of odd lengths, in lots of 200 to 300 tons, as required, delivered Hayle or Carn Brea, Cornwall. The Urban Electric Supply Company, Ltd., Carn Brea, R.S.O., Cornwall.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	King's Norton, etc., U.D.C.	3*l.* per week	Oct. 1
*CLERK OF WORKS	Glamorgan C.C.	4*l.* per week	Oct. 6
*ASSISTANT IN COUNTY SURVEYOR'S OFFICE	Norfolk C.C.	100*l.* per annum	Oct. 7
*CLERK OF WORKS	West Ham Union	3*l.* 3s. per week	Oct. 14
*ASSISTANT ENGINEER	Ceylon P.W. Department	See advertisement in this issue	Oct. 25

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	Sept. 29
*FREEHOLD BUILDING SITE, DALSTON—At the Mart	W. Stevens	Sept. 30
*BUILDING MATERIALS AND PLANT, BELVEDERE-ROAD, S.E.—On the Site	H. J. Bromley	do.
*FREEHOLD HOUSE, ETC., FRIERN, BARNET—Railway Hotel, New Southgate	Chas. Sparrow & Son	Oct. 4
*CART & VAN HORSES, TROLLIES, VANS, ETC., PUTNEY BDGE., S.W.—On the Premises	David White	do.
*FREEHOLD BUILDING SITES, ETC., SURREY—At the Mart	Breadmore & Webb	Oct. 5
*LIME WORKS, MCHNRY., ETC., STOCKTON, WARWICK—Craven Arms Hotel, Southam	Hutton, Thompson, & Colbourne	Oct. 11
*FREEHOLD PROPERTIES, STOCKTON, WARWICK—Craven Arms Hotel, Southam	Hutton, Thompson, & Colbourne	do.

LAW REPORTS.—*Continued from page* 346.

After hearing evidence and the addresses of counsel on behalf of the respective parties, the learned Official Referee, on July 20 last, reserved his decision upon the issues.

The learned Official Referee, in his decision, now found that no assurance, condition, or warranty, or any collateral or absolute undertaking was given to the petitioners by the Commanding Royal Engineer as alleged in paragraph 13 of the petition, or at all, nor had anyone authority on behalf of the principal Secretary of State for the War Department to give any such assurance, condition, warranty, or undertaking. The said tender was based and the prices therein fixed on the footing that the nearest railway-station was Bentley, but a specific provision was inserted in the contract for deductions to be made in the event of a railway from Bentley to Bordon being constructed, which provision has never come into force.

As to the liability of the suppliants to the Crown to satisfy the claims raised in paragraph 22 and paragraph 23A of the answer and the particulars relating thereto of the respective highway authorities in respect of damage done to highways by the suppliants by causing excessive weights to pass along the same, and for extraordinary traffic thereon, and to indemnify the Crown or the principal Secretary or the officers or Government servants against the same, he found the contractor under each of the contracts referred to in the petition was liable to the Crown for the amount of every claim made by a local authority against the War Office (whether covered by a certificate or not, provided that a certificate could be got, and that there was at the date of the claim time to get it), so far as the items therein represented money expended by the authority in repairing damage done by extraordinary traffic caused by the contractor in the execution of the contract within twelve months before such claim was made, or under a contract either still in course of execution at the date of the claim, or which had terminated, so far as it was capable of causing damage to roads, within six months before the claim.

Mr. W. English Harrison, K.C., and Mr. G. A. Scott appeared for the petitioners; and the Attorney-General and Mr. S. A. J. Rowlatt for the Crown.

ANCIENT LIGHT CASE REFERRED TO ARBITRATION.

THE case of Evans and another *v.* the London and Provincial Bank, Ltd., and another was before Mr. Justice Neville, in the Vacation Court, on the 22nd inst., on a motion by the plaintiffs for an interim injunction to restrain the defendants until the trial or further order from building so as to interfere with the access of light to the plaintiffs' premises.

Mr. Bramwell Davis, K.C., said that it had been agreed to refer the dispute to arbitration, and that the present motion should stand over generally.

His lordship assented to the arrangement.

ANCIENT LIGHT DISPUTE.

IN the Vacation Court on the 22nd inst. Mr. Justice Neville had before him the case of Harrison *v.* the Clitheroe Roller Skating Rink Company, upon the plaintiff's application for an interim injunction restraining the defendant company, until the trial or further order, from building so as to interfere with the access of light to the plaintiff's premises.

Mr. Bramwell Davis, K.C., said that as the plaintiff had, since the motion was launched, sold his interest in his premises, and the purchase had not yet been completed, it was impossible to then proceed with the motion, and it had been agreed that there should be no order on the motion other than that the defendants should pay the costs of it.

His lordship sanctioned the arrangement.

Patents.

APPLICATIONS PUBLISHED.*

17,824 of 1908.—P. Lang: Apparatus for moulding concrete ceilings.

18,306 of 1908.—J. C. A. Maddick: Means for ventilating windows and the like.

22,967 of 1908.—D. Price: Machines for the manufacture of bricks.

23,010 of 1908.—J. J. Loke: Manufacture of tiles, slabs, or other finished products of hard materials.

2,284 of 1909.—J. W. Williamson and H. Newsum, Sons, & Co.: Construction of doors and panels of all descriptions in wood.

4,082 of 1909.—L. Tompkin: Means and method of building walls, partitions, and the like.

4,468 of 1909.—A. S. Hyde: Apparatus for bending pipe.

5,008 of 1909.—P. Koch: Manufacture of wall covering or facing plates.

8,662 of 1909.—C. March and W. Haggo: Manufacture of wall-ties and the like.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 7.—By THORNBOROW & CO. (at Penrith).

Bampton, Westmorland.—Keld Head Farm, 39½ a., f.	£1,780
By HALLETT & BALLARD (at Horley).	
Horley, Surrey.—Yattendon-rd., Rose Villa and Gatwick Villa, f.	500
By FRANK LLOYD & SONS (at Ruthin).	
Ruthin, Denbigh.—Llysfasi Estate and Penygaer Farm, 770 a., f.	14,600

September 8.—By ABERCROMBIE & EDMUNDS.

Kilburn.—19, Netherwood-st., u.t. 59 yrs., g.r. 8*l.* 8s., gross rental 65*l.*	410

September 9.—By FRANK LLOYD & SONS (at Denbigh).

Denbigh.—Foxhall Estate, 995 a., f.	24,610

September 11.—By H. W. & C. SPELMAN (at Norwich).

Strumpshaw, Norfolk.—Blacksmith's shop and three cottages, 1 a. 0 r. 12 p., f.	300
Wickhampton, Norfolk.—Grazing marshes, 17 a. 3 r. 18 p., f.	770
Halvergate, Norfolk.—Grazing marsh, 11 a. 3 r. 15 p., f.	450

September 13.—By WILKINSON, SON, & WELCH (at Brighton).

Brighton.—31, 32, and 33, Western-st., f., y.r. 97*l.*	1,170

September 14.—By F. HOUGHTON & DAVISON.

Hanwell.—86, 88, 90, and 94, Uxbridge-rd., f., y.r. 80*l.* 12s.	835
5, 7, 9, and 11, Lower Boston-rd., f., gross rental 67*l.* 12s.	500
Marylebone.—1 and 2, Weston-pl., u.t. 31 yrs., g.r. 1*l.*, gross rental 67*l.* 12s.	325
By MAPLE & CO.	
Islington.—49, Gerrard-st., f., e.r. 45*l.*	450
By DRIVER, JONAS, & CO. (at Exeter).	
Chudleigh, Devon.—Barcombe Barton Farm, 527 a. 1 r. 21 p., f.	7,750
Dawlish, Devon.—Jubilee Farm, 55 a. 3 r. 10 p., f.	1,900

Digitized by Google

By WALLER & KING (at Southampton).

Southampton.—76, Cambridge-rd., f., y.r. 18*l.* 128, 130, and 132, Paynes-rd., u.t. 972 yrs., g.r. 4*l.* 10s., y.r. 45*l.*	£365
16 and 18, Mansion-rd., f., gross rental 28*l.* 16s.	580
September 15.—By E. & S. SMITH.	270
King's Cross.—16, Vernon-sq., u.t. 23 yrs., g.r. 26*l.*, p.	150

By KEMSLEY (at Romford).

Dagenham.—1 to 12, Hope-ter., f., w.r. 163*l.* 16s.	1,980
Halbutt-st., Bishcrofts and 2½ a., f.	430
Eleanor-rd., Maryon-villas (2), f., w.r. 36*l.* 8s.	350
High-st., Paradise-cottages (2), f., w.r. 31*l.* 4s.	350
Ockendon.—Stifford-rd., two cottages, f., w.r. 20*l.* 16s.	180
Romford.—19 and 21, Catherine-rd., f., w.r. 37*l.* 14s.	390
14, Western-rd., f., p.	1,150
September 16.—By WORSFOLD & HAYWARD (at Dover).	
Shepherdswell, Kent.—Leather Bottle b.h. and two cottages adjoining, f.	1,100

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	,, delivered
Flettons	1 4 6	,, at railway depôt.
Best Fareham Red	3 12 0	,, ,, ,,
Best Red Pressed Ruabon Facing	5 0 0	,, ,, ,,
Best Blue Pressed Staffordshire	3 15 0	,, ,, ,,
Do. Bullnose	4 0 0	,, ,, ,,
Best Stourbridge Fire Bricks	3 14 0	,, ,, ,,
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	,, ,, ,,
Headers	9 17 6	,, ,, ,,
Quoins, Bullnose, and Flats	13 17 6	,, ,, ,,
Double Stretchers	15 17 6	,, ,, ,,
Double Headers	12 17 6	,, ,, ,,
One Side and two Ends	16 17 6	,, ,, ,,
Two Sides and one End	17 17 6	,, ,, ,,
Splays and Squints	15 7 6	,, ,, ,,
Best Dipped Salt Glazed Stretchers	10 7 6	,, ,, ,,
Headers	9 17 6	,, ,, ,,
Quoins, Bullnose, and Flats	13 17 6	,, ,, ,,
Double Stretchers	15 17 6	,, ,, ,,
Double Headers	12 17 6	,, ,, ,,
One Side and two Ends	16 17 6	,, ,, ,,
Two Sides and one End	17 17 6	,, ,, ,,
Splays and Squints	15 7 6	,, ,, ,,
Second Quality White and Dipped Salt Glazed	1 5 0	,, less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	,, ,,
Best Portland Cement	28 0	per ton, ,,
Best Ground Blue Lias Lime	19 0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	,, ,,
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	,, ,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	,, ,,

	s. d.	
Ancaster in blocks	1 10	per ft. cube deld. rly dep.
Beer ,,	1 6	,, ,,
Greenshill ,,	1 10	,, ,,
Darley Dale in blocks	2 4	,, ,,
Red Corsehill ,,	2 2	,, ,,
Closeburn Red Freestone	2 0	,, ,,
Red Mansfield ,,	2 4	,, ,,

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks.	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. ,,
6 in. rubbed two sides ditto, ditto	2 6	,, ,,

STONE (*continued*).

YORK STONE—(*Robin Hood Quality*) *continued*—

	s. d.	
3 in. sawn two sides slabs (random sizes)	0 11½	per ft. super. del rly. dept.
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	,, ,,
1½ in. to 2 in. ditto, ditto	0 6	,, ,,

HARD YORK—

Scappled random blocks.	3 0	per ft. cube, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. ,,
6 in. rubbed two sides ditto	3 0	,, ,,
3 in. sawn two sides slabs (random sizes)	1 2	,, ,,
2 in. self-faced random flags	0 5	,, ,,

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 ,, ,,	13 17 6	,, ,,
20×10 first quality ,,	13 0 0	,, ,,
20×12 ,, ,,	13 15 0	,, ,,
16×8 ,, ,,	7 5 0	,, ,,
22×10 best blue Portmadoc	12 12 6	,, ,,
16×8 ,, ,,	6 12 6	,, ,,
20×10 best Eureka unfading green	15 17 6	,, ,,
20×12 ,, ,,	18 7 6	,, ,,
18×10 ,, ,,	13 5 0	,, ,,
16×8 ,, ,,	10 5 0	,, ,,
20×10 permanent green	11 12 6	,, ,,
18×10 ,, ,,	9 12 6	,, ,,
16×8 ,, ,,	6 12 6	,, ,,

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. dep.
Hip and Valley tiles	3 7	per doz. ,,
Best Broseley tiles	50 0	per 1000 ,,
Do. Ornamental tiles	52 6	,, ,,
Hip and Valley tiles	4 0	per doz. ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 ,,
Do. Ornamental do.	60 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 0	,, ,,
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 ,,
Do. Ornamental do.	54 6	,, ,,
Hip tiles	4 1	per doz. ,,
Valley tiles	3 8	,, ,,
Best "Rosemary" brand plain tiles	48 0	per 1000 ,,
Best Ornamental tiles	50 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 8	,, ,,
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 ,,
Do. pressed	47 6	,, ,,
Do. Ornamental do.	50 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 6	,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 ,,
Hand-made sand-faced	45 0	,, ,,
Hip tiles	4 0	per doz. ,,
Valley tiles	3 6	,, ,,

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.	
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	15 0 0	
Deals: best 3 by 9	13 0 0	14 0 0	
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0	
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.	
Deals: seconds	1 0 0	less than best.	
Battens: seconds	0 10 0	,,	
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	10 0 0	
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0	
Foreign Sawn Boards—1 in. and 1½ in. by 7 in.	0 10 0	more than battens.	
⅞ in.	1 0 0	,,	
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0	
Seconds	4 0 0	4 10 0	
Small timber (8 in. to 10 in.)	3 12 6	3 15 0	
Small timber (6 in. to 8 in.)	3 0 0	3 10 0	
Swedish balks	2 10 0	3 0 0	
Pitch-pine timber (30 ft. average)	4 0 0	4 15 0	

JOINERS' WOOD.	At per standard.		
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	25 0 0	
3 in. by 9 in.	22 0 0	23 0 0	
Battens 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0	
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0	
3 in. by 9 in.	17 10 0	19 0 0	
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0	
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0	
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0	
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0	
Do. 3 in. by 9 in.	18 0 0	19 10 0	
Battens	13 10 0	15 0 0	
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0	
Do. 3 in. by 9 in.	14 10 0	16 0 0	
Battens	11 0 0	12 10 0	
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0	
Do. 3 in. by 9 in.	12 10 0	14 0 0	
Battens	10 0 0	11 0 0	
White Sea and Petersburg—First white deals, 3 in. by 11 in.	14 10 0	15 10 0	
,, ,, 3 in. by 9 in.	13 10 0	14 0 0	
Battens	11 0 0	12 0 0	
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0	
,, ,, 3 in. by 9 in.	12 10 0	13 10 0	
Battens	10 0 0	11 0 0	

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £ s. d.	£ s. d.	
Pitch-pine: deals	18 0 0	21 0 0	
Under 2 in. thick extra	0 10 0	1 0 0	
Yellow pine—First, regular sizes	44 0 0	upwards.	
Oddments	32 0 0	,,	
Seconds, regular sizes	33 0 0	,,	
Oddments	28 0 0	,,	
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0	
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	0 3 9	
Small ,, ,,	0 2 6	0 2 6	
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0	
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	0 0 9½	
¼ in. do. do.	0 0 7	—	
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0	
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6	
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0	
Teak per load	17 0 0	23 0 0	
American Whitewood Planks, per ft. cube	0 4 0	0 5 0	
Prepared Flooring, etc.—	Per square.		
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0	
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0	
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0	
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6	
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0	
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6	
¼ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	0 13 6	
1 in. by 7 in. ,, ,,	0 14 0	0 18 0	
¼ in. by 7 in. white ,,	0 10 0	0 11 6	
1 in. by 7 in. ,, ,,	0 12 9	0 15 0	

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	7 10 0
Compound Girders, ordinary sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	10 0 0
Flitch Plates	9 0 0	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	—
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
,, ,, Galvanised	17 0 0	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black—Ordinary sizes to 20 g.	9 15 0	—
,, ,, 24 g.	10 15 0	—
,, ,, 26 g.	12 5 0	—
Sheet Iron, Galvanised, flat, ordinary quality—Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	—
,, ,, 26 g.	16 10 0	—
Sheet Iron, Galvanised, flat, best quality—Ordinary sizes to 20 g.	18 0 0	—
,, ,, 22 g. and 24 g.	18 10 0	—
,, ,, 26 g.	20 0 0	—
Galvanised Corrugated Sheets—Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	—
,, ,, 22 g. and 24 g.	14 15 0	—
,, ,, 26 g.	16 5 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	—
,, ,, ,, 26 g.	15 0 0	—
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.	Per ton in London. £ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 2 6	—
Pipe in coils	16 12 6	—
Soil pipe	18 12 6	—
Compo pipe	19 12 6	—
ZINC—Sheet—Vielle Montagne	27 5 0	—
Silesian	27 0 0	—
COPPER—		
Strong sheet per lb.	0 1 0	—
Thin ,, ,,	0 1 1	—
Copper nails ,,	0 0 10	—
Copper wire ,,	0 0 10	—
BRASS—		
Strong Sheet ,,	0 0 11	—
Thin ,,	0 1 0	—
TIN—English Ingots	0 1 4	—
SOLDER—Plumbers' ,,	0 0 6½	—
Tinmen's ,,	0 0 9	—
Blowpipe ,,	0 0 11	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
,, fourths	1¾d. ,, ,,
21 oz. thirds	3d. ,, ,,
,, fourths	2¼d. ,, ,,
26 oz. thirds	4d. ,, ,,
,, fourths	3d. ,, ,,
32 oz. thirds	4¾d. ,, ,,
,, fourths	4¼d. ,, ,,
Flute Sheet, 15 oz.	3¼d. ,, ,,
,, 21 oz.	4¼d. ,, ,,

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3478. OCTOBER 2, 1909.

Contents.

	PAGE
The House of Lords and the Housing Bill ..	353
The Durability of Building Stones.....	355
Notes	356
The Ancient Aqueducts of Lyons.....	357
Almshouses at Beaminster	358
The Association of Municipal and County Engineers	358
The Iron and Steel Institute.....	360
St. Paul's Church, Plumstead.....	361
London Master Builders' Association.....	362
An Effort in Shop Architecture	362
Competition for a Design for a Façade to No. 9, Conduit-street	362
Meetings	364
Illustrations:—	
Chapel for the Community of the Ressurrection, Mirfield, Yorkshire	364
Grimsby Town Hall Competition.....	364
Berkshire County Council Offices	364
Notes from France	364
Queen Alexandra Sanatorium, Davos	364
Swedish Building Stones	365
Trade Catalogues.....	366
Books Received.....	366
Competition News.....	366
London and District Borough Councils.....	366
Projected New Buildings in the Provinces ..	367
General Building News.....	367
Stained Glass and Decoration	369
Appointments	369
Sanitary and Engineering News	369
Miscellaneous	369
List of Competitions, Contracts, etc., Open ..	371
Patents	374
Some Recent Sales	374
Prices Current	374
Tenders	375

Illustrations.

Chapel for the Community of the Ressurrection, Mirfield. Mr. Walter Tapper, A.R.I.B.A., Architect.

1. Exterior Perspective.
2. Interior Perspective.

Second Premiated Design for the Extension of Town Hall, Grimsby. By Messrs. Withers & Meredith.

Third Premiated Design for Berkshire County Council Offices, Reading. By Messrs. Wills & Anderson.

Illustrations in Text.

	PAGE
Almshouses at Beaminster	358
St. Paul's Church, Plumstead. Messrs. W. & C. A. Bassett-Smith, Architects	361
An Effort in Shop Architecture	362
Skelston Elevation and Plans of Front Walls of No. 9, Conduit-street	363
Queen Alexandra Sanatorium, Davos:—	
View on the Snow-covered Roof	365
General View.....	365

The House of Lords and the Housing Bill.

We heard it remarked the other day by a well-known public man, much interested in schemes of town improvement, that the attitude of the peers towards the Housing and Town Planning Bill was essentially the attitude of their family solicitors, who would point out to each large land owner where and in what points the Bill was likely to prejudice his estates, and counsel him to act accordingly. This cynical judgment was somewhat too sweeping, but there is a good deal to excuse it in the reports of the discussion which occupied four evenings in the House of Lords. Some good points were made here and there, but the general tone of the discussion was hardly that of legislators anxious for the greatest good of the greatest number, which is the real object of the Bill.

The most gratifying feature in the discussion on the second reading was the high stand taken by two of the Peers Spiritual, the Archbishop of Canterbury and the Bishop of Birmingham, both of whom did their best to raise the discussion above the level of party spirit, and to insist on the beneficent objects of the Bill and the great need of strong measures to bring about an improvement in housing. The Bishop stood up boldly in favour of the original Clause 30 for a quinquennial survey register of houses, which had been struck out in the House of Commons, a fact which he greatly deplored. "He attached extraordinary importance to the register, for he believed it was worth while to go to a very considerable expense in order that the names of the owners of the worst property might be known." He hoped also that the Government would adhere to Clause 61 (*b*), which gave the Local Government Board power to intervene, after holding an inquiry, when a local authority appeared to be unwilling to put a scheme into operation. The Archbishop of Canterbury also regretted the elision of Clause 30, and half suggested that the clause had been abandoned out of a kind of tenderness towards the feelings of owners of insanitary property—a tenderness which he thought very much misplaced. He maintained (and we need hardly say that we entirely agree with him) that a man was doing a distinct wrong to the community who was able to conceal his identity and yet to earn money from property of which he would be ashamed to acknowledge ownership. The Archbishop also spoke strongly in favour of rendering the medical officer of a local authority unremovable from his office except by the consent of the Local Government Board. This remark was probably aroused by the previous speech of Lord Belper, who "took the strongest possible exception to the power given in Clause 68 (2) to the Local Government Board to prescribe the duties of the county councils' medical officers, and to withhold consent to their removal." What were Lord Belper's motives for objecting to this we are not told, but he must be little acquainted with facts if he thought there was no need for such a support by the Board of the medical officer. Over and over again it has come out that a medical officer would have been glad to report house property as insanitary, and dare not do so because his own paymasters were the owners of it; and only a few days ago a case was reported in the daily papers where a tenant of property owned by a corporation had complained to their medical officer of its condition, and had been evicted in consequence!

In committee on the Bill, on September 23, Lord Belper accordingly moved the omission of subsect. 5 of Clause 68, and obtained it in spite of the strong opposition of Government members, Earl Beauchamp saying that the Government attached the greatest importance to the clause, and that if it were omitted the medical officer would pass from a position of security of tenure under the Local Government Board to the liability of dismissal at the pleasure of the County Council. Everyone who knows the facts knows that this is a most difficult and delicate position for the medical officer. To argue, as Lord Belper did, that the medical officers would resent as an insult any suggestion that their action could be affected by pressure on the part of a county council is absurd; they are often men doing a great deal of hard work on very small salaries, and they cannot afford to risk losing their livelihood by reporting against the property of members of the council. It is a very bad state of things, which the clause would have gone to remove, and its omission is a bad piece of business. Apparently an amendment was also carried (for the newspaper report is not very clear) to omit subsect. 2 of Clause 68, to the effect that the Local Government Board may prescribe the duties of medical officers appointed by a county council; the object being, as Lord Crewe observed on behalf of the Government, merely to secure a minimum standard of efficiency; the council could add any further duties they pleased. If the peers who managed to get rid of these salutary clauses had been in the habit, as we have, of reading the numerous Reports by special inspectors to the Local Government Board, on the sanitary state of various rural and urban districts, and the manner in which, over and over again, it comes out that the local council have been repeatedly urged by the

Digitized by Google

Board as to the necessity of improvement in such matters as drainage, water supply, and sanitation generally, and how often they have remained deaf, year after year, to this advice and refused to move or to do anything, it might have dawned on these obstructionist peers that there was more reason in such proposals than they had realised. At all events, we hope there will be some chance of getting these salutary clauses restored before the Bill becomes law.

In regard to the Clause 30 before referred to as shipwrecked in the other House, two other Bishops came forward to propose amendments or additions that would to some extent fill its place. The Bishop of Hereford, on the 21st, moved that the owner or leaseholder of every dwelling-house subject to the operation of this Act should be compelled to place his name and address in a conspicuous position on the house, just as (he said) those of their lordships who were farmers had to place their names on their farmers' carts. This seems a simple proposition which would disclose the owner without the business of survey and registration; but Earl Beauchamp declared (amidst "Opposition cheers") that the Government could not accept the amendment, though professing the greatest sympathy with its object. The Bishop of Southwark, on the following evening, moved a new clause in a speech the condensed report of which is worth quoting:

"The Bishop of Southwark moved a new clause providing that it should be the duty of every local authority to keep a register of every dwelling-house within the limitation of Clause 14, the register to be completed within twelve months, to be revised every year, and to be open to the inspection of any ratepayer. He reminded the House that there had been a somewhat similar clause inserted in the Bill in Grand Committee, but that it had since been struck out. He knew of the harm which was done through the existence of a number of small properties as to which the ownership was very obscure. An owner very often did not know what condition his property was in, and if he could be approached he would see that it was put into proper condition. It might be said that local authorities had the power to obtain this information, but they were sometimes apathetic, while there were also occasions when the influence of a certain class of owner was used harmfully behind the scenes to direct the action of the local authority."

This is less practical, perhaps, than the originally prepared quinquennial survey; but there is a great deal of truth in the Bishop's remarks, which, however, only met with the same response as the Bishop of Hereford's proposal, viz., that the Government could not accept it; and the Archbishop of Canterbury was stung into remarking that—

"They on that bench desired to make it impossible for any man who was the owner of vile property to escape the fullest publicity and the wholesome discipline which would follow. He understood now for the first time that the Government took the opposite view and desired to shield from public knowledge those who might be the owners of property which they would be ashamed to confess themselves the owners of. That the amendment should be repudiated by the Government caused him both surprise and disappointment."

It is certainly surprising that while the leasing of house property in an insanitary state by those who derive rents from it is a well-known and widespread evil, every proposal to take any practical steps to put an end to this has been negatived, not by the Opposition, but by the framers of the Bill themselves.

We have not space, of course, to go into all the points raised in a Committee discussion which lasted three nights; but some demand notice. To a motion by the Earl of Camperdown to clip the wings of the Local Government Board in respect of some of the powers proposed to be given to them, more especially as to the compulsory purchase of land, both Earl Beauchamp and the Earl of Crewe replied in nearly the same terms we have already used in speaking of the Commons debate—to wit, that in the case supposed the Local Government Board was a perfectly impartial body; as the Earl of Crewe said, "the Department was in as impartial a position as any set of people could be who were called in to adjudicate on a particular subject." Nevertheless, Lord Camperdown's string of amendments were carried by a large majority, a result which will have the effect of rendering proceedings under the Act much more dilatory and expensive than they otherwise might be; all this from the exaggerated fear of giving too much power to a Government Department the action of which has hitherto always been for the public good. Amendment after amendment was carried with the same general object—that of preventing the direct and authoritative action of the Local Government Board in bringing about the improvements in housing which were the main object of the Bill. All this may be, in regard to precedent, highly constitutional, but it is not the way to render the Bill a really effective instrument in bringing about some of the reforms which are so urgently needed, and which are likely to be opposed by such a weight of prejudice and of official inertia. They are amendments not for the good of the public, in the widest sense, but for the protection of ratepayers and officials.

Lord St. Aldwyn's amendment in regard to the regulations which made a room used as a sleeping-place "unfit for human habitation," on the ground that these were "too particular and minute for an Act of Parliament," was a useful one. He proposed the omission of some of the regulations and the insertion of the words—"It shall be the duty of the local authority to define from time to time by by-laws, approved by the Local Government Board, the requirements necessary for sufficient ventilation or sufficient protection against damp, effluvia, or exhalation." This, which was accepted by the Government conditionally on some possible revision, allows of a change of regulations in accordance with difference of local circumstances, and also *ipso facto* imposes on the local authority the duty of looking after such cases on its own responsibility.

It seems difficult to credit, but it is the fact that the wisdom of the House of Lords has actually taken back-to-back houses, which have been condemned by competent sanitarians for a quarter of a century, under its protection. Lord Monk Bretton moved an amendment to Clause 44 (prohibiting back-to-back houses), to the effect that "nothing in the section should prevent the erection of houses placed back to back if the medical officer of health certified that they were constructed and arranged so as to secure effective ventilation." The medical officer, if he knows his business, knows that they cannot be so in the full and true sense of the word. Yet this amendment was "agreed to without a division." Here again we have to be grateful to the Church for standing in the gap, for the Archbishop and two bishops all protested against the amendment, the Bishop of Wakefield remarking that "in perpetuating back-to-back houses they would be laying up for the country a heritage which would come back to them with disastrous effect"; plain words which seem to have been thrown away. We should like to know what is behind this surprising tenderness towards back-to-back house property. Not knowledge, certainly.

On September 23 the attempt to rule land acquired by railway companies out of the operation of the town-planning portion of the Bill, which had been two or three times defeated in the other House, was at length accomplished in the acceptance of an amendment to that effect by Lord St. Aldwyn. This repeated display of anxiety for the interests of the railway companies and their property is significant.

An attempt to define the "working classes," in a clause moved by the Earl of Camperdown, was accepted. We think it is likely to cause trouble afterwards. It is made with the object of directing the local authority as to what was the state of things which would justify them in allowing housing schemes. We do not believe it is possible to frame a definition of "working classes" that would not have serious loopholes in it. Lord Crewe's recommendation of a rental basis was much more practical.

Then came Earl Cawdor's grand attack on the town-planning portion of the Bill, in the shape of an amendment to omit from Clause 54, sect. 4 and 5 (the whole clause will be found quoted on page 280 of our issue of September 11), thereby removing from the Local Government Board all its proposed power of providing for and initiating a town-planning improvement scheme. All the powers for acquiring land and removing obstructive buildings, which we commented on as likely to be often such a real benefit to a town, were denounced without measure. The best comment on the speech is that of Lord Crewe in reply:

"Convinced of the advantages that came from the general introduction of the town-planning system, the Government were prepared, in order that it might come about, to sacrifice some of those precautions sanctified by time and decorated by vast expenditure of money which had been applied in many previous Acts. Noble lords opposite were willing to express a general approval of town-planning as an admirable thing in theory, but they would not go a step aside from the old rut in order to encourage the system. In his opinion the bulk of the noble earl's speech in moving the amendment indicated a frame of mind towards the whole of this question which would make it practically useless to attempt to pass an Act dealing with the matter."

In spite of this plain speaking the amendment was carried by a majority of seventy-three to thirty-one.

That crowns the edifice. Whether the Bill is ultimately to be left in this state remains to be seen. Meanwhile, the House of Lords may be congratulated on having destroyed the whole weight and driving force, as one may say, of a Bill which, as law, might have started

Digitized by Google

a new order of things in this country, where we are so slow to commence improvements, and reduced it to a tame and harmless constitutional measure on antiquated lines, which will do neither harm nor good to anyone.

THE DURABILITY OF BUILDING STONES.

MANY good pictures have been lost to the nation because they were painted with perishable paints, and many buildings of good design and workmanship have fallen prematurely into decay because they were constructed with materials which were speedily corroded and disrupted by the action of rain and air. One of the difficult tasks with which the architect of an important building in an English town is commonly confronted is the selection of stone which will resist the attack of a humid and smoky atmosphere, and which will not exhibit a corroded surface after a decade's exposure. It is easy to specify the use of a stone of good repute, but that is not sufficient to ensure the use of durable material; for stone from a quarry which yields stone of the highest grade may, nevertheless, decay rapidly if not properly selected and properly seasoned. Architects of buildings in English towns are greatly handicapped in their work by the fact that their buildings must be exposed to the corroding influence of soot and smoke, in addition to the more natural agents of destruction, rain and wind, snow and frost. The great pyramids which remain in good condition after exposure for many centuries in the warm, dry climate of Egypt would soon crumble if transferred to London, and, like Cleopatra's Needle on the Thames Embankment, would soon require painting with a protective coating. It may be said that it is impossible for every architect to be a stone expert, and that the architect must of necessity depend upon others to see that no inferior stone finds a place in his building. It is, however, a fact that when a building shows conspicuous signs of premature decay the reputation of the architect is to some extent damaged.

The Reports of the Commissioners appointed in 1839 to select the most suitable stone for constructing the Houses of Parliament, and of the Committee appointed in 1861 to inquire into the cause of the decay of the stonework of the newly-erected Houses are familiar to many architects; but since these two reports together form a most interesting and instructive treatise on the comparative durability of British building stones, the story of the investigations made in connexion with these buildings may be briefly retold for the benefit of the rising generation of architects and builders.

In order that the new Houses might be constructed of stone which would withstand the attack of the London atmosphere, a Commission was appointed to ascertain which of the available stones was most likely to prove durable. Granites, porphyries, and stones of a similar character were not taken into consideration on account of the prohibitive expense which at that date would have been involved by their use, and because durable limestone or sandstone could be more easily obtained and more easily worked. The use of granite would also have entailed the erection of a building of a style totally different from that actually adopted. The Commissioners were some of the most competent men of the day. They visited many quarries, examined many buildings, questioned many stone experts, and after most careful consideration they recommended the use "the Magnesian Limestone, or Dolomite, of Bolsover Moor and its neighbourhood."

The building of the Houses was commenced in 1840 and completed in 1857. The stonework soon showed alarming signs of decay, and in 1861 a Committee was appointed to report upon the following matters:—(1) The extent and position of the decay; (2) the causes to which it is attributable; (3) the best means of preserving the stone from further decay; and (4) the qualities of the stones to be recommended for future use in public buildings to be erected in London.

This Committee found that the stone from Bolsover Moor, in Derbyshire, which had been recommended by the Commission, had not been used because it was discovered that blocks of the size required could not be obtained from the Bolsover quarries. It was found that larger blocks could be obtained from the neighbouring quarries of Anston, in Yorkshire, and Anston stone was, therefore, used. There is little difference in chemical composition between the Bolsover dolomite and the Anston dolomite. The Committee, however, further found that insufficient attention was given to the condition of the blocks employed, and that the selection "was left to persons who admit that they had little or no prior experience of this description of stone, though they evidently entertained suspicions of the durability of some of it which they were employing."

This laxity in supervising the condition of the stone appears the more remarkable in view of the fact that Christopher Wren, when building St. Paul's Cathedral in the XVIIth century, recognised the supreme importance of using only stone that was in good condition, and would not allow any stone to be sent to London that had not been exposed to the air for three years after it had been quarried. The blocks became well seasoned by this exposure, and any blocks which showed signs of decay could be rejected. The Museum of Practical Geology in Jermyn-street was built at about the same time as the Houses of Parliament, and was also built with Anston dolomite. This building is still in good condition, and the fact that the Anston stone has weathered so much better in this case is no doubt due to the fact that the blocks of stone were, it is believed, carefully selected by Sir Henry de la Beche. Properly selected and seasoned Portland stone, such as was used by Wren, remains to this day the most durable of all the English natural calcareous stones for outdoor work, but it must be remembered that the Portland quarries also contain stone of very inferior quality. There are a few other limestones which are not very greatly inferior to Portland stone. Hopton Wood stone from Derbyshire is a limestone which weathers well, but it is too expensive for general use in London. Ancaster stone from Lincolnshire is an oolitic limestone which closely approximates in chemical composition to Portland stone, and is fairly durable in the London atmosphere. The red dolomitic sandstone which comes from Mansfield in Nottinghamshire is much liked by some architects, and has been used with satisfactory results in a number of London buildings.

Many softer and less durable oolitic limestones, such as those from the neighbourhood of Bath, are largely used because they are cheap and easily worked. These stones are now frequently made more durable by treatment with some indurating fluid. The surface of the indurated stone is less affected by exposure to the London air than the untreated stone, but we do not regard blocks of stone indurated by artificial treatment as being equal in durability to blocks of stone which are naturally durable. Of the Bath stones, the stone known as "Box Ground" has been found to be the most durable in London. A soft, fine-grained limestone from Caen in Normandy was commonly used for important English buildings for four or five centuries after the Norman Conquest, and attempts have been made in later times to bring it again into popularity, but it is now generally recognised that the stone is not suited for London buildings, for it decays even more rapidly than Bath stone. It is a soft oolitic limestone closely resembling Bath stone.

Knowledge of the chemical composition of a stone is not of much service as an aid in the valuation of the stone. Two blocks may have the same chemical composition and yet one be durable and the other liable to speedy decay when exposed to the air. It is the physical condition of the stone, and the nature of the substance which binds together the individual grains which form the greater portion of the stone, which are of importance.

Carbonate of lime, which is the chief constituent of most limestones, is soluble to an appreciable extent in rain water, which contains carbonic acid in solution; and it is readily decomposed by sulphuric acid, which is always present in coal smoke. Silica is neither soluble in rain water nor decomposed by sulphuric acid, yet many limestones are more durable than some sandstones containing over 90 per cent. of silica. The decay of soft sandstones is not due to any chemical decomposition of the sand, but to the decay of the material which binds together the grains of sand. This cementing material may consist of carbonate of lime, or of felspar, or of some other substance liable to be disintegrated or dissolved by rain which has fallen through a smoky atmosphere. On the other hand, when the sand grains are cemented by silica the sandstone may be more durable than any description of limestone. Oxide of iron is the cementing material in some very good sandstones, but ferruginous sandstones are not always durable. It is evident, therefore, that no indication of the behaviour of a building stone when exposed in a smoky atmosphere can be obtained from its chemical analysis. From a chemical

Digitized by Google

point of view marble should weather quite as well as Portland stone, but we know that it does not.

Good granite is perhaps the most durable of natural stones, but it is costly, difficult to work, and does not lend itself to decoration like limestone.

So far as durability is concerned, some of the artificial stones are as good as the best natural stones. This is not surprising, for all natural stones are variable in composition and in physical condition, and are liable to possess faults and flaws. A good artificial stone is uniformly good. For example, Victoria stone is made by cementing pulverised Leicestershire granite with Portland cement, and hardening the blocks so constructed by immersing them in a solution of sodium silicate. A stone so constructed should be free from local faults, and it has been found to be very durable. Good artificial stone is excellent material for constructive purposes, and especially for dressings, but its very uniformity renders it less pleasing in appearance than many less perfect natural stones. This great power of resistance to the London atmosphere is only possessed by the best descriptions of artificial stone. Some very inferior forms of artificial stone are sometimes used, and these are not so durable.

In a paper communicated to the *Builder* in 1905 Mr. W. R. Purchase remarked upon the difference between the surface of stone cut by hand with a chisel and that cut by machinery, and expressed the opinion that hand-cut stone would weather better than stone cut by machinery. He suggested that machines should be used only to cut the stone to within about a quarter of an inch of the finished surface, and that the mason might finish the work with a hand chisel. Stone so treated would, he thinks, weather much better than stone which exposes a machine-scraped surface to rain, wind, and smoke. He is probably right. The condition of the surface of the stone affects the life of the whole block, for as a rule the decay proceeds from the surface inwards, and where the surface of the stone is perfectly protected the whole block remains perfect.

NOTES.

The Building Trade and the Finance Bill. THE Budget Protest League is circulating a statement which will be found summarised in the *Times* of September 25, showing the paralysing influence exerted by the Budget proposals on the building trade in South London and the suburbs. The signatories number some thirty members of the building and allied trades, and they state that up to May last they were employing on the average some 4,944 men, but the number at the present time is 2,309, and further reduction in the numbers employed will soon become necessary. Letters received by the League from building firms bear out the serious condition of the trade owing to the proposals contained in the Finance Bill. It will be a sorry spectacle to see men of the calibre of those employed in the building trade driven to the unproductive and unsatisfactory "relief works," and the money expended upon "relief works" should certainly be set against the very problematical net sum to be derived from the Government's proposed new taxes on land.

The Flight from London. THAT the movement of the population from London to the country has now assumed remarkable proportions is evidenced by the annual report of the Medical Officer of Health for Hertfordshire, who speaks of the new tendencies to migration. Motor-cars and omnibuses, the Barnet and Waltham Cross tramcars from London, the existing railways, and, before long, the proposed electric railway from Euston to Watford, and the new Great Northern through Enfield and Hertford to Stevenage are all giving effect to the growing tendency towards country or suburban residence. Latterly, however, the movement has taken another turn of far greater significance in the emigration from London of factories, as shown in Herts by the growth of Watford from 29,000 to 39,500 since the last census, and of the First Garden City at Letchworth to some six thousand in five years. The figures for the whole county show a considerable and constant increase due mainly to the emigration from London. Witness is given to this tendency to emigration from town to country in the efforts of the railway companies to advertise the sites suitable for residential and industrial building along their lines. This centrifugal tendency of the London population is further shown by a recent Report on the housing question in the county of London by the statistical officer of the Council. In eleven boroughs and in the City the population was either stationary or diminishing. The increase of population between the years 1891-1901 in the county of London was 308,224, whereas in the extra London districts adjacent to London it was 639,372.

The "G. B." Tramway System. AN interesting paper on the "Working of the 'G. B.' Tramway System at Lincoln" was read last Saturday by Mr. Clegg, the City Electrical Engineer, to the Incorporated Association of Municipal Engineers. In this system the cars collect the current from studs on the road, and no overhead wires are required. The cost of installation was about 10 per cent. greater than it would have been if overhead wires were used. Still, as the running expenses are smaller and the risk of a breakdown in the supply seems to be less, the extra expense is not a serious item. The silent running of the cars on the stud system compares favourably with the noisy hum of the trolley on the overhead wires. The most serious question, however, in connexion with stud systems is the possibility of the studs being left alive. In Lincoln apparently on a very short line of tramway there are on an average three studs left alive per month. We cannot, therefore, agree with Mr. Clegg's conclusion that there is less danger to the public from shock and injury than if the overhead system were used. A break in a trolley wire is a very rare occurrence, and the safety devices customarily employed would practically always render the wire harmless. In the case of a live stud a shock would probably be the first indication to the public that anything was wrong. Until a system can be invented in which live studs are a physical impossibility, it seems to us that stud systems can only be used in very special cases, and should never be used in crowded thoroughfares.

The Workington Boiler Explosion. A MOST serious accident, fortunately unattended by injury to a single person, which took place a few days ago at Distington Ironworks, near Workington, serves as a reminder of the potentiality for destruction possessed by steam boilers, inoffensive as such appliances look, and generally are when in proper condition and under careful management. The explosion now in point wrecked a range of ten boilers supplying steam to blowing engines, caused damage to the estimated value of 5,000*l*., and temporarily threw some 200 men out of work. Three of the boilers were blown into fragments, and the extraordinary force of the explosion was demonstrated by the fact that one boiler, weighing 15 tons, was projected through the air for a distance of nearly 450 yds. The wreckage of another boiler fell through the roof of the fitting and smith's shops, and bricks from the boiler-house rose into the air as high as the works chimney shaft. The absence of personal injuries was due to the circumstance that the explosion took place at an hour when nearly all the men were away from work. Our readers may usefully bear in mind the point that in hospitals, infirmaries, workhouses, and other public buildings the inmates are never removed entirely from the danger zone, and in many existing institutions are quite close to its centre.

Excavations at Sparta. THE *Times* of Saturday last contained an important article by its correspondent in the Balkans on the excavations at Sparta, conducted by the British School at Athens.* In the course of a detailed summary of the results since the campaign of 1906 the writer properly calls attention to the growing importance of the Mycenæan remains and their possible identification with a Homeric Sparta in their association with the so-called "Menelaion," the chief fruit of the year's research. It is probable that this may, after all, constitute the chief value of the Sparta excavations as a whole, because perhaps nothing is of more absorbing interest in archæology at present than the lining up of Early Greece and even Italy with the great new Cretan standpoint. The *Times* article, however, does not note one other valuable result from Sparta, the finds of ivories, which will probably take a truer place later on, and be given the importance in the history of Art that they deserve; neither does it note the usefulness of Sparta as a centre for research other than classical, in providing scope for Mr. Traquair's important studies in Frankish Art. We await the next volume of the School "Annual" with interest.

Proposed Monument to Newcomen and Watt. A CIRCULAR issued by Mr. Octavius D. Deacon invites the co-operation of all who appreciate the services rendered to

* See also the *Builder* of August 10, 1907, and Supplement of October 10, 1908.

humanity by Thomas Newcomen, who invented the first practical steam engine, and by James Watt, who added the double-acting piston and the condenser. Until comparatively recent times there has always been a predilection for honouring men gifted with unusual talents for the destruction of their fellow creatures, the demolition of buildings, and the eradication of friendly relations between races and nations. More lately the world has begun to realise the truth that men who design engines, machinery, buildings, and important structures are worthy of some honour as public benefactors, although, of course, not to the same extent as those individuals who confine their efforts to destructive work. We should be glad to witness the more complete vindication of beneficent professions, among which engineering and architecture are justly classed, and for this reason we are in full accord with the proposed monument to the men by whom the steam engine was first brought into practical shape. It is stated that the form of the monument, to be erected in London, will be left for the ultimate decision of the contributors. Its dimensions will necessarily depend upon the magnitude of the response made to the present appeal.

Richmond Green and the (Old) Theatre.

A TABLET has been fixed upon the gates of Garrick House, Richmond Green, to mark the site as being that of the (old) theatre, pulled down in 1884, and of the adjoining house which Edmund Kean inhabited when lessee, and then proprietor, of the theatre and wherein he died, 1833. A similar tablet has also been affixed on Asgill House to commemorate the site of the Palace of Sheen. Asgill House was built for Sir Charles Asgill, Bart., after designs by Sir Robert Taylor. An adjoining plot of the palace site was taken for the house built for George, third Earl of Cholmondeley, which the Duke of Queensberry subsequently occupied. A description of that house and of fashionable life of the time at Richmond will be found in some letters written by George Selwyn in 1782-90, and preserved in the MSS. at Castle Howard. Kean's house and theatre stood within the precincts of the palace, rebuilt by Henry V., which many of our sovereigns inhabited until the close of the XVIIth century. The theatre was built in 1766 by Mrs. Horne for her relative, James Dance, the actor, under Garrick's directions and superintendence. Dodsley mentions an earlier playhouse, 1715, on the site of the later York-place. That should not be confused with the unlicensed house at the hill-foot which Cibber disguised as the "Cephalic Snuff Warehouse." We should point out that the theatre on the opposite side of the Green, near Quadrant-road, was built ten years ago, Mr. Frank Matcham being the architect.

INSTITUTE BUILDINGS, BRISTOL.—Extensions have been made to the Shaftesbury Institute, St. Philip's. The new buildings are of red brick, having moulded plaster windows, in keeping with the original structure, and altogether the additional accommodation amounts to nine or ten rooms. The work has been carried out under the direction of Mr. Ernest Tribe. The plans were prepared by Mr. Frank Wills, and Mr. R. F. Ridd has had charge of the building work.

THE ANCIENT AQUEDUCTS OF LYONS.

THE aqueducts erected in Roman times for the supply of Lyons with water have lately been the subject of special investigation in two works by a French writer,* M. Germain de Montauzan, who has a rather unusual qualification for treating such a subject in the fact that he is at once a doctor of letters and a mining engineer, and therefore is able to combine technical knowledge of problems of construction with the study of the remains of antiquity and of the classical texts—a knowledge which the archæologist and the classical scholar too often lack. Having visited, too, as a preliminary the aqueducts of Rome and Tunis, he is able to make comparative observations of considerable value. But the main interest of the first work is the elaborate and careful description of the four aqueducts which supplied the city of Lyons in Imperial times. As a result of minute investigations on the spot, often combined with accurate levelling, he has been able (following the MS. map of Delorme, who, in the XVIIIth century, had already fixed their course with considerable approximation to the truth) to establish the course of each of them, and to determine the object of the remains which exist. In the historical introduction (Chapter I), which contains, by the way, a useful plan of the scanty remains of Roman Lyons, he places them, mainly on *a priori* grounds, in the following order:—Mont d'Or (Agrippa), Craponne (Augustus), Brevenne (Claudius), Gier (Hadrian). Some lead pipes bearing the name of Claudius have been found on the hill of Fourvière, the site of the old Forum, and an inscription proves that the Gier aqueduct cannot be later than Hadrian.

Of the first three of these aqueducts scanty remains exist; the first had one or two siphons, but hardly anything of them is left; the only conspicuous ruins of the second are the so-called "tourillons de Craponne," two pillars about 40 ft. high, with the lower part of several others on each side of them, which supported a reservoir between two consecutive siphons; while the third, which had one siphon, is remarkable mainly for the two abrupt drops in level, without any compensating rise, of 73 metres in 750, and of 90 metres in 2,500, which occur along its course. The fourth is by far the longest and best preserved, and a considerable number of its bridges exist. Of these no less than four were siphons—really inverted siphons—and in no aqueducts of ancient times do these play so important a part as in those of Lyon. The first of them has a depth of nearly 83 metres, and there is a drop in level of some 6 metres after the siphon. The reservoir from which it started is preserved, and we find that, in order to distribute the pressure, the water, entering in a channel 0·58 metre wide, was made to flow into ten (later nine) lead pipes, in which it was carried over the siphon. Beyond this are several ordinary bridges—all in *opus reticulatum* with brick (or stone) bands and quoins—for the other aqueducts small cubes of stone form the facing to the concrete—then a second siphon, then a long line of substructions and arches alternating, and then an almost uninterrupted line of 551 metres of arches running up to the reservoir which forms a starting-point for a third siphon. This, the siphon of Beaunant, is the best preserved and the deepest of all; the depth is 123 metres, the length 2,612 metres, and the net fall in level 9·263 metres. It is easy to see that the construction of a bridge to span this enormous depression would have been an almost impossible undertaking, while the detour necessary to avoid it would have been considerable. A fourth siphon soon brought the aqueduct into Lyons. It must be remembered that the level at which it had to enter the Roman city on the Fourvière hill is 300 metres above sea level and 120 above that of the Saône, which runs at its foot. In the construction of the aqueducts of Rome no such considerable depressions as that of Beaunant were met with; and the use of arches on the last stretch into Rome is rightly attributed by our author to considerations of economy. The enormous quantity of lead which would have been necessary (for the Romans were unable to manufacture pipes of a large size capable of resisting a high pressure) had a siphon of several miles in length been established,* would have been far more costly than the stone of which the long line of arches were actually made, which was quarried on the spot. There was, further, the advantage that one set of arches was made to carry two or three channels.

After a short description of the two aqueducts which are supposed to have supplied the peninsula between the Rhone and Saône, where the altar of Rome and Augustus stood (that of Cordieu being really a drain, and that of Miribel not earlier than the VIth century A.D.), we pass to the more general section of the book, in which the aqueducts of Lyons are studied in comparison with similar monuments elsewhere. Chapter III. deals with the collection of water for the aqueducts, their levels, and the use of siphons. We find that the mean fall of the aqueducts of Rome (1·45 per 1,000 for the Aqua Claudia) and of Lyon (1·11 per 1,000 for the Gier aqueduct, 3·59 per 1,000 for the Mont d'Or aqueduct) is in excess of that of several other ancient and modern aqueducts in France. For Rome this is easily explained. Even as things were, the channels were much fouled by deposit, and the evil would have been much increased had the flow been less rapid; while at Lyons, though the water was far more pure and, indeed, without deposit, the section was much smaller. As to siphons, we find that Vitruvius mentions them only as forming part of a continuous line of pipes, and says nothing about the necessity of additional thickness to resist pressure.

Chapter IV. deals with styles of construction in general; and here, and here only, we meet with points to which exception may be taken. Thus it is doubtful whether *opus spicatum* of such regularity as that shown in the upper part of Fig. 92, p. 231, is ever met with as the facing to a wall, though it is frequent enough in pavements; the facing of Roman brick walls is not "nearly always" composed of triangular bricks (p. 238), nor is the Pantheon, as we have it before our eyes, the building of Agrippa (p. 240, n. 1). It is interesting to note various points which our author brings out—that we have no means of knowing how the lead pipes of the siphons were placed on the bridges; that there is relatively much less material used in the Gier aqueduct than in those of Rome—a fact which our author takes as a further argument for dating it to the reign of Hadrian, when greater experience in such constructions had been acquired; that the cement of this aqueduct offers a far greater resistance to actual pressure tests than the best modern mortars (specimens from the other aqueducts of Lyons and from the Anio Novus at Tivol were too much weathered to give certain results, but, even in this condition, were not inferior to modern ordinary mortar), and was equivalent in this respect to hydraulic lime mortar; that tunnelling, in the aqueducts of Lyons, is comparatively rare, cut and cover work being preferred, while in the aqueducts of Rome, owing to the different nature of the country traversed, it is far more frequent.

Chapter V. deals with the distribution of the water. At Lyons, owing to its purity,

---

* *Les Aqueducs Antiques de Lyon; Étude Comparée d'Archéologie Romaine.* Pp. xxiv, 440, five plates, and one plan. 20 francs; and *Essai sur la Science et l'Art de l'Ingénieur aux Premiers Siècles de l'Empire Romain.* Pp. xviii, 124. 7 francs. By C. GERMAIN DE MONTAUZAN. (Paris: Leroux, 1909.)

* In saying twenty kilometres he overestimated the distance; ten is nearer the truth.

Digitized by Google

filtering tanks were not necessary; and the two cisterns existing on the Fourvière hill are not the distributing cisterns, which excavation is needed to discover. The volume of water can be approximately calculated for the Gier aqueduct from the siphon pipes, at 1,000 cubic metres per hour, while for the others it cannot be ascertained as its height in the channel is not known.

Chapter VI. deals with the administration of the aqueducts, personnel, regulations, finances, etc.—very largely *a priori* and by analogy, inasmuch as we have little direct knowledge of these details for the aqueducts of Lyons. Indeed, the only piece of direct evidence is a cippus found along the course of the Gier aqueduct, bearing the inscription *ex auctoritate Imp(eratoris) Cæs(aris) Traiani Hadriani Aug(usti), nemini arandi serendi pangendivi ius est intra id spatium agri quod tutelæ ductus destinatum est*—"by the authority of the Emperor Cæsar Trajanus Hadrianus Augustus, no one has the right to plough, sow, or plant within the area which has been reserved for the protection of the aqueduct." We may note further that, despite the comparative audacity of their construction, the repairs to the aqueducts of Lyon are comparatively unimportant; the case was very different with those of Rome. At the end of the book are five plates—a reproduction of Delorme's map, a map showing the course of the aqueducts as traced by the author, and longitudinal sections of all except that of Craponne.

It will be found that, as is the French style, the picture has been filled in, especially in the last two chapters, by a good many general considerations, *a priori* reasonable, but not demonstrably true in this particular case, which, however, add considerably to the interest of the book for general readers.

To the care with which the detailed investigation of the courses of the aqueducts and the minute examination of their remains have been conducted nothing but praise is due; and, as has been said, it is especially fortunate that the author possesses the technical knowledge which enables him to understand the engineering problems which lay before their constructors.

The second and smaller work is intended by its author to be complementary to the first—"to define the scientific knowledge which, during the first centuries of the Roman Empire, was within the reach of the engineer who was intended to direct public works, and the technical training which rendered him capable of doing so in practice." It is clear that, in the matter of scientific theory, Rome owed everything to Greece, and the advance that she made was mainly in the direction of the practical application of given laws. The arithmetic of both nations was cumbrous, and calculation must have been difficult without an abacus, the convenience of which was perhaps the obstacle to the use of the zero (p. 29, n. 2).

The most important instruments for measuring and levelling which the ancients had at their disposal were the *groma*, for drawing perpendicular lines, the *dioptra*, which could be used for the measurement of both horizontal and vertical angles, being combined with a water-level, and the *chorobates*, a somewhat cumbrous form of waterlevel, which was, however, preferred by Vitruvius for levelling aqueducts, probably because it involved no sighting.

In mechanics the ancients had comparatively little theoretical knowledge, and, as our author says, must have solved such problems as the transportation of an obelisk by the multiplicity of the elements of traction employed (themselves comparatively simple), and the ingenuity displayed in their arrangement.

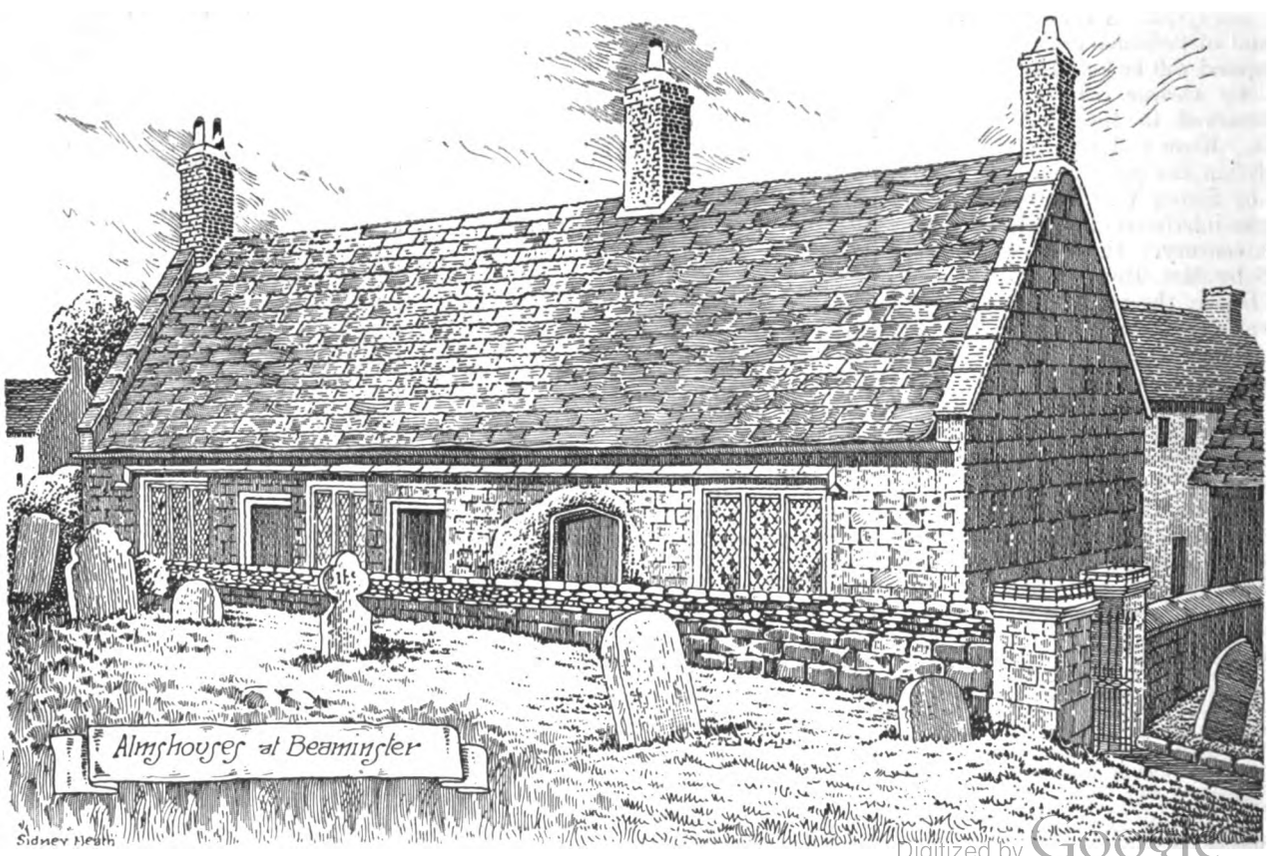
While the first of these books is a valuable work of original research, the second is mainly a useful summary of our knowledge on the subject; and on both of them M. de Montauzan is to be congratulated.

ALMSHOUSES AT BEAMINSTER.

BEAMINSTER, the "Emminster" of Thomas Hardy's novels, is the most delightful town in West Dorset, charmingly situated in a valley upon which fall the shadows of the twin hills of Lewesdon and Pillsdon Pen. The town lies equidistant (six miles) from Crewkerne n the north and Bridport in the south, and has no railway; communication from the outer world being by coach, a blessing for which lovers of an unspoiled old town are very grateful. The chief glory of the place is its Perpendicular church, with a tower as fine in conception and as rich in well-wrought figures and mouldings as any to be found in the neighbouring county of Somerset. As a general rule, the churches of Dorset are vastly inferior in workmanship to those of the sister shire, but Beaminster is a charming and quite noteworthy exception. The beautiful manor-houses of Parnham and Mapperton are in the immediate environs of the town, while a short distance away is Racedown Lodge, the house for a time of the poet Wordsworth. As one would expect, this little town has retained a good number of its smaller domestic buildings, among them a set of almshouses, the front of which is almost hidden from view by the high ground of the churchyard. This building was erected and endowed in 1630 by Sir John Strode, of Parnham, on the site of an ancient chantry house, and this no doubt explains its somewhat peculiar position. The founder directed that six poor persons of Beaminster, or elsewhere, should inhabit it. On one of the stones is this inscription:—

GOD'S HOUSE
SIT HONOS TRINO DEO
ANNO DOM
1630.

SIDNEY HEATH.



THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

AN Eastern Counties district meeting of the members of the Association of Municipal and County Engineers was held in the Guildhall, Lincoln, on Saturday, September 25. Mr. W. Nisbet Blair, M.Inst.C.E., of St. Pancras, President, was in the chair, and among those present were Messrs. E. P. Hooley (Nottinghamshire), J. Thropp (Lindsey, Lincolnshire), W. B. Purser (Kesteven, Lincolnshire), R. A. MacBrair (Lincoln), E. J. Silcock (Westminster), W. Weaver (London), H. J. Whyatt (Grimsby), J. Clare (Sleaford), A. Beaumont (East Yorkshire), W. J. Hadfield (Sheffield), T. Henry (Retford), J. Saunders (Newark), J. Southwait (Rothwell), J. W. Kennedy (Retford), C. H. Waite (Penang Straits Settlement), Julian Julian (Cambridge), and F. J. Dixon (Ashton-under-Lyne).

The Mayor (Mr. W. S. White) heartily welcomed the members of the Association to Lincoln. They were, he said, proud of

Digitized by Google

Lincoln from its cathedral to the busy part it played as a commercial centre.

The City Sheriff (Captain H. E. Newsum), who also welcomed the Association, was glad of the opportunity to pay a tribute to those members of their Association who had served Lincoln most excellently. Ancient as Lincoln was, it was modern and up-to-date in everything which affected the sanitation and social comfort of the community.

The President expressed appreciation of the reception given them by the Mayor. As to the surface contact system of electric traction, on which they had a paper, whether it was a failure could best be proved by a full trial in Lincoln than by a few months' experiment in London.

On the proposition of Mr. W. B. Purser (Kesteven), seconded by Mr. Clare (Sleaford), Mr. MacBriar was re-elected Honorary Secretary for the Eastern Counties district.

The "G. B." Tramway System.

Mr. S. Clegg (City Electrical Engineer) presented a paper on "The 'G. B.' Tramway System and its Results in Lincoln." He said that when the question of electric tramways first came before the Lincoln Council in practical form it was not his intention to recommend any system but the overhead. The Tramways Committee, however, were of opinion that the overhead wires would spoil the appearance of the cathedral city's streets, and were prepared to pay some little extra to avoid this eventuality. They therefore instructed him to report on the question of surface contacts, and after viewing the Lorain at Wolverhampton, which at the time was the only system running under ordinary service conditions in the country, and an experimental length of line which the "G. B." Surface Contact Company had laid down at Ilford, it was decided, chiefly on the question of capital cost and the desire to avoid a slug which for its working had to be raised above the level of the surrounding roadway, to adopt the "G. B." system.

The cable through which the current was transmitted from the power-house consisted of galvanised-iron wires stranded together on a jute core, over which were threaded galvanised-steel sleeves, which made a smooth face for the carbon contacts to bed on when required. Access-boxes were placed at intervals along the track through which the cable could be drawn for inspection. The conduit in which the cable was carried consisted of sections of ordinary glazed vetrified 5-in. stoneware pipe. The total depth of excavation necessary did not exceed 18 in. The insulators which carried the cable were of the roller pattern. The galvanised-steel pins, on which the insulators were mounted, passed through the conduit on one side, through the hole in the centre of the insulator, and into a stopped hole on the other side of the conduit. The ends of the pins which projected through the conduit were connected together by means of a galvanised-iron strip, which was connected at intervals to the rails. This device guaranteed that no stud could ever become "live" in consequence of leakage over the insulating surface separating the source of supply from the stud. This immunity from a defect which had been a source of trouble in many surface contact systems resulted from the fact that any current leaking from the source of supply was bound to pass into the metal pin on which the insulator was mounted, and thence through the connexion to the rails, thus completely shielding the stud from leakage currents.

The studs had cast-iron heads, the top surfaces of which were level with the rest of the paving. They measured 2½ in. by 10 in., and were supported by granite blocks, recessed to receive them.

The magnet was suspended rigidly from the car. The coils and the battery were connected so that when the motors were taking current their current, when small, assisted the battery in exciting the magnet, and when large also recharged the battery. In this way very little charging was necessary, as the batteries were discharging and charging alternately while in service.

The collector consisted of a chain of iron links punched on a wire rope fixed at each end, and spring suspended within one pole of the magnet, the bottom face of which moved over the stud head.

When the question of a stud system was first mooted, one of the principal objections raised against its use was the question of live studs. During the first twelve months, mostly owing to defects in detail in the original construction, a total of seventy-one live studs was recorded, or an average of 1·4 per week. This figure had been gradually reduced, especially since the summer of 1908, when the old type of cable had been completely replaced. Their present average was about three live studs per month.

In comparing the "G. B." with the overhead system, Mr. Clegg said it must be admitted that the "G. B." system was not as cheap to install as the overhead, but in those towns where there was objection, on æsthetic reasons, to the overhead wire, it did not seem that 10 per cent. on the cost was a large amount to pay.

The Lincoln tramways compared very favourably in their maintenance cost with those on the overhead system. The working costs for the three complete years the system had been in operation had been 1906-7, 6·698d. per car mile; 1907-8, 6·10d. per car mile; 1908-9, 5·60d. per car mile. The average total working costs of seventy-five other municipalities was 6·37d. per car mile run, showing an advantage for Lincoln of 0·77d. per car mile.

As to reliability, he considered he could claim the advantage. During the whole time the tramways had been running the current had never been off for any part of the line owing to failure of the electrical equipment (apart from the feeders), a claim which few overhead systems could make.

On this account also it would be interesting to mention that, apart from unusual snowstorms, a total of only 215 car miles (or 0·039 per cent. of the total car miles run) had been lost in the three years; of this total 88 per cent. was due to faults on the cars, and 12 per cent. to the melting out of the main feeder from its socket in the feeder pillar.

He considered that with the working of the "G. B." surface contact system there was less danger to the public from shock and personal injury than there would be with the overhead system, as studs which had become alive at Lincoln had always been located as soon as they occurred, without danger to anyone, whereas with the overhead system it was quite possible for a wire to break without giving any warning that inspection could safeguard against.

In times of exceedingly snowy weather the "G. B." system was at a slight disadvantage as compared with the overhead, owing to the fact that it had not only to make its contact with the rails, but also with the studs through the snow, and a car could get along much better with a poor rail than with an inferior supply.

Speaking generally, if nothing was to be taken into account except first cost, the overhead system would probably still hold the field, but he considered that a system like the "G. B.," with its many advantages, must have an interesting future.

Mr. Gilbert Whyatt (Grimsby), who proposed a vote of thanks to the author, said he would like to ask what was the difference in the problem between London and Lincoln, as the "G. B." system was a success there, and from the sparse reports in the provincial papers apparently a failure in London.

Mr. W. Weaver (London) asked whether there were any trees on the tramway route, and if so whether there was any danger of short circuiting from leaves falling on the studs. He also wished to know if any difficulty was experienced from the studs on the occasion of a snowfall.

Mr. W. B. Purser (Kesteven) said the system seemed to him to be one which, if perfectly safe, would be adopted in other towns.

Mr. Thropp (Lincolnshire) called attention to the sparking on the rails from the overhead system of electric traction.

Mr. W. J. Hadfield (Sheffield) said the sparking was probably due to dirt on the rails.

The President pointed out that underground systems of electric traction often involved considerable and costly alterations to the pipes already in the roadway. He would like to know if there had been any accidents from live studs in the streets. The safety of the system depended upon the spring at the bottom of the stud, and whether by process of rusting or frictional resistance there was a live stud. He thought that was the weak point of the system.

Mr. Clegg, in replying to the discussion, said that Mr. Whyatt had asked why the "G. B." system as installed in London did not work satisfactorily. At present the question was *sub judice*, and it would not be advisable to make any remarks upon it. They had not any trees on the tramway route, but they had experienced all sorts of obstacles; they had tried wet and muddy paper, and had never found anything which would prevent the magnet finding the stud head. There was, however, one serious obstacle, and that was ice on the studs, and a heavy fall of snow was a difficult matter for all systems. The "G.B." system could claim to be as economical in operating expenses as the overhead. The spring which the President regarded as the weak point of the system had not been so.

Main Roads of Lincolnshire.

Mr. J. Thropp, M.Inst.C.E. (County Surveyor Lindsey Division of Lincolnshire), read a paper on the main roads of Lincolnshire. After giving a history of road maintenance in the county, he said that tar macadam had been laid in some of the urban districts, and also on two district main roads; the Gainsborough Rural District Council had laid 4 miles on their portion of the Lincoln and Kirton-in-Lindsey road, and of which motorists spoke very highly. Without being sanded this road was very dangerous in winter on sharp frosty mornings. The tar and macadam varied in cost from 1s. 6d. to 2s. 2d. per yard super.

Their steam-rolled roads had cost from 7½d. to 1s. 6d. per yard super.

The cost of all the main roads (urban and rural) per mile had varied from 54·16*l.* to 86·94*l.*

The heavy locomotive traffic was causing great expense in some cases. A farmer in Midville arranged to deliver his potatoes by a traction engine and two trucks to Eastville railway-station, a distance of about 4 miles, chiefly over ordinary fen roads, which it damaged so seriously that the Spilsby Rural District Council brought an action for 720*l.* damages at Lincoln Assizes, but were only awarded 75*l.* by the jury. The same traffic passed over nearly half a mile of steam-rolled main road near Eastville Station without doing any damage, so that the County Council could not join the district Council as plaintiffs in the action.

The County Council had, however, suffered heavily on the main road between Louth and Grimsby in consequence of a commercial firm transferring their traffic between Louth and Grimsby from the railway to the main road. They brought coke and other goods by a steam traction engine and two trucks, weighing altogether about 40 tons, from Grimsby to Louth daily. The cost of repairs and steam rolling for 1907 and 1908 had been 7,105*l.*, and would continue to be very expensive, as the traffic still continued; the usual cost had been about 1,000*l.* per annum. Litigation was threatened, but a compromise was accepted by the County Council of 500*l.*, and an undertaking to use the road fairly,

Digitized by Google

and to stop the traffic on the breaking up of a frost, at the request of the County Council, or the Louth Rural District Council on their behalf.

They were having steam lorries weighing when loaded about 4 tons, with a trailer 6 tons, in different parts of the county, but they did not do much harm; neither did they find any serious damage arising from the haulage of road material for road maintenance, or for farmers' threshing-machines and produce by traction engines, because it was not continuous day by day.

Motor-cars did not do much harm to the roads in Lindsey; certainly they caused very much dust, and to that extent they were a nuisance. As, however, they had come to stay, they would have to arrange to prevent dust if the Local Government Board would assist. Until the time came when the Government provided the money the country rural districts could not undertake the construction of alternative roads for passing round villages, or the substitution on a large scale of tar macadam or paved roads instead of ordinary macadam.

The geographical position of Lindsey cut it off from the great lines of communication by road, river, and railway between the north and south of England.

On the north the wide estuary of the Humber barred all progress except by ferry at New Holland. As the coal, steel, and ironstone undertakings extended round Scunthorpe, the demand for a tunnel under or a bridge over the Humber would have to be conceded by the Government; if this were done the development of Lindsey would proceed by leaps and bounds.

One of the effects of the insularity of Lindsey was that the through traffic of the Great North road passed through Kesteven, Nottinghamshire, and so on to York and Scotland, and to pass into Lincolnshire it must be done by one of the bridges over the west or south boundary.

The attractions of the county were not great. Lincoln, with its cathedral and interesting Roman remains, was foremost. They had a few remains of ancient abbeys which at one time were beautiful and extensive in their surroundings. That of Bardsey, 9 miles from Lincoln, was now being laid bare from its grass-covered grave for inspection by the Royal Archæological Institute, through the energy of the vicar, the Rev. C. E. Laing, who had worked hard to collect the money for the purpose. Thornton Abbey and Goxhill Priory were in ruins, but most interesting. Tattershall Castle, belonging to Lord Fortescue and built by Ralph, fourth Baron Cromwell, treasurer to Henry VI., was one of the finest specimens of brickwork to be seen anywhere. Somersby Rectory, the birthplace of the late Lord Tennyson, and the adjoining Manor House are an attraction. The district around Somersby is lovely—indeed, a miniature Peak district from the foot of Keal Hill to Grimsby. The great steel works at Scunthorpe, but lately evolved from a purely agricultural district, with its furnaces and growing population, demand more than a passing notice. Grimsby, with its docks and fishing fleet, and Immingham, where a new dock was being constructed, and which might be called upon to accommodate some of our ironclads in the future.

These were some of the interesting places and localities which might attract motorists to Lindsey; but when they came they might well ask what sort of roads would they find. Had they come in 1879 the motor-cars would have been of no more use than a London brougham of that time—because they would not fit the ruts; now they had neither ruts nor loose stones in the summer time on all their principal roads. They would find the roads dusty, but at present they could not afford to pay 40*l.* per mile for tarring the surface of roads, although it was unquestionably desirable.

Empirical legislation had much to answer for for the condition and management of our highways—instead of the word "shall" forming the leading point of a clause, the word "may" had been adopted, and therefore used to its utmost limit.

The immediate future of road legislation was interesting to the public and to all concerned in the management of roads. They did not know what the Government would do, but from the forecast of the Development Bill they might perhaps see new roads constructed for motor traffic, without speed limits, between large cities, and toll-bars placed to charge traffic coming from adjoining private roads to use the motor road. Also it was proposed to improve old roads. This would probably mean the alteration of roads at right angles to each other by rounding the corners, and pulling down buildings which might be an obstruction, altering the gradients where necessary, lowering bridges and their approaches, and increasing the width of narrow roads.

If the Government in their proposals would require, where practicable, that the road authority should secure a minimum width of 20 ft. of metalled surface on every arterial or main road, it would cause a greater degree of safety to motorists and other traffic than existed at the present moment.

Mr. Hooley (Nottinghamshire) proposed a vote of thanks to Mr. Thropp for his paper, and congratulated Lincoln on having kept at least one set of poles out of the streets. In the district he had to supervise there were all manner of obstructions on the roadside. Half the difficulty of road maintenance would be obviated if it was possible to let the county councils do all the work they were intended to do and not delegate their work to men who were of inferior ability in road maintenance.

Mr. W. J. Hadfield (Sheffield) remarked that the author had referred to the class of men employed on the roads. That was a matter which affected all of them. In the country districts a man worked partly on the farms and partly on the roads, and when he was worn-out for anything else, he was regarded as the right man for road-making. He agreed that the cost of tar-spraying was 40*l.* a mile, but it led to economy in watering and maintenance.

Mr. T. Henry (Retford) thought it gave greater satisfaction to the ratepayers if the roads were maintained through the Rural District Councils.

Mr. Parker (Gainsborough) said it was unique that to get out of the county of Lincolnshire to Nottinghamshire or Yorkshire they had a toll to pay. He did not think there was any other case where they could not get from one county to another without paying a toll.

Mr. Thropp replied to the discussion. He said that tar-painting costing 40*l.* a mile would be a very serious matter to a rural district like Lincolnshire. It would mean putting 50 per cent. on to the cost of the roads, and they could not do it unless the Government would help them.

The members were entertained to luncheon by the Mayor at the Saracen's Head Hotel, and in the afternoon visits were made to the abattoirs, the cathedral, the tramways, and the electricity station.

THE IRON AND STEEL INSTITUTE.

TWO PAPERS of direct interest to our readers were contributed this week to the Iron and Steel Institute by Mr. J. Newton Friend, Ph.D., M.Sc. In the first, on "The Corrosion of Iron," the author discusses briefly the acid and electrolytic theories of corrosion.

According to the former, pure water, oxygen, and iron may remain in contact with one another for an indefinite period without the formation of rust, the presence of some acid to act as catalyser being absolutely essential to the commencement of oxidation. As carbonic acid is generally prevalent in air and water, that acid usually acts as the catalyser, forming ferrous carbonate, $FeCO_3$, or perhaps the soluble ferrous hydrogen carbonate, $FeH_2(CO_3)_2$. As the compound formed readily gives up carbon dioxide, the acid is again liberated to continue its destructive work, and so an infinitesimal proportion of carbon dioxide in the presence of water and oxygen is capable of converting an indefinite amount of iron into rust.

According to the electrolytic theory of corrosion, the presence of an acid is not essential to the oxidation of iron; liquid water and oxygen alone being essential. It is assumed that pure water is ionised to a small but definite extent, and that when a strip of iron comes in contact with it, positively charged iron ions are sent out into the water. Hydrogen ions simultaneously leave the liquid which then becomes virtually a solution of ferrous hydroxide, the addition of oxygen causing the ferrous iron to assume the ferric condition, with consequent appearance of rust.

It is not easy to decide between the claims of the two theories, particularly for the reason that conclusions can only be drawn in an indirect manner, leaving room for considerable uncertainty. Dr. Friend shows that in all experiments hitherto published, and purporting to prove that iron will rust in contact with pure oxygen and water, sufficient precautions have not been taken to insure the absolute removal of acid. His own experiments demonstrate the absence of corrosion if all trace of acid is removed from oxygen and water, and compel the author to regard the acid theory of corrosion as one supported by the balance of evidence: Dr. W. H. Walker, on the other hand, is a strong supporter of the electrolytic theory of corrosion.

The subject is virtually continued in the second paper, entitled, "The Action of Air and Steam on Pure Iron," wherein Dr. Friend describes a number of experiments pointing to the conclusions: (1) That pure iron combines with ordinary air and with air dried over phosphorus pentoxide with increasing readiness as the temperature rises; below 150° C. the oxidation proceeds too slowly to be detected readily; (2) that when pure iron is heated in pure steam at temperatures ranging from 350° C. upwards the metal becomes tarnished; (3) that the action of steam on iron takes place in two stages; comprising (*a*) the dissociation of the steam, and (*b*) the combination of the dissociated oxygen with the iron, and the consequent liberation of free hydrogen.

Mr. F. J. R. Carulla, F.C.S., read a paper on "Artificial Magnetic Oxide of Iron," a substance produced by yet another of the processes that have had their inception in England, but which have been developed abroad. To Dr. William Gregory, of Edinburgh, is due the credit of discovering the artificial production of magnetic oxide, while Dr. Wülffing has worked out its industrial manufacture from waste ferrous liquors. The object of this application is to produce a stable pigment for the protection of metallic surfaces. Our readers are aware that the coating imparted by the Bower Barff process is a magnetic oxide which affords complete protection against rusting so long as the film remains intact. Being of similar composition, the Wülffing magnetic oxide paint is equally valuable. The only thing against it seems to be that the colour varies, some batches being black, and others green, blue, or brown. This, however, is a minor drawback which can be got over by establishing a regular sequence of shades.

"Tests of Cast Iron" is the title of a paper by Mr. E. Adamson, by whom a series of tests was carried out in actual foundry practice, the metal used being taken from ordinary mixtures. The object of the author was not to secure the highest possible results, but to account for the great variations

Digitized by Google

exhibited by tests of cast-iron at various times. From Table I., printed in the paper, we gather that the test bars which had been machined gave better results than bars tested with the skin on. Table II. points to the conclusions that the tensile strength of cast-iron is little affected by increasing the proportion of silicon from 1·67 to 2 per cent., and that decrease of strength may attend further increase in the percentage of silicon. The transverse bending tests indicate greater strength in the case of machined bars, a result that negatives the customary assumption that the skin of a test bar increases its resistance. As a good deal of discussion has taken place upon the temperature at which cast-iron should be poured, the author experimented with 10 cwt. of metal from the cupola by pouring it into five moulds at intervals of five minutes. The subsequent tests demonstrate the fact that the higher the temperature the greater the strength obtained.

An important paper by Professor H. F. Rugan and Professor H. C. H. Carpenter on "The Growth of Cast-Irons after Repeated Heatings" deserves careful study. It deals with the phenomenon which we commented on a few years ago in connexion with the Baltimore Fire. After that occurrence, examination proved that what had previously been accepted as good fire-resisting construction was really unsatisfactory owing to damage done to the masonry by "growth" of cast-iron members of the structure. Floor levels were destroyed and walls were forced out of the perpendicular in consequence of this peculiarity on the part of cast-iron. The object of the paper is to consider the bearing of experiments directed to the causes of the phenomenon, the results being of undoubted value, although leaving much to be learned, and not suggesting the probability of an early solution of the problem.

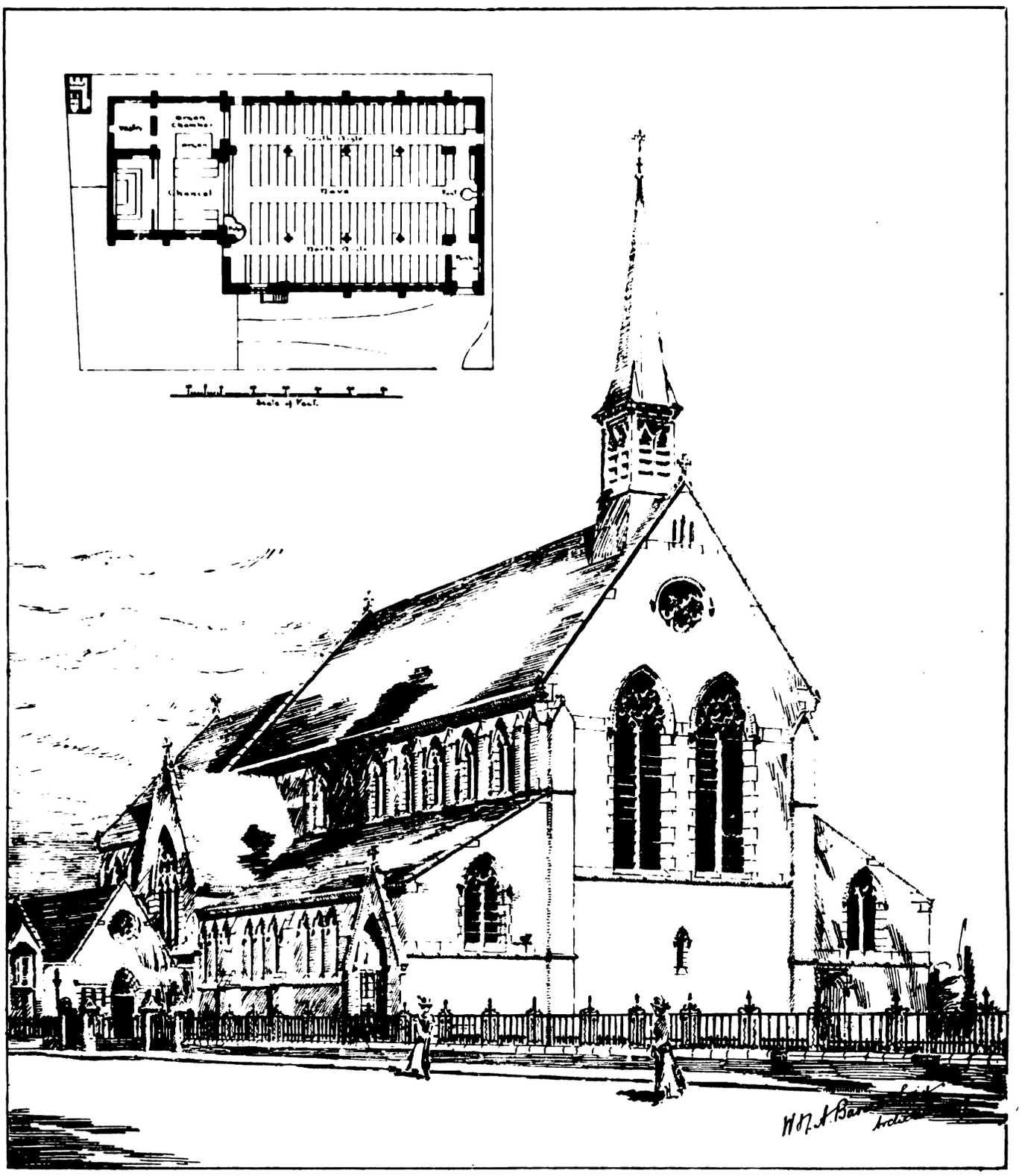
ST. PAUL'S CHURCH, PLUMSTEAD.

THE first portion of this church, designed by Messrs W. & C. A. Bassett-Smith, was built in 1901, and the second or western half is now nearly finished, and is to be consecrated on October 2. The materials used are red brick with Bath stone dressings and open-timbered roofs covered with green slates. The seating is executed in pitch-pine, and accommodation is provided for about 620 persons.

The total cost of the whole church will be a little over 7,000*l.*

The first part was built by Messrs. J. Longley & Co., of Crawley, and the present portion by Messrs. Chinchen & Co., of Kensal Green.

CHARLES A. BASSETT-SMITH.



St. Paul's Church, Plumstead. Messrs. W. & C. A. Bassett-Smith, Architects.

Digitized by Google

LONDON MASTER BUILDERS' ASSOCIATION.

THE usual monthly meeting of the Council was held on Thursday, the 16th ult., presided over by the President, Mr. F. G. Rice.

The President reported to the Council upon the visit of Belgian master builders to London, and the steps taken to make the visit a pleasant and useful one. Much gratification was expressed at the results, and the Council passed a vote of thanks to the President and Sub-Committee for their successful arrangement of the receptional dinner given to the visitors, numbering about 100, at the St. Ermin's Hotel, Westminster, when a good many members of the London Master Builders' Association and ladies were present. The following telegram received from the President of the Antwerp Association of Master Builders was read:—

"Dover Pier.
August 15, 1909.

To Mr. Rice, President London Master Builders' Association.

Before leaving England the Belgian Master Builders wish to send to your Association their brotherly salute, with the expression of their feeling of gratitude for your kind reception, which they will remember for ever.

HEISBAIN."

The Chairman of the Organisation Committee (Mr. F. Higgs) reported to the Council the recommendations of this Committee, which, after considerable discussion, were agreed to and instructions issued to give due effect to their adoption.

In response to an invitation from the President of the Quantity Surveyors' Association, the President (Mr. F. G. Rice), Mr. Frank May, Mr. Benjamin I. Greenwood, and Mr. G. Bird Godson were selected to represent the London Master Builders' Association at a Conference *re* Tendering Without Quantities Being Supplied, on Wednesday, October 13.

Legal matters of considerable importance to the trade were discussed and referred to the solicitor for consideration and report.

The Secretary reported that the new agreement between the National Federation of Building Trade Employers and the National Association of Operative Plasterers was signed by the respective delegates, with the following provision required by the Council of the London Master Builders' Association duly inserted —

"That it be an instruction in signing the Amended General Rules that it be done with the understanding with the Operatives that the present Rules between the L.M.B.A. and the N.A.O.P. be thereby not superseded."

The President called attention to the opening of the extension of the London County Council School of Building at Brixton.

A letter was read from the Carpenters' Company with reference to their Exhibition of Woodwork in 1910, and instructions given.

AN EFFORT IN SHOP ARCHITECTURE.

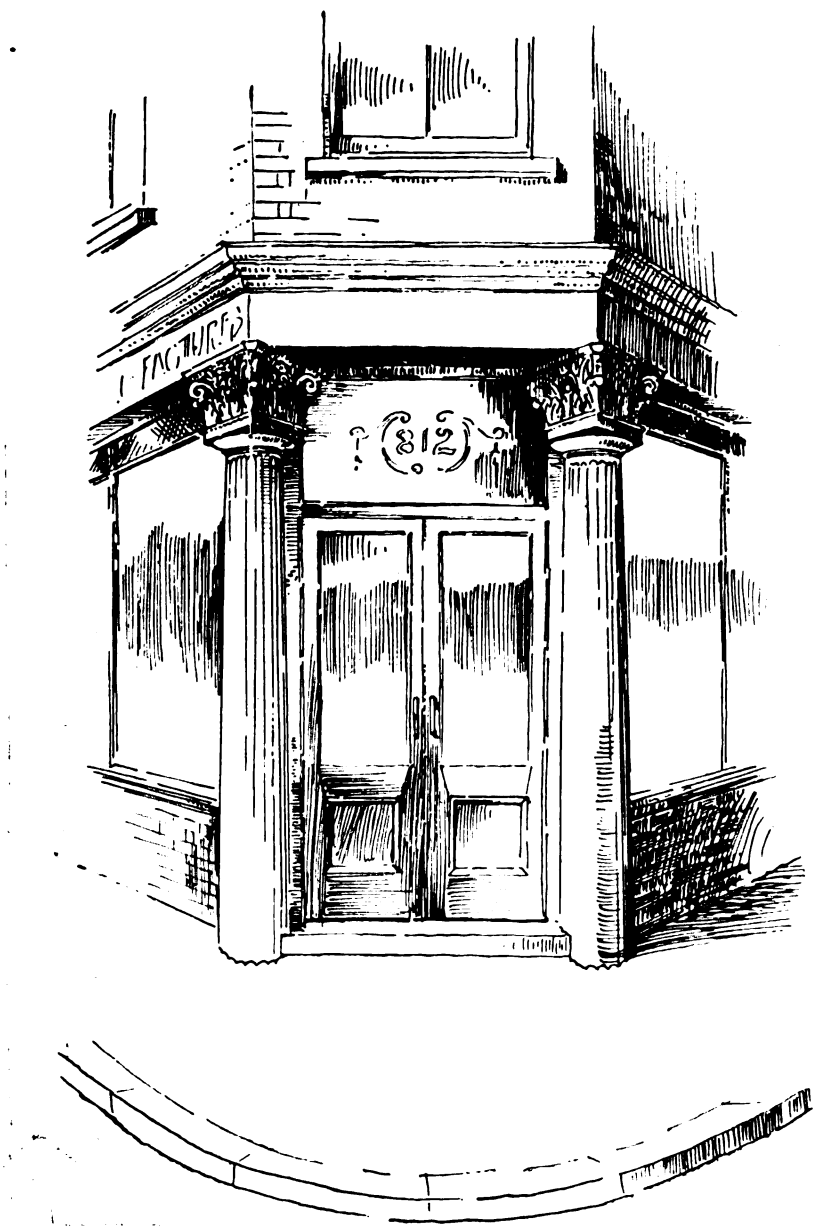
AN architect, who sends us the accompanying sketch, writes:—

"I came across the enclosed 'gem' of suburban architecture in a rather prominent thoroughfare along which the electric trams pass, and sketched it on the spot, thinking it would be of interest to your readers.

The carved caps are of stone, the Doric pillars are of iron painted and grained to look like oak, while the cornice and facia are of wood.

While so much time is occupied about preserving ancient monuments the most extraordinary buildings are erected in our midst. Is it not time more supervision was exercised over those buildings that are being erected to-day?"

We quite agree with our correspondent, but how the supervision is to be practically exercised is rather difficult to determine.



An Effort in Shop Architecture.

COMPETITION FOR A DESIGN FOR A FAÇADE TO No. 9, CONDUIT-STREET.

WE have often regretted that the central home of the architectural profession, at No. 9, Conduit-street, should not be represented externally by something of more architectural importance and significance than the existing rather prim piece of cement classicism. We have thought that it would be of some interest to invite some of the younger members of the profession to suggest what they could do by way of replacing the present façade with something of more monumental character.

The proprietors of the *Builder* therefore offer a first prize of twenty guineas and a second prize of ten guineas for the two best designs for a new façade to the Institute of Architects' house. We give the plans of the existing front wall, showing the walls or partitions abutting on it, for each story, and a skeleton elevation showing the position and area of the light openings.

The plans are mainly to show the thickness of walls, which must be assumed to be the same in the new façade; the details of recesses, etc., may be neglected. The window openings on the elevation are only intended to give the heights of windows and the area of lighting-space. The centres and the grouping can be altered if desired, with the reservation that no diminution must be made in the existing superficial area of lighting space.

All indication of the present architectural design is purposely omitted, as it is not desired to suggest any treatment founded on the present façade.

No new story is to be added; but the top line of the blocking can be raised or modified in outline in any suitable way that may be desired.

It is assumed that the uses of the rooms adjoining the front would be the same as at present, and it should therefore be borne in mind that the ground floor room is the Council room and the first floor room the Library, and the design should be treated accordingly. The fanlight over the entrance, or something equivalent, is necessary to light the hall.

The front is to be supposed to be in Portland stone; but any coloured surface decoration in tiles, marble, mosaic or otherwise, may be employed in suitable positions; or sculpture in bas-relief.

An endeavour should be made to convey in the design the idea that the façade is that of the central home of the architectural profession; to symbolise its special relation to architecture.

The basement story may be neglected in the elevation, as it is more important to show the balustrade on the street level, which should be of stone and form a portion of the design.

The design is to be shown on one drawing mounted on a strainer, containing an elevation to the scale of ½ in. to 1 ft., a section of the wall to the same scale, and a plan of the wall at each stage of the design. It is sufficient if the plan of the wall is profiled on part of the elevation.

The style of the architecture, and the

Digitized by Google

method of drawing, are left to the competitors; but if coloured materials are intended as part of the design, it must be shown in colour. If coloured material is not intended, the elevation may be shown in line or in monochrome.

Drawings on loose sheets of paper cannot be accepted, as they are inconvenient for hanging and for comparison.

Designs must be sent in to this office not later than 6 p.m. on Friday, December 17, addressed to "The Editor of the *Builder*," and marked on the outside of the parcel "*Builder* Competition." Affixed to each design there must be a sealed envelope containing the author's name and address, which will be numbered along with the drawing as received. No motto or distinguishing mark of any kind must be put on either drawing or envelope.

The two premiated designs will be published in the *Builder*. The Editor may select one or two other designs for publication, if thought desirable, and with the concurrence of the authors.

The two premiated designs will remain the property of the *Builder*, but the authors will receive twenty-five plates of each. The remainder of the drawings will be returned to their authors.

It is intended to exhibit the whole of the drawings if arrangements can be made for doing so.

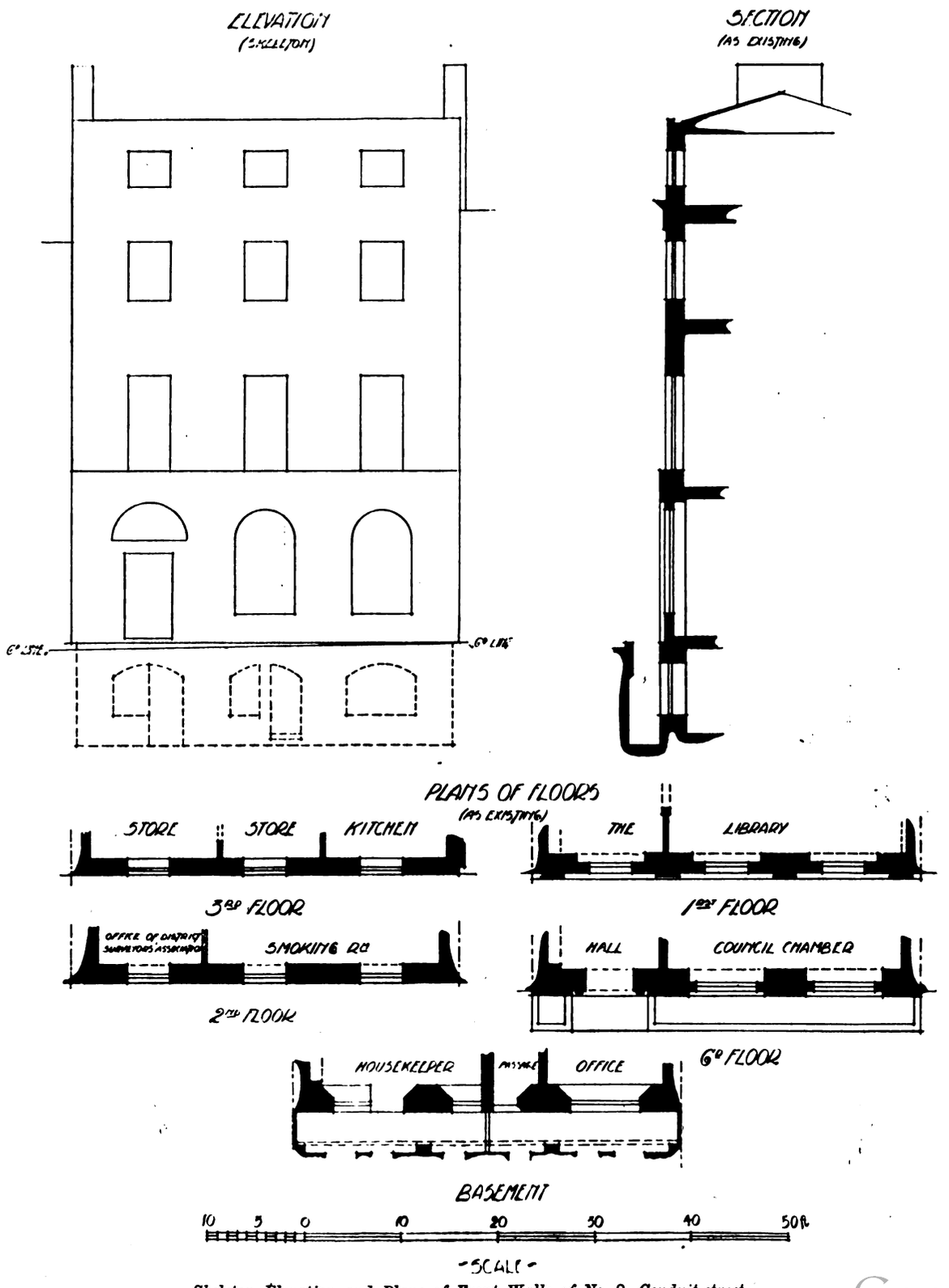
The Proprietors (as in a former competition) reserve the right to withhold the first premium in case the Assessors should be *unanimously* of opinion that no design of sufficient merit has been sent in.

The award will be made by the Editor of the *Builder* in conjunction with Mr. Halsey Ricardo and Mr. W. Curtis Green, who have kindly consented to act.

Questions (if any) can be asked, by letter only, up to Tuesday, October 19, and will be answered in the issue of October 23.

4, *Catherine-street, Strand, W.C.*

BAPTIST SCHOOLS, DOVER.—The foundation-stones have been laid of new Sunday-schools in connexion with Salem Baptist Church, Dover. The premises will comprise a school hall, 52 ft. by 32 ft., with eight classrooms, an infants' school, kitchen, and other buildings. Alterations have also been made at the rear of the chapel itself, and these will provide additional exits, and provide a room for the young men's class. Messrs. Worsfold & Hayward are the architects for the work, and the tender of Messrs. Hayward & Paramor was accepted, the amount of their contract being 3,067*l.* 10s.



Skeleton Elevation and Plans of Front Walls of No. 9, Conduit-street.

Digitized by Google

THE BUILDER

OCTOBER 2, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, OCTOBER 1.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. A. Wellesley Harris on "Duties of a Sanitary Inspector"—III. 7 p.m.

MONDAY, OCTOBER 4.

Society of Engineers (Room 18, Caxton Hall, Westminster).—Mr. G. Allan Thomas on "The Status of the Engineering Profession." Status Prize Essay for 1909. 7.30 p.m.

TUESDAY, OCTOBER 5.

Institute of Sanitary Engineers, Ltd. (Students' Lecture).—Mr. N. W. Hoskins on "Mechanical Physics." 7 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture by Mr. Banister Fletcher. I.—Introductory. (With lantern views.) 4.30 p.m.

WEDNESDAY, OCTOBER 6.

Institute of Sanitary Engineers (Sessional Meeting).—Mr. W. J. Dibdin, F.I.C., on "The Present Position of the Sewage Disposal Question." 8 p.m.

Builders' Foremen and Clerks' of Works Institution.—Ordinary meeting of the members. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. G. F. McCleary on "Methods of Disinfection." 7 p.m.

THURSDAY, OCTOBER 7.

Civil and Mechanical Engineers' Society (Caxton Hall, S.W.).—Presidential Address by Mr. W. N. Twelvetrees. 8 p.m.

FRIDAY, OCTOBER 8.

The Architectural Association.—Opening meeting of new session. President's Address. 7.30 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. G. F. McCleary on "Elementary Statistics." 7 p.m.

SATURDAY, OCTOBER 9.

Northern Architectural Association.—Visit to Denton Hall, Newcastle.

Incorporated Association of Municipal and County Engineers.—Home District meeting to be held at Winchester.

Illustrations.

CHAPEL FOR THE COMMUNITY OF THE RESURRECTION, MIRFIELD, YORKSHIRE.

THE chapel is to be built on the top of a hill which falls rapidly away to a valley, thus giving increased height at the west end, and affording opportunity for effective treatment. The plan comprises nave and choir with chapels radiating round the latter, and the necessary vestries.

Four great bays occupy the length from east to west, and these contain subordinate ones carrying a vaulted gallery following the lines of the ambulatory, which goes entirely round the church. Architecturally the building will be Cistercian-like in its simplicity.

It will be built of stone obtained from a quarry existing in the grounds of the community, coursed rubble being used for the main walling surfaces, with ashlar dressings. Internally, the walls will be plastered, and the roof vaulted in stone.

Screens forming the choir will be of marble and metal.

Cloisters at the east end will connect the chapel with the house and college. The total length of the building is 240 ft. The width of the nave and choir, 32 ft., and the height to apex of vault, 75 ft. The drawings were exhibited in this year's Academy.

W. J. TAPPER.

GRIMSBY TOWN HALL COMPETITION: SECOND PREMIATED DESIGN.

WE give the perspective view and two plans of the design by Messrs. Withers & Meredith which obtained the second premium in the competition for the extension of Grimsby Town Hall.

In explanation of their design, the architects write:—

"To give a concise idea of the accommodation required it is suggested that it may be divided under the following heads:—

(1) New Town Hall, committee-rooms, Council chamber, and Mayor's apartments, with Town Clerk's offices adjacent.
(2) Additional municipal offices, viz.:
  (a) Borough Treasurer.
  (b) Medical Officer.
  (c) Borough Surveyor.
(3) Courts building, containing three court-rooms with the officials' rooms in connexion therewith.

Taking into consideration the difficulty of utilising the existing buildings as far as practicable, the design has been arranged to concentrate each of these departments and to provide intercommunication wherever desirable. The "first" committee-rooms are *en suite* with the self-contained corridor. The Town Clerk's offices adjoin, and private stairs lead to the Mayor's apartments, Council chamber, and the large banqueting-room on the first floor. The Town Hall has four staircases, entered direct from the outside; the hall is on the first floor, and adjoins the Council chamber, etc.; it has ample cloakrooms, retiring-rooms, etc.

As to the second head, the Treasurer and Medical Officer are on the ground floor, with the Surveyor immediately over.

The third head provides police-court (with corridor from dock to cells), county court, and Registrar's court on three sides of a spacious "salle d'attente." The public enter direct from the street to their respective galleries, and in each case the judges' and stipendaries' rooms enter at the level of the bench.

It should be pointed out that the police offices, with rooms over, already exist, the new buildings forming a compact and uniform block, all corridors, etc., being reduced to a minimum, and every room being amply lighted and ventilated by the spacious internal area. Ancaster stone is suggested for the external facings."

BERKSHIRE COUNTY COUNCIL OFFICES: THIRD PREMIATED DESIGN.

WE give the elevation and two plans, and the detail elevation, of the design by Messrs. Wills & Anderson for the Berkshire County Council Offices at Reading, which obtained the third premium in the competition. In reference to their design the architects write:—

"The adoption of a side entrance is the keynote of this design, and appeared to be the most logical method of dealing with the site, considering that accommodation in the existing buildings had to be worked in to avoid splitting up any department.

The arrangement of the office complies with and literally follows the instruction issued.

The side and back elevations are strictly utilitarian, as from the confined areas on which they abut they could not be seen, and consequently a more elaborate treatment would be thrown away."

NOTES FROM FRANCE.

IT is proposed to demolish the large barracks at Paris which form annexes to Gabriel's Ecole Militaire, and spoil its architectural effect; and the Conseil-Général of the Seine has entered into communication with the War Department on the subject. The main building, relieved of these and other surroundings which encroach upon it, will then form the architectural climax to the perspective from the square of the Champ de Mars; and in place of the barracks, which occupy a considerable space, dwelling-houses of a superior type are to be built.

As the result of some excavations at Saulieu, near the ancient Roman road of Alise Sainte Reine, various remains of villas of the Gallo-Roman epoch have been discovered, as well as the remains of what is supposed to be a temple, with some well-preserved relics of mosaic.

The clock-tower connected with the Palais de Justice at Paris is at present in course of restoration under the direction of M. Tournaire. The tower, which is a good example of XVIth-century Renaissance, was built in 1585, but had already been subjected to a certain degree of restoration in 1852.

The French Government has finally decided to preserve intact the fine Hôtel de Rohan, in Rue Vieille du Temple, at present occupied by the Imprimerie Nationale. The building, celebrated for its carved woodwork and for the paintings which decorate the "Salon des Singes," will become an annexe of the Archives Nationales in the Hôtel de Soubise, with which it will communicate by a garden.

A monument has been erected at Verdun to commemorate the siege of the town in 1870. It is the work of M. Eugene Boverie, sculptor.

The death is announced, at the age of 74, of M. Jean Laborez, member of the Société Centrale des Architectes. He was a pupil of Saint-Père, Trouillet, and Daumet; and was collaborating architect successively with Questel, Nicolas Bailly, Charles Lucas, and M. Daumet, having acted under the last-mentioned architect in carrying out the buildings for the Communauté des Dames de Sion. He was architect of numerous buildings in Paris and in the Provinces.

QUEEN ALEXANDRA SANATORIUM, DAVOS.

THESE two illustrations, from photographs by Mr. Woodland Fullwood (Norwood), give the general view, and a view over the flat snow-covered roof, of the Queen Alexandra Sanatorium for Consumptive Patients.

The sanatorium has been built of the local stone taken from the site, but with ferro-concrete floors, roofs, staircases, and balconies. It contains accommodation for fifty-four patients, and is built with a view to extension up to 120.

The building contains the following:—

Patients' Bedrooms (fifty-four).—All facing south-south-west and having covered balconies except four, which face south-east.

Rooms for Staff.—Doctor's quarters on fifth floor comprise five rooms. Assistant medical officer's bedroom facing south-south-west. Matron's bedroom with balcony facing south-south-west, her sitting-room facing north.

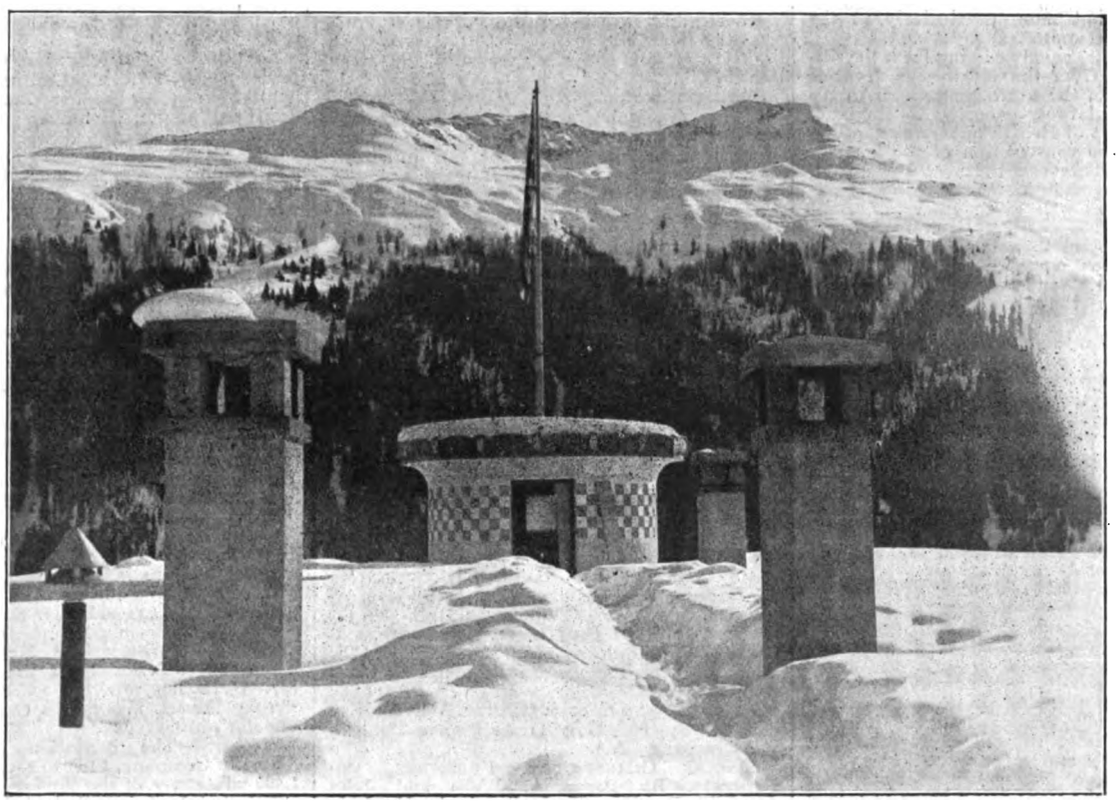
Medical Rooms.—Consulting-room, operating-room, waiting-room, laboratory, all on first floor.

Public Rooms.—Dining-room, drawing-room, reading and writing-room, and lounge.

Kitchen Arrangements.—One story high, separate from main building, and ventilated from roof. It is large enough for 150 persons, and is fitted with a gas cooking-stove, stove for coals, gas-heated boilers, and steam-heated cauldrons. Three washing-up sinks, each of two compartments, and fitted with hot and cold water. Dairy. Ice-room and cool chamber.

Sanitary Arrangements.—These have been carried out in a most approved manner by an English firm, who

Digitized by Google



Queen Alexandra Sanatorium, Davos: View on the Snow-covered Roof.

have had previous experience in Switzerland and its climate. They include two bathrooms on each bedroom floor, with lavatory attachment, hot and cold water; three water-closets on each bedroom floor. There is also a housemaid's pantry on each floor, with hydraulic lift, each fitted with hot-plate and gas stove for boiling water, etc.

Floor below Parterre.—Servants' hall, linen-room, ironing-room, store-rooms, and bedrooms for porter and electrician.

Staircases.—Three in number, main, emergency, and service, all of ferro-concrete.

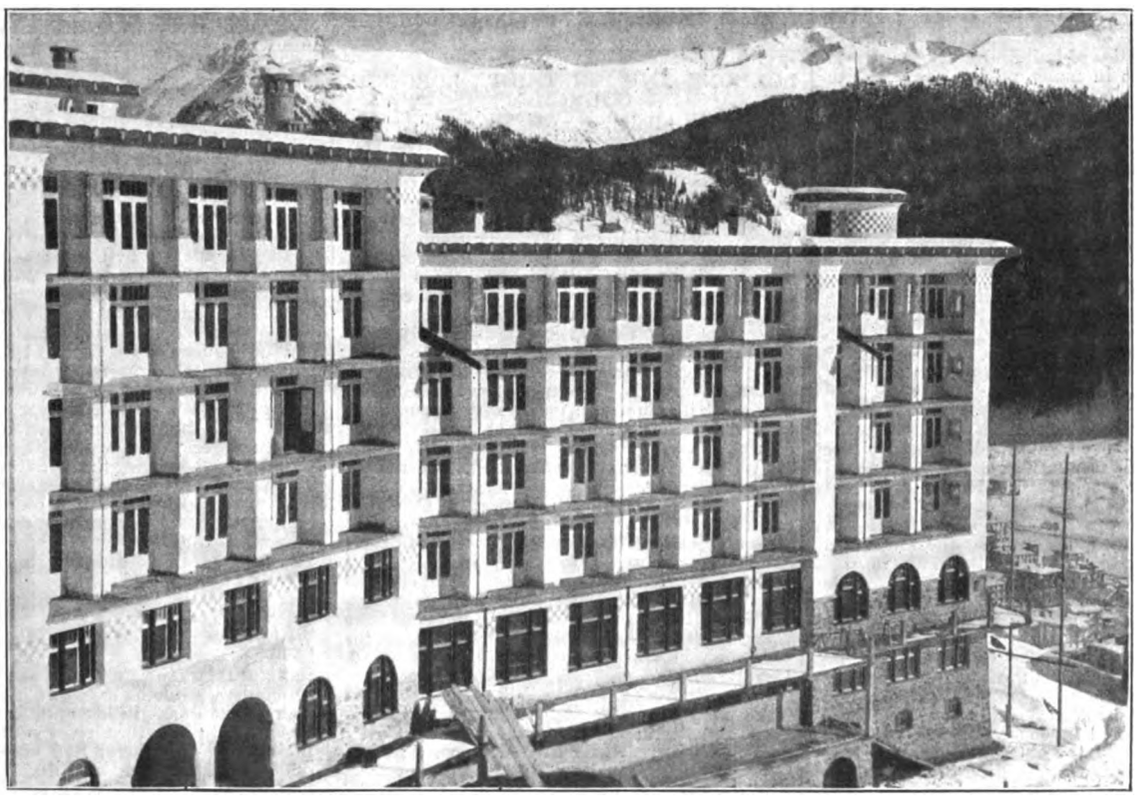
Lifts.—A hydraulic passenger lift from the top to the bottom is fitted close to the main staircase, and there are also small service lifts to the pantries on the different floors.

Heating, Lighting.—There is a complete system of central heating, each room having a radiator. In addition, the lounge has an open fireplace of English manufacture. Electric light is used throughout.

The architects are MM. Pleghard & Haefeli, of Zurich. If we remember right, the perspective view of the building, as then proposed, was exhibited some years ago at the Paris Salon.

SWEDISH BUILDING STONES.

A RECENT publication by the Geological Survey of Sweden, printed in English for the convenience of prospective buyers of building stone in this country, gives much useful and instructive information concerning the stone industry of Sweden. Although limestone and sandstone have been quarried since the XIIth and XIIIth centuries, and marble and porphyry since the XVIIth century, it was not until the middle of the XIXth century that the stone industry of Sweden commenced in real earnest. From a report by the Swedish Board of Trade it appears that in 1861 only two quarries and stoneyards were worked in Sweden, the number of men employed being only five, and the output amounting to the value of less than 60*l.* per annum. Since the year mentioned there has been a wonderful increase of activity, no fewer than 300 stone-working establishments being in operation during 1906, employing 11,985 hands, and turning out stone to the annual value of nearly 770,000*l.* This rapid development has been due partly to the greater employment of stone in the



Queen Alexandra Sanatorium, Davos: General View.

Digitized by Google

home market, but more particularly to the extension of the export trade.

Swedish granite, chiefly coming from the district extending from the Norwegian frontier at Iddefjorden in the north, to Lyseki l in the south, has been largely exported to England, and to the regret of British quarry owners has been used in the construction of the Thames Embankment, docks and piers at Devonport, Chatham, Grangemouth, Grimsby, and Newcastle-on-Tyne, as well as in other important structures.

Porphyries, found in northern Sweden, are characterised by singularly beautiful and variegated colours, and a texture permitting the working of the sharpest edges, many varieties taking a particularly glossy polish.

Black granite, a term denoting a number of rocks, differing in composition and nature as well as in structure and grain, is quarried in various parts of the country, and finds ready use in the construction of tombs, monuments, and ornamental works.

Roofing slate is produced chiefly in Värmland, Nordön, Bohnslän, Västmanland, and Dalsland, the colours ranging from light grey to black grey.

Pot-stone is being worked on a large scale in Jämtland, the material from that district being in general request for the finer kinds of ornamental and sculptural details in architecture.

Sandstone is found at several geological levels in Sweden, and is very generally quarried.

Limestone of quality well adapted to building purposes is plentiful in Sweden, where it has been widely employed in the form of pillars, steps, slabs, as well as for the construction of walls and exterior work.

Marble has been quarried in Kolmärd for about 250 years, the stone being green in colour owing to the presence of serpentine. The chief deposits occur on a steep escarpment at Bråviken, and the quarries are equipped with the most modern machinery and appliances. As instancing the activity displayed by the quarry owners, we may mention that marble has been shipped in large quantities to Great Britain for use in the following buildings:—The Coliseum Theatre; Shoreditch Town Hall; the London and County Bank offices; St. Saviour's Church, Poplar; the Hotel Continental, Regent-street; Lyons' Popular Café; the Scottish Temperance Life office, Cheapside; the Consumption Hospital, Manchester; the Electric Tramway offices, Liverpool; the North British Mercantile Insurance offices, Glasgow; and the Royal Insurance Company's offices, Lincoln.

The publication to which we refer gives full particulars as to the crushing strength of the principal varieties of stone as determined at the Royal Laboratory of Charlottenburg. It demonstrates the activity displayed by those engaged in the Swedish stone industries, and should operate as a stimulus to British quarry owners and stone-working firms, who have been somewhat lacking in propaganda for the encouragement of trade in the numerous admirable varieties of building and ornamental stones abundant in many parts of the British Isles.

Trade Catalogues.

THE Ransome-ver Mehr Machinery Company send us a copy of their new catalogue describing the Ransome concrete mixer, and other plant for preparing and handling concrete. The drum of the mixer is built of steel plates riveted together, and revolves upon two circular cast-iron roller paths, one fitted with an annular toothed rack, by which circular motion is transmitted from a gear wheel keyed to the driving shaft. The frame of the machine, lightly but strongly constructed of rolled-steel sections, carries, in addition to the mixing drum, the charging hopper and water tank, both of these auxiliaries being arranged for the measurement of materials delivered into the drum. The latter is provided with curved steel scoops arranged so as to plough through, pick up, and shoot out the materials, thus conducing to effective mixture. The discharge shoot is hinged, being elevated while each batch is being mixed, and lowered by a simple lever movement when it receives the concrete falling from the interior scoops, and the whole batch is discharged in five revolutions of the drum. This mixer is an ingenious and effective apparatus, made in forms too varied for description in this notice. Those who are interested in concrete work will find full particulars in the catalogue, which is the most comprehensive publication of its kind we have hitherto seen.

We have received from Charles Joyner & Co., of Icknield-square, Birmingham, a catalogue of Darwin inverted burners, cluster light burners, and inverted globes. It is claimed that the Darwin burners give 20 per cent. more light than any other burner with the same consumption of gas. They have also sent us a leaflet describing their "cord absorbers," which are designed to replace the troublesome and ugly counterweights used with electric light fittings. The essential part of the device is a clock spring, by means of which the cord is wound up. It seems to us to be ingenious, and ought to prove useful.

We have received from the Linolite Company, of Victoria-street, Westminster, a pamphlet and leaflets describing the various systems they have perfected for illuminating purposes. Full and accurate details are given of the efficiency of the tubolite lamps, which can now be had with metal filaments. These lamps are admirably adapted for shop-window lighting, and are extensively used for this purpose. They produce a bright but restful illumination, and there is no glare to irritate the retina.

BOOKS RECEIVED.

THE POLAR PLANIMETER: HOW IT IS USED. By Frank J. Gray, A.M.Inst.C.E., F.R.G.S. Pp. 57. (The St. Bride's Press. 1s.)

MEMORIALS OF ST. PAUL'S CATHEDRAL. By W. Macdonald Sinclair, D.D., Archdeacon of London. Pp. 496. (Chapman & Hall. 16s.)

OXIDE OF ZINC: ITS NATURE, PROPERTIES, AND USES. By J. Cruickshank Smith, B.Sc., F.C.S. Pp. 108. (The Trade Papers Publishing Company. 3s.)

SCUMBLING AND COLOUR GLAZING. By Andrew Millar. Pp. 86. (The Trade Papers Publishing Company. 3s.)

MODERN CABINET-WORK, FURNITURE, AND FITMENTS. By Percy A. Wells and John Hooper. Pp. 353. (B. T. Batsford. 12s. 6d.)

THE HOUSEHOLDER'S DUTY RESPECTING REPAIRS. By M. E. Cahill, Solicitor. Pp. 255. (Effingham Wilson. 3s. 6d.)

Competition News.

WHITBY SECONDARY SCHOOL COMPETITION.

At a meeting of the Education Committee it was resolved that the plans submitted by the author of the design No. 41 be accepted, and the premiums of 20 and 10 guineas be paid to the authors of the designs numbered 112 and 66 respectively, in accordance with the recommendation of the assessor under the conditions of the competition. On the chairman opening the sealed envelopes it was found that the successful architects were:—No. 41, Messrs. Thomson & Bristow, 13, Westminster-chambers, Victoria-street, London, S.W.; No. 112, Mr. R. W. Owen, 60, Castle-street, Liverpool; No. 66, Messrs. Oliver, Leeson, & Wood, Milburn House, Newcastle-upon-Tyne. Mr. Paul Waterhouse, M.A., F.R.I.B.A., High Holborn, London, W.C., was the assessor.

LONDON AND DISTRICT BOROUGH COUNCILS.

Battersea.—Painting works are to be done at the baths, at an estimated cost of 160*l.*, and cleansing is to be carried out in the workmen's dwellings, at an approximate cost of 55*l.* Metallic filament lamps are to be substituted for carbon lamps in the baths and libraries. The cost will be about 124*l.* Thirteen streets are to be repaved with granite macadam, at an estimated cost of 3,166*l.*, and repairs are to be carried out to other streets, at a cost of 550*l.* Ventilating columns are to be erected in seven streets. The cost is expected to be 350*l.* Electric mains are to be extended to Muncaster-road, Battersea Rise House Estate, at a cost of 120*l.*, while, in connexion with the tramway electrification, the position of mains is to be altered in Lavender-hill, at an estimated cost of 87*l.* A plan has been passed for Mr. F. W. Bowles for converting 47-49, Northcote-road into shops.

Brentford.—Plans for a laundry in Crichton-road, for Mr. M. J. Allen, have been approved.

Camberwell.—The London County Council are to be requested to insert in their next General Powers Bill a clause to authorise the Camberwell Council to acquire by compulsory purchase land for additional exits at the Dulwich Baths. A plan has been passed for Mr. Frank Brown to rebuild from 28-40, Denmark-hill.

Carshalton.—The Council have passed the following plans:—Forty-four houses, Cranfield-road and Stanley-road, for Mr. A. B. Cook; chapel, High-street, for Mr. A. Houston; additions to the Carshalton House, for the Rev. Mother Superior; alterations at the Fox and Hounds Inn, by Messrs. Chart, Son, & Reading.

Chelsea.—Wood paving is to be relaid in portion of Pont-street, at an estimated cost of 200*l.*

East Ham.—The following plans have been passed:—Mr. F. E. Chillingworth, eleven houses, Hatherley-gardens; Messrs. G. & I. W. Fox, ten houses, Henniker-gardens; Mr. G. Saxton, ten houses, and workshop, Kempton-road; Messrs. Stoneley & Carr, four houses and stabling, Welbeck-road; Mr. R. L. Curtis, school, cookery centre, and caretaker's apartments, Vicarage-lane. The following plans have been lodged:—Mr. G. E. Gray, additions to timber store, Monegar-road; Messrs. Stoneley & Carr, twenty-six houses, Holland-road; Mr. W. Lowe, eight houses, Loxford-avenue. The Borough Engineer has prepared plans for a mortuary to be erected at the rear of the Town Hall, at an estimated cost of 750*l.*

Epsom.—In regard to the proposed extension of the Technical Institute, it was stated at the last meeting of the Council that tenders are to be called for, and it was hoped the building would be finished and opened next summer. The Chairman (Mr. G. J. Beams) said it would be a breach of faith if they did not go on with the work now.

Greenwich.—Messrs. Marsden, Murgatroyd, & Co. are to supply 3,000 ft. of 3-in. York stone, and 3,000 ft. of 2½ in., at 62s. and 58s. per 100 ft. respectively. Plans have been passed as follows:—Mr. H. E. Saywood, seven cottages, Westcombe-hill; Mr. F. Saunders, nine houses, West-street; Mr. J. J. Downes, lodge at Gray's Paint Works, Blackwall-lane; Mr. W. Bailey, six houses, Northumberland-street; Messrs. Webster & Cannon, buildings, Shooter's-hill.

Holborn.—The quotation of the French Asphalte Company, Ltd., to repave with asphalt 1,400 yds. super. of the carriage-way of Keppel-street, has been accepted at 9s. per yard for 2-in. compressed rock asphalt, and 18s. per yard cube for Portland cement concrete. An application from Messrs. A. W. Gamage, Ltd., for permission to construct a subway under part of Robin Hood-yard to connect subways already made has been approved.

Lambeth.—A plan lodged by Messrs. R. Ellis & Son, the agents for the Sanders Estate, for the laying in of 754 ft. of 12-in. pipe sewer in a new road to lead from Denmark-hill to Ferndene-road, has been approved, as has also a plan lodged by Mr. Benjamin Hart for the combined drainage of eleven houses to be erected in Towton-road, at its junction with Ardlui-road, West Norwood. An amended plan by Messrs. Douglas, Young, & Co., for the laying out of two new streets, 40 ft. wide, to lead out of Upper Tulse-hill, has been passed.

Leyton.—Application is to be made to the Local Government Board to sanction a loan of 1,360*l.* for making up Canterbury, Matlock, and Guernsey roads. The following plans have been passed:—Mr. J. Holmes, five houses, Ashville-road; Mr. E. Costain, ten houses, Richmond-road.

Poplar.—Tenders are to be invited for the erection of mortuaries and post-mortem room, in accordance with plans and specification prepared by the Borough Surveyor, who has been invited also to tender for the work. The following plans have been passed:—Messrs. Edwin Evans & Sons, additions to 18, Jobb-street, also shop in same street; Mr. J. J. Wheeler, twelve houses, Ringdale-street; Messrs. Charles Yates & Co., new hall at Red House Schools, Love-lane.

Twickenham.—At the meeting of the Council on September 23 a discussion took place upon a recommendation by the Education Committee that Mr. F. W. Pearce, the Council Surveyor, should be appointed Surveyor to the Education Committee, his duties to include the preparation of the plans of any new buildings which may be required from time to time. Mr. Webb moved that the recommendation be referred back, upon the ground that it was not fair to outside architects for the Surveyor to do the work. Besides, if the recommendation was carried, the Surveyor would want extra assistance. In reply to questions the Chairman (Mr. G. Townsend) said that if the new school which they proposed to build was required quickly a temporary draughtsman would have to be employed if the Surveyor prepared the plans. He (the speaker) did not believe, however, there was any great urgency about the matter. Mr. Slade said that the architect's commission on the Trafalgar school was about 700*l.* Within the next few years the Council would have to put up two other new schools, and therefore by the proposed arrangement the ratepayers would be saved at least 1,000*l.* Mr. Palmer said that in his opinion outside architects should be given an opportunity of competing. The Surveyor had never planned any schools. Mr. Ayland said that Mr. Pearce had had to sit in judgment on architects' plans in the past, and, that being so, surely he had the ability to draw up plans himself. Mr. Pearce was responsible for the plans for the hospital.

Digitized by Google

The Committee's recommendation was carried with two dissentients. Two other members did not vote.

Walthamstow.—Plans have been approved by the Council for the sewering, paving, etc., of the north end of Handsworth-avenue and Preston-avenue. An application is to be made to the Local Government Board for sanction to borrow 915*l.* to carry out new street works in Marten-road and part of Cazenove-road. The bed of the lake in Lloyd Park is to be concreted during the winter. Mr. F. B. E. Amos has had plans passed for a motor garage in West-avenue. Mr. W. G. Fuller has lodged plans for three houses in Church-path.

West Ham.—The following plans have been passed:—Mr. W. E. Sedgwick, alterations to premises, Harrow Bridge Wharf, High-street, Stratford, for Mr. Maw; Mr. H. Davis, alterations to the Angel public-house, Church-street; Mr. M. W. Hudson, laundry buildings, 16, Cecil-road, Upton; Messrs. J. Webster & Brothers, additions and alterations to offices, Cook's-road, Stratford; Mr. J. M. H. Gladwell, garage, the Swan Depôt, Tramway-avenue, Stratford; Mr. A. Payne, five houses, Lorne-road, Forest Gate; Mr. W. Sweeting-ham, building for cinematograph exhibitions, Rathbone-street, Canning Town.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERFELDY.—Church hall; Vicar, St. Margaret's Episcopal Church.

Aberystwyth.—Pavilion, Castle Grounds; Borough Surveyor, Aberystwyth.

Almond Brook.—Church (1,500*l.*); Mr. J. B. Thornley, architect, Wigan.

Ashton-under-Lyne.—Infirmary; Mr. Jenkinson, architect, Ashton.

Aultbea.—United Free Church manse (1,200*l.*); Mr. W. McKenzie, County-buildings, Dingwall, N.B.

Ayr.—Factory premises, York-street-lane, for Mr. Jas. Green, Woodfield-road, Ayr. Business premises, Alloway-street, for Messrs. Hourston & Sons (6,000*l.*); Mr. Allan Stevenson, architect, Cathcart-street, Ayre. Starch factory, River-terrace, for Messrs. Hyland & Co. (1,100*l.*); Mr. J. K. Hunter, architect, 51, Sandgate, Ayr.

Barnoldswick.—Public hall (2,000*l.*); Mr. M. Hartley, architect, Barnoldswick.

Beddington Corner (Surrey).—School; architect, care of Education Building Committee, Sutton. Extensions to isolation hospital (4,600*l.*); Mr. R. M. Chart, Surveyor, Croydon Rural District Council.

Berwick.—Parochial hall (2,000*l.*); Messrs Harrison & Ash, architects, Newcastle.

Birmingham. — Office premises, Needless-alley; Mr. E. Harper, architect, Corporation-street, Birmingham.

Bolsover.—Minister's house and additions to school; Wesleyan Connexional Committee, Chesterfield.

Boulton (Derbyshire).—Enlargement, parish church; the Vicar.

Bourne End.—Chapel; Wesleyan Connexional Committee, High Wycombe, Bucks.

Bournemouth (Winton).—Schools (13,930*l.*); Mr. F. W. Lacey, Surveyor, Bournemouth Town Council; Messrs. J. & M. Partick, builders, London.

Brading, I.W.—School (3,000*l.*); Mr. C. R. Coats, architect, 22, Thomas-street, Ryde, I.W.

Bridport.—Stables and depôt; Borough Surveyor.

Brighouse. — Residence, Lightcliffe-road (1,000*l.*); Mr. A. G. Sladden, architect, Briggate, Brighouse.

Bristol.—Extensions to college; Messrs. Cowlin & Son, builders, Statton-street, Bristol.

Burnham.—Institute (1,600*l.*); Messrs. Cottam & Samson, architects, High-street, Bridgwater; Mr. J. Fursland, builder, Bridgwater.

Burntisland.—Sixty houses for Mr. Duncan, Broomhill, Burntisland.

Camelon.—Cake mill; Cross's Chemical Company, Falkirk.

Chard.—Extensions to lace factory for Messrs. Small; Messrs. Symes & Madge, architects, Chard.

Coatbridge. — Skating-rink, Church-street; Mr. W. Apton, architect, Clark-street, Aidrie, N.B.

Coxlodge (Newcastle).—Institute; Mr. H. Gibson, architect, Camden-street, North Shields; Mr. J. Handmarsh, builder, Gosforth.

Cwmdon Grange.—School; Mr. T. Rushworth, architect, Shire Hall, Durham.

Darlington.—Block of houses, Harrowgate-hill (3,000*l.*); Messrs. Taylor & Minar, architects, P.O. Chambers, Darlington.

Dawdon.—School; Mr. T. Rushworth, architect, Shire Hall, Durham.

Denbigh.—Drill hall (1,500*l.*); Mr. J. P. Fraser, architect, Parker-street, Liverpool.

Dover.—Fifty houses, Shepherd-walk; Mr. M. Caspall, architect, Shepherd-walk, Dover.

Dudley.—School, Holly Hall; Mr. T. Grazebrook, architect, High-street, Stourbridge.

Dumfries.—Additions to Academy (7,700*l.*); Messrs. Crombie & McKenzie, Union-chambers, Dumfries. New Free Church, George-street (1,400*l.*); Messrs. Barbour & Bowie, architects, Dumfries.

Durham.—Hall, Wheatley Hill (2,000*l.*); Mr. J. Garry, architect, Church-street, West Hartlepool. Forty-four houses; Mr. T. Tate, architect, Easington, Durham.

Elland (Yorks).—Villa (1,200*l.*), Hullen Edge; Messrs. R. Horsfall & Sons, architects, Halifax.

Exeter. — University College (15,000*l.*); Messrs. Tait & Harvey, architects; Messrs. Westcott, Auston, & White, builders, Exeter.

Fatfield.—School (3,000*l.*); Mr. F. E. Coates, architects, Shire Hall, Durham.

Faversham.—Skating-rink; Mr. H. Dan, architect, Faversham.

Fife.—New buildings, Abden Linen Works, for Stocks & Co., Fife.

Gateshead.—Entertainment hall; Mr. H. Gibson, architect, Camden-street, North Shields; Mr. W. T. Weir, builder, Howden-on-Tyne.

Gorgie.—Slaughter-houses, stores, etc., for St. Cuthbert's Co-operative Association (3,500*l.*); Mr. T. P. Marwick, 43, York-place, Edinburgh.

Gorringe Park (Surrey).—School; architect, care of Education Building Committee, Sutton.

Greenbank.—School (1,500*l.*); Mr. G. Winter, surveyor, Darlington.

Halifax.—Additions, Narwood Green provided school (2,000*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Hamilton.—Skating-rink (2,250*l.*); Mr. J. C. Reid, architect, 209, St. Vincent-street, Glasgow.

Helston.—New premises, Coinage Hall-street, for Messrs. Opie & Sons, Helston.

Helton.—Forty-six houses, Station-road; Mr. J. Logan, architect, Helton.

Hillhead (Glasgow).—Extensions to Notre Dame Training College (8,000*l.*); Messrs. Pugin & Pugin, architects, May-buildings, North John-street, Liverpool.

Ipswich.—Additions to workhouse; the Guardians.

Irvine.—Additions to Stewarton School (1,850*l.*); Messrs. J. & J. Armour, architects, 43, Bridgegate, Irvine.

Jarrow. — Entertainment hall; Messrs. Kelvey & Penlington, architects, St. Anne's.

Keighley.—Shed, warehouse, etc., at Co-operative Ironworks (2,000*l.*); Mr. T. Harris, architect, Balloon-street, Manchester. Additions to Perseverance Mills (1,200*l.*); Messrs. J. B. Bailey & Sons, architects, Keighley.

Kidderminster.—School; Messrs. Pritchard & Pritchard, architects, Bank-chambers, Kidderminster.

Lauriknow.—Extensions to school (1,850*l.*): Messrs. Barbour & Bowie, architects, 54, Buccleugh-street, Dumfries.

Leeds.—Bank, Park-lane (7,000*l.*); Messrs. Perkin & Bulmer, architects, Leeds; Messrs. Nicholson & Son, builders, Leeds. New works (30,000*l.*); Leeds Fireclay Company, Ltd., Leeds.

Newquay.—County school; Mr. B. C. Andrew, architect, Biddicks Court, St. Austell; Mr. Stanburg, builder, Devonport.

Nottingham. — Additions to Carrington School; Mr. Lewis, City Architect, Nottingham.

Penketh.—Additions to tannery (8,000*l.*): Mr. Routledge, architect, Penketh.

Penpoint.—Kilns, sheds, and stores: Mr. T. H. Andrew, architect, Market Hall, St. Austell.

Pentre.—Skating-rink; Messrs. Richards & Kaye, architects, Pontypridd.

Ponteland. — Additions to workhouse (2,000*l.*); Mr. G. M. Hunter, architect, Heddon, Northumberland.

Porthcawl.—Pavilion, etc. (4,000*l.*): Messrs. J. F. Lambert & Son, architects, Bridgend. Skating-rink; Mr. J. L. Lambert, architect, Bridgend.

Port Talbot.—Twenty-five houses; Mr. R. O. Clarke, architect, Port Talbot.

Prestwick.—Additions to High School (2,000*l.*): Messrs. J. & H. V. Eaglesham, architects, Wellington-square, Ayr. Additions to cripples' home (2,000*l.*): Mr. J. H. Hunter, architect, 50, Sandgate, Ayr. Villa for Mrs. Temple (1,400*l.*); Mr. Reid, architect, Main-street, Prestwick.

Rochdale.—R.C. school (4,000*l.*): Mr. O. Hill, architect, Albert-square, Manchester; Messrs. R. & T. Howarth, builders, Rochdale.

Shepshed.—Additions to factory; Messrs. Walker & Sons, architects, Shepshed.

Southampton.—The Town Council has passed the following plans:—Church and schools, Polygon-road, Messrs. Baines & Son, London; three houses, Welbeck-avenue; Mr. H. Groves; road and houses, Percy-road, Mr. W. H. Masters; three houses, Dimond-road, Mr. F. Lowe; additions, laundry, Salisbury-road, Mr. H. Groves.

Southend-on-Sea.—Church; Mr. B. Parker, architect, Bank-chambers, Southend.

South Moor.—Twenty-three houses; Mr. J. W. Roundthwaite, architect, Moseley-street, Newcastle.

Springburn (Glasgow).—Extensions to N.B. locomotive works, Flemington-street (45,000*l.*); architect to the company.

Staines.—The Rural District Council has passed the following plans:—Two pairs cottages, Bath-road, Harlington, Mr. C. H. Keen; three cottages, Tennyson-road, Ashford, Mr. W. Penn.

Sutton (Surrey). — Adaptation of Old Wesleyan church, Carshalton-road, for laundry, for the directors of the laundry company.

Swadlincote.—Skating-rink; Mr. R. Robinson, architect, Swadlincote.

Swansea. — Shop premises for Messrs. Masters; Mr. Willmott, architect, 69, Mansel-terrace, Swansea.

Walton-le-Dale.—Additions, Higher Walton Mill, for Messrs. G. & R. Dewhurst, Ltd., Walton-le-Dale.

Waterfoot.—Market hall; Mr. W. Ashworth, builder, Waterfoot.

Westcliffe-on-Sea. — Clubhouse; Cradstone Yacht Club.

Wingate.—School at Wingate Grange Colliery (4,000*l.*); Mr. W. Rushworth, architect, Shire Hall, Durham.

General Building News.

CONGREGATIONAL CHURCH, PALMER'S GREEN.

The opening ceremony of this church took place on Tuesday, the 28th ult. The building, which is the first portion of a larger scheme and will eventually be used for school purposes, is designed in a late period of Gothic freely treated. The tracery work in the windows and the other dressings are executed in Bath stone, and the facings in red pressed Leicester bricks; the roof is covered with tiles, the internal joinery is carried out in oak. The contract has been carried out by Messrs. Mattock Brothers, of Wood Green, from the designs and under the superintendence of Messrs. George Baines & Son, of London.

ADDITIONS TO UNITED METHODIST CHURCH, HARROGATE.

A new porch, lecture hall, and ladies' parlour are being built at the United Methodist Church, Harrogate. The contractors for the work are:—Messrs. Simpson & Sons, for bricklayer and mason's work, Mr. J. W. Rudd for carpentry and joinery, Messrs. A. Calverley & Sons for plastering, and Mr. C. Foster for plumbing. The architect is Mr. W. Hugill Dinsley, of Chorley.

NEW CHURCH, WIMBLEDON.

The church of St. Andrew, Herbert-road, South Wimbledon, was recently consecrated. The building is of red brick, with stone facings, and has cost 8,026*l.* The church is complete with the exception of the side chapel, and it has seating accommodation for 620, all seats being free. The architect was Mr. W. T. Lowdell, of London.

TOWN AND COUNTY SCHOOL, NORTHAMPTON.

Work has just been begun on the site of the new Northampton Town and County School for Boys on the Billing-road. The main building will be of two stories. It will have a frontage of 140 ft. to the road, and will contain a large central hall about 77 ft. by 40 ft., with oak panelling round the walls and a gallery over, together with three classrooms, a physical laboratory, headmaster's and assistant masters' rooms, and a small library. There is provision for five classrooms, a chemical laboratory, a lecture-room, and an art-room on the first floor. The building (which is capable of extension on the south side, with provision for four more classrooms) will be of red brick, with Bath stone dressing. On the west side of the school proper will be a dining-hall, cloak-room, and other accommodation, and a caretaker's house. At the rear of this portion of the large block will be an ample playground. The school in its first form is contemplated for 250 scholars. Mr. Herbert Norman and Mr. Arthur McKewan, of Northampton and Birmingham, are the architects, their plans being accepted in open competition. The cost of the work (which is in the hands of Mr. A. P. Hawtin) will be approximately 10,500*l.*, and the building of a boundary wall, the laying out of the playing-fields, the cost of furniture, etc., will bring the cost to about 19,500*l.*

SCHOOL IMPROVEMENTS, CHESSINGTON.

The Chessington Church of England Schools have been enlarged and improved. A new room to accommodate sixty children has been added, and the existing buildings have been

Digitized by Google

improved by the addition of a large corridor, cloakroom, offices, lavatories, and extension of the playground, and the whole building has been fitted with modern appliances for lighting, ventilation, and sanitation. The house of the headmaster has also been enlarged. The work at the school has been carried out under the supervision of Mr. A. H. Ryan-Tenison, architect, by Mr. E. D. Hobbs, of Thames Ditton, and the enlargement of the master's house by Messrs. M. Kelsey & Son, Chessington.

NEW SCHOOLS, LEMINGTON, NORTHUMBERLAND.

New schools have been erected in connexion with Newburn Hall, Lemington. They are intended for junior and senior scholars of both sexes, the juniors' department being on the ground floor, and the seniors' on the second story. Each department will have five classrooms, the whole building being constructed to accommodate 480 scholars. In addition to the classrooms, each department has been provided with a central hall, and teachers' rooms and a room for the use of the school managers have also been constructed. A caretaker's house has been erected within the playgrounds. The building is of brick, with stone dressings. The erection of the school has cost 5,300*l*., and the cost of building the caretaker's house has amounted to 400*l*. The work has been carried out under the supervision of Mr. C. Dixon, clerk of works, to the design of Mr. G. Topham Forrest, the Committee's architect. The contractors were Messrs. J. Jackson & Sons, Newcastle, who were responsible for the main structure.

NEW BUILDINGS AT CHRIST'S HOSPITAL, HORSHAM.

At the end of the seventh year since its exodus from the City Christ's Hospital is just completing two large new buildings—a manual training school and a music school. The former has been built to meet the general demand for the training of the mind through hand and eye, a demand which Dr. Gray, of Bradfield, emphatically endorsed at the recent Winnipeg meeting of the British Association. The latter is intended to accommodate the teaching and practice of the various forms of music taught at the school—band, orchestra, piano, violin, and singing. There are already two fine organs, one in the big school the other in the chapel, and a capacious orchestra platform in the big school. The manual training school is built in red brick, with Bath stone facings, and roofing of Broseley tiles. Its external dimensions are:—Length, 137 ft. 6 in.; width, 36 ft. 6 in.; height, 40 ft. On the ground floor is the principal workshop, including an office and store under the office. It will contain carpenters' and fitters' benches and lathes, saw benches, etc., the power being supplied by a gas-engine. At the end of the building is the smithy, for forge, anvils, vices, benches, etc., and storage of coal and coke. The first floor is lighted and ventilated by a row of frames, with casements and ventilators from end to end. The whole of the first floor is divided by partitions for various trades, such as printing, leadwork, modelling, carving, book-binding, drawing, and pattern making. On the south front are folding external doors and a landing-stage to enable materials to be hoisted from the roadway. The floors throughout the building, except the smithy, are finished with wood-block flooring. The heating is by low-pressure steam by radiators, supplied from a separate boiler-house. The whole structure is independent of the rest of the school buildings in all matters except electric light, which is supplied from the Hospital's generating-station. There are also at the back two accessory blocks, one for the use of the various sections of the Natural History Society, including a dark-room for photography, and the other a foundry; each block is 43 ft. by 2 ft. and 21 ft. high. The music school is a one-storied, red-brick and Bath stone building, with a front cloister and porch. The first room entered is the singing-room, with exposed framed roof timbers of Oregon pine; a raised platform in tiers will be used by the choir while practising or giving small concerts. The dimensions are 43 ft. by 21 ft. and 25 ft. high. There are two teaching-rooms, twelve piano practice-rooms (each 9 ft. by 6 ft. and 10 ft. high), a band-room (35 ft. by 20 ft. and 25 ft. high), and four band practice-rooms. The walls of the practice-rooms are specially built to resist the passing of sound; they are double, and built with composition slabs, and the ceilings are treated in the same way. The flooring, heating, and electric lighting are similar to those of the manual training school. Over the porch is carved in stone the Shakespearian lines:—

> "In sweet music is such art,
> Killing care and grief of heart
> Fall asleep, or hearing die."

The new buildings have been carried out from designs of Sir Aston Webb and Mr. Ingress Bell, the original architects of the school.

WESLEYAN MISSION HALL, STAFFORD.

A Wesleyan mission hall has been built in Rowley-street, Stafford. The new building is 52 ft. in length, 32 ft. wide, and 22 ft. high, and is built of red brick, with terra-cotta dressings. It provides seating accommodation for about 350 persons. The estimated cost of the building was 1,200*l*. Messrs. Gough & Son, Wolverhampton, were the contractors, and the architect was Mr. C. W. Joynson, Wednesbury.

PROPOSED PUBLIC BATHS, JARROW.

An application for sanction to borrow 6,000*l*. for the provision of public baths was inquired into on the 16th ult. by Mr. T. H. Tulloch, Local Government Board Inspector, at the Town Hall, Jarrow. It was stated that the accommodation of the proposed building will comprise swimming-bath hall, with swimming-pond and dressing-boxes, and accommodation for spectators. Also slipper-baths for ladies and gentlemen, caretaker's quarters, pay office, and separate entrances for ladies and gentlemen, establishment laundry, boiler-house, and storage tanks. The cost of the site was 1,155*l*., and the architect's estimate for the erection of the building 3,575*l*. The total cost would be 6,000*l*. Mr. J. H. Morton, architect, South Shields, explained the plans, and the system of drainage was explained by the Borough Surveyor, Mr. J. Scott Weir.

FIRE BRIGADE HEADQUARTERS, PORTSLADE, SUSSEX.

The Portslade-by-Sea Fire Brigade have had new headquarters provided for them in Church-road. The building was designed by Mr. A. Taylor Allen, the Surveyor to the Urban District Council, and was erected by Mr. Clevett, a local contractor. It is faced with white bricks and Ruabon terra-cotta.

MUNICIPAL BUILDINGS, BETHNAL GREEN.

The foundation-stone of the new municipal buildings at Bethnal Green was laid on the 23rd ult. The cost of the buildings and furnishing is estimated at 25,500*l*. The architects are Mr. Percy Robinson and Mr. W. Alban Jones. The new buildings are situated at the corner of Cambridge-road and Patriot-square. The elevations are of Portland stone. The Council-chamber is on the first floor, together with the committee-rooms and the Mayor's-room, and the chamber has a public gallery.

CHILDREN'S HOMES, HARROGATE.

At Pannal Ash, Harrogate, a second pair of children's homes is being built in connexion with the Primitive Methodist community. The premises will comprise a pair of homes, each home accommodating twelve children, or a total of twenty-four. The contractors for the various trades are as follows:—Excavating, drainage, brickwork, and masonry, Messrs. Jas. Simpson & Sons, Harrogate; carpenters' and joiners' work, Mr. J. W. Taylor, Harrogate; roof tiling, Mr. Jos. Shepherd, Harrogate; plumbing and glazing, Messrs. Braithwaite, Harrogate; plastering and concreting, Mr. R. Fortune; painting, Mr. G. H. Marshall, Harrogate. Messrs. Roger Oldham and Thos. J. Hill, architects, of Manchester. The cost of the work will be between 1,700*l*. and 1,800*l*.

NEW LONDON BUILDINGS.

Flats, Portland-court, W.; Messrs. Boehmer & Gibbs, architects, 11, Spring-gardens, S.W. New offices for the Sons of Temperance Friendly Society, Blackfriars-road, S.E.; Messrs. John Marsland & Sons, builders, York-street, Walworth, S.E. Rebuilding and extension to the Railway Passengers' Assurance Company's offices, 64, Cornhill, E.C.; Mr. William Wallace, architect, 27A, Old Bond-street, W. New premises, Great Portland-street, W., for the British and Foreign Blind Association, 206, Great Portland-street, W.

THE CAMBRIAN BUILDINGS, CARDIFF.

The new Cambrian buildings, erected on a site covering 800 super. yds., and facing Mount Stuart-square and West Bute-street, Cardiff, have now been practically completed. The buildings, which will chiefly be used as offices for the Cambrian Coal Combine, were erected by Mr. W. T. Morgan, Cardiff, to the plans of Mr. Henry Budgen, architect, Cardiff, and the architect for the internal arrangements and the fitting of the offices is Mr. W. H. Scott, Cardiff. The principal rooms are panelled with Cuba mahogany, 7 ft. high, with oak borders, decorative plaster ceilings, windows glazed with lead lights, and bronze electroliers. Access is obtained to the upper floors by means of a teak staircase constructed round the well of a Waygood lift. The buildings are lighted with electricity. The electroliers were supplied by Messrs. James Gibbons, of Wolverhampton, and the electric light installation was put in by Mr. Ralph Nance, Cardiff. The general offices are heated with air-pit fires. Auxiliary heating is provided for the various rooms by means of electric radiators and hot-water pipes. The chief rooms in the basement average about 20 ft. square; on the first floor the rooms are over 20 ft. square, and the general offices 32 ft. by 28 ft.; and on the second floor for the offices average about 30 ft. square. The lift will accommodate seven or eight persons, and will ascend the whole of its height of over 90 ft. in ten seconds.

THEATRE IMPROVEMENTS, KIRKCALDY.

Improvements and alterations have been effected at the King's Theatre, Kirkcaldy, at a cost of between 3,000*l*. and 4,000*l*. The whole auditorium has been finished in white and gold, and the panels over the proscenium, the boxes, and stalls, as well as the ceiling, have been filled in with large hand-painted panels. The entrance hall and staircase are also treated in white and gold. A scheme of electric lighting has been introduced, a 40-h.p. Crossley engine and complete suction-gas plant having been installed, which will generate the power for both gas and electricity. The work has been under the supervision of Messrs. J. D. Swanston & Syme, architects, Kirkcaldy.

INSTITUTE PREMISES, OGMORE VALE.

A workmen's hall is being built at Ogmore Vale. The building will comprise a large hall to accommodate 1,000 people. In addition the accommodation includes a small or lesser hall to seat 200, a billiard-room for four tables, large reading-rooms and library, a suite of committee-rooms for club purposes, caretaker's rooms, &c. It is being built of local stone, faced on the outside with best pressed brick facings and Bath stone dressings. The whole block will be lighted by electricity, generated from a plant placed in the basement. The total cost will be about 8,000*l*. The building is being erected by Mr. Watkin Williams, of Cardiff, from the plans and under the superintendence of the architect, Mr. W. Beddoe Rees, also of Cardiff.

PROPOSED ISOLATION HOSPITAL EXTENSION, BEDDINGTON.

At the Croydon Rural District Council offices on the 22nd ult. Mr. R. J. Reece, M.D., Inspector of the Local Government Board, held an inquiry into the application of the Council to borrow 4,800*l*. for the extensions to the Isolation Hospital at Beddington Corner. Mr. E. J. Gowen, Clerk, explaining the scheme, said at the request of the Board the extension provided for a twelve-cubicle observation pavilion, which would cost 2,117*l*. A cottage would be provided for the engineer, and one for the gardener, which would cost 713*l*. A waiting-room was to be put in at a cost of 115*l*., which would fill a long-felt want, and a fodder-room and stable, 119*l*. A new feature would be living accommodation for the medical officer, which would cost 839*l*. There would also be an extension of the servants' hall, and extension of the nurses' day-room, at a cost of 173*l*. Mr. R. M. Chart, Surveyor to the Council, submitted and explained the plans.

BANKING PREMISES, ABERYSTWYTH.

New premises have been built in Great Darkgate-street, Aberystwyth, for the North and South Wales Bank. The stone used is Darley Dale, from the Stancliffe quarries. The large strong-room is built of blue Staffordshire bricks, lined with Aston Hall fire-bricks, and interlaced both vertically and horizontally with steel bands, having the floor and ceiling formed of reinforced concrete. Above the bank is accommodation for a caretaker, with parlour, kitchen, bedrooms, bathrooms, etc. Messrs. Woodfall & Eccles, of Liverpool, were the architects; Mr. Peter Edwards, of Dodleston, Chester, the builder; and Mr. T. E. Morgan, of Aberystwyth, acted as clerk of the works.

GLASGOW BUILDING TRADE.

During the year ending August 31 last, 369 linings were granted by the Glasgow Dean of Guild Court, representing property to the value of 902,613*l*., while the total valuation of the subjects dealt with during the previous year was only 894,716*l*. Of late building operations have been on a very restricted scale so far as tenement and villa property is concerned, and the increase in the valuation of the work passed by the Court during the year can be accounted for only by the large number of public buildings for which linings were granted. So far as these were concerned the total valuation of the new work amounted to 157,522*l*., and of the additions and alterations to 26,485*l*. In the previous year there was a considerable falling off in both the number and value of public buildings, the valuation of the work passed in this class being only 59,875*l*. There is, however, in the return for last year, an increase in the valuation of house and shop property, this being estimated at 345,492*l*., as compared with 264,201*l*. in 1908. While there have been alternate periods of prosperity and

Digitized by Google

depression in the building trade during the past quarter of a century the erection of property of all classes has been steadily proceeded with.

CITY OF LONDON UNION, HOMERTON INFIRMARY.

On Saturday, the 25th ult., the new Workhouse and Infirmary at Homerton, which has been built for the Guardians of the City of London Union, was formally opened by the Chairman of the Board. The buildings have been designed for the accommodation of 681 inmates and sixty-three officers, at a total cost of between 50,000*l.* and 55,000*l.*, the average cost per bed being 154*l.* A sum of 10,000*l.* has also been expended in the renovation of the old buildings. The new buildings have been designed by Mr. Albert E. Pridmore, architect, and built by Mr. Albert Monk, of Lower Edmonton. The engineering work comprises the heating, hot-water service, electric lighting, laundry, and kitchen, and has all been carried out under the supervision of Mr. E. R. Dolby (Messrs. Dolby & Williamson, Westminster), as consulting engineer, who sends us the following details as to the engineering work:—

The plant, requiring skilled attention, has been centralised as much as possible; sufficient steam can be generated in one boiler, and this effects all the work described above, with the exception of the electric lighting. The boiler-house contains two steam boilers, for 80-lb. working pressure, and each 30 ft. long by 8 ft. diameter, built by Messrs. Galloways, Ltd., Manchester, also the feed-pumps. All water supplied to the boilers is previously softened to prevent incrustation. Steam is carried to two calorifiers in the basement, each of which is large enough to supply the whole of the heating and hot-water service, and a centrifugal pump, driven by an electric motor, is in connexion with each calorifier. The water is pumped into a ring main in a subway, and this supplies all the buildings except part of the old administration block, the receiving block, and the workshops. The water from the ring main passes directly into the hot-water radiators in all the new blocks, and it also feeds hot-water calorifiers, and gives up its heat to the hot-water service. The hot water in the ring main acts solely as a vehicle for the heat, and is not drawn off for washing purposes. The old blocks are heated with low-pressure steam. The laundry comprises the steam-engine, a number of rotary washers, and hydros for wringing the clothes, and a set of drying-horses in a chamber warmed by air, heated by the exhaust steam from the engine, and delivered under pressure by a fan. The ironing-room contains two power mangles, a large Decoudun ironer for sheets, etc., and a small iron for dresses. The kitchen contains a series of steam-heated boiling-pans, beef-tea pot, milk steriliser, tea infuser, hotplate, baker's oven, and cooking ranges. A disinfector of large size is installed for dealing with infected goods, and a steriliser for treating instruments, etc., for the operating-theatre. Electric lighting is installed in all the new blocks and parts of the old blocks, the current being obtained from the mains of the Hackney Borough Council. The lamps are chiefly of the Oram metallic type, which use about one-quarter of the current consumed by the old carbon lamps to produce the same illumination. All the chief rooms are wired upon more than one circuit, so as to prevent total extinction of the light in case of the melting of a fuse. There is also a complete service of telephones and electric bells, and two electric passenger lifts. The whole of the heating and hot-water service work was carried out by Messrs. Wenham & Waters, Ltd., of Croydon, under Mr. Chas. Hunt; the boiler-house and laundry work by Messrs. Thomas Bradford & Co., of Manchester and London; the water softener by William Boby, London; the electric lighting, telephones, and power, by Messrs. Lund Brothers, London; and the kitchen work by Messrs. McDowall, Steven, & Co., London; the electric lifts by Messrs. J. G. Childs & Co., Willesden. Mr. Thomas Huckett acted as clerk of works.

Stained Glass & Decoration.

BLANDFORD AND WEYMOUTH.

A stained-glass memorial window has just been erected in Tarrant Hinton Church, Blandford, by Messrs. Percy Bacon & Brothers, of London. The window consists of three lights, each containing a single figure of Dorset saints, with the respective arms of Winchester, Shaftesbury, and Salisbury introduced. The same artists have put up a window at the church of SS. Peter and Paul, Weymouth—the first of a series of two lights in the north aisle, the subjects treated being "The Good Shepherd" and "Light of the World."

Appointments.

CITY AND GUILDS OF LONDON INSTITUTE.

Mr. T. Mather, F.R.S., has been appointed to succeed Professor Ayrton (whose chief assistant he was for several years) as Professor of Electrical Engineering at the Central Technical College.

FARADAY HOUSE, LONDON.

Mr. William Buchanan, chief engineer to the Electric Construction Company, Wolverhampton, has been appointed lecturer upon electro-technics and the designing of electrical machinery at Faraday House.

Sanitary and Engineering News.

PROPOSED SEA WALL, BARRY ISLAND.

The question of the development of Barry Island came up recently before the District Council, when it was suggested that the Surveyor should prepare plans and estimates for the construction of a sea wall, and that Mr. W. T. Douglas, M.Inst.C.E., Westminster, be also engaged to confer with the Surveyor with reference to the scheme that he had prepared three years ago. It was decided that four members visit other seaside resorts where sea walls have been built, and that Mr. W. T. Douglas be appointed consulting engineer.

DRAINAGE SCHEME, HEADINGTON.

A scheme of drainage for the parishes of Headington and Marston, which the Rural District Council are proposing to introduce with the aid of a loan of 4,263*l.*, was the subject of an inquiry recently held by Major J. E. Stewart, R.E., Inspector of the Local Government Board. Mr. Humphreys, Consulting Engineer of the Rural District Council, was present, and gave details of the proposed works.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Mr. Huon A. Matear, architect (Liverpool), has removed his offices from Century Buildings, North John-street, to Orleans House, Bixteth-street, Liverpool.——Messrs. Wimperis & Best, architects, have removed their offices from 6, Vigo-street, to 61, South Molton-street, W. Their telephone number and telegraphic address remain unchanged.——Messrs. W. & J. R. Hunter, mahogany and hardwood merchants (5-11, Bethnal Green-road, Shoreditch), have converted their business into a private company, which was registered on the 21st ult., under the title of "W. & J. R. Hunter, Ltd." The business will be conducted upon the same lines as hitherto, and at the same address, but, owing to frequent ill-health, Mr. William Curling Hunter is retiring from active participation in the management. Mr. Charles Herbert Hunter has joined the board as a director, and the company has secured the services of Mr. Robert M. Turner, who will act as managing director.——Messrs. Arthur L. Gibson & Co., makers of Kinnear's patent steel rolling shutters, have removed their offices and warehouses to their enlarged premises at Radnor Works, Strawberry Vale, Twickenham, where all communications after this date should be addressed.

THE BRICK TRADE.

Considerable uneasiness is felt by brick manufacturers owing to the financial proposals of the Government, and at a meeting at Barton-on-Humber, where the industry is an important one, of all interested in the brick-making and cement trades a memorial was ordered to be forwarded to the member for the division urging him to oppose the Budget in every form, those present being strongly of opinion that the taxing of their raw material would be ruinous to the trade in its present position. Much perturbation has also been caused at Fletton, the centre of the industry. At a meeting of the Urban Council a member opposed recommendations from the Finance Committee owing to the diminishing rateable value of the brickyards.—*Times.*

KEN WOOD, NORTH HAMPSTEAD.

The Grand Duke Michael of Russia has taken a long lease of Lord Mansfield's property, known as Ken, or Caen, Wood, and will effect many alterations and improvements. The estate, which had belonged to John Bill, founder of the *London Gazette*, the Duke of Argyll, and the Earl of Bute, was purchased in 1755 from Lord Bute by William Murray, Attorney-General, who, in November, 1756, was appointed Lord Chief Justice of the King's Bench, and was created Baron Mansfield. Lord, afterwards Earl, Mansfield greatly enlarged the house, employing the brothers Adam to build the (south) garden front, raised upon a wide terrace, and the hall and library, which Zucchi and Rebecca decorated with paintings; the Welsh landscapes in the panels of the music-room are by Julius Ibbetson. After Lord Mansfield's death in 1793 his nephew and successor, David, Lord Stormont, made additions to the house, which were carried out by Saunders. The grounds are finely watered and timbered; in the slopes to the south is one of the sources of the eastern affluent of the river Fleet.

BUILDING REGULATIONS IN ZANZIBAR.

Until after the formation of a Constitutional Government, no control whatever was exercised over the erection of buildings in the town of Zanzibar. Houses were built in any place and in any manner, without regard either to the health of the inhabitants or to their safety or thought of the general public. Encroachments upon the public streets were continually taking place. No arrangements were made for the disposal of rain-water, and if any pipes existed they discharged their contents into the middle of the street or on to the head of the unfortunate passer-by. Animals were housed and overcrowded in residential quarters, without any provision as to the removal of the resulting refuse. Cesspools were never emptied, and there existed no means whatever whereby the Government could acquire a building or a piece of land which was urgently required for the purpose of building or other improvements. Some of these evils were remedied by the issue of building regulations in 1895, but the only foreign residents to whom these were made applicable were British subjects, and recent experience has shown that there are many points in which they do not meet the requirements of the Administration. A decree providing for these deficiencies is now being prepared, and the issue of a Land Acquisition Decree is also in contemplation.

THE VINTNERS' COMPANY AND THEIR HALL.

Mr. A. H. Kersey is the architect for the extensions which are being made to the Company's Hall in Upper Thames-street, and comprise a building over the two shallow wings and the forecourt. The hall was rebuilt in Three Cranes in the Vintry by Sir Christopher Wren in 1670-1, and contains some old oak carving. Seventy years ago the hall was reconstructed and refronted. The locality derived its name from the three cranes on the wharf by the riverside with which the wine casks were landed from the ships, and the Vintry gave a name to the City Ward. The Vintners, who rank amongst the principal twelve City Companies, are named in a municipal ordinance of 1256; they received a charter from Edward III. in 1364 for exclusive importation of wines from Gascony, and they were incorporated as the Wine Tunners by Henry VI. in 1437. Stow relates that they were at one time called "merchant vintners of Gascoyne," and "great Bourdeous [Bordeaux] merchants of Gascoyne and French wines." They possess an elaborately embroidered pall, the curious "milkmaid cup," and whole-length portraits of Charles II., James II. (who gave them two charters), Prince George of Denmark, and Marie D'Este, with a painting, attributed to Van Dyck, of St. Martin, their tutelar saint, dividing his cloak with the beggar. Their first hall was built in or before 1350 by Sir John Stodie, vintner, and next to it stood the almshouses for thirteen inmates, devised to them in 1446 by Guy Shuldham, which, after the Fire, were removed to Mile End and were rebuilt, with the bequest to that intent of Benjamin Kenton, a munificent benefactor, 1500, to the Company. His monument in Stepney Parish Church was sculptured by Westmacott.

A GARDEN SUBURB, ILFORD, ESSEX.

Mr. Holcombe Ingleby, owner of the Valentines estate, Ilford, has disposed of about 40 acres of the estate to the Town Planning and Garden Cities Company, Ltd., and Sir John Bethell, M.P., will, it is stated, find the capital necessary for developing the property as a garden suburb. Valentines is one of the oldest estates in the county; the house was built by James Chadwick, the son-in-law of Archbishop Tillotson, who made it his residence; the house contained some fine wood-carving ascribed to Grinling Gibbons. Three years ago Mr. Holcombe Ingleby presented the most beautiful portion of the grounds, consisting of 10 acres known as the American gardens, to the parishioners as an addition to the public park at Ilford, whereof 30 acres have already been acquired from out of the grounds appertaining to Valentines. The District Council obtained an option for three years—which have just expired—to buy the 40 acres

Digitized by Google

we mention, at a price of 40,000*l*., but by reason of increasing local rates they cannot effect the purchase. Valentines was famed for its plantations, groves, and fruit-trees; in 1758 Sir Charles Raymond planted the vine, a cutting, whereof the slip which was set ten years afterwards in the Privy Garden at Hampton Court has grown into the well-known Palace vine.

STATUES IN DUBLIN.

In the Parliamentary papers Mr. T. M. Healy asks the Secretary to the Treasury whether the Board of Works have taken down twelve statues of heroic size by the late Sir Thomas Farrell, P.H.A., which ornamented the façades of the Dublin National Library and Museum; when were these statues erected and at what cost; was this an important element in the architectural scheme of these buildings, and are they to be replaced; were several of the statues damaged in course of removal; what expert advice was taken on the allegation that the statues were in danger of falling; is it the fact that only one statue had suffered dilapidation; and, if so, why, instead of restoring the injured statue, were they entirely taken away, unless it is intended to replace them by work equally graceful and ornamental.—Mr. Hobhouse replies that the statues were erected in 1889. Pieces of them began to fall down about five years ago, and inspections were made from time to time by the architectural staff of the Board of Works to ascertain the condition of the stone, which was found to be bad in all three statues of each of the four groups. The parapet and other parts of the building were damaged by the falling pieces of stone, and finally it was decided in July last, after a further inspection, which showed that the stone could not be preserved or repaired, to take the statues down, as they constituted a grave danger to the public. All the figures showed signs of considerable disintegration, some very much more than others, and though the operation was carried out with all possible care, the condition of nine of the twelve figures made further damage unavoidable. The original cost of these statues was about 800*l*., and at least an equal sum would be required to erect groups now. The question whether or not similar groups should now be erected is under consideration.

BRICK-MAKING AT FLETTON.

In the House of Commons on September 22 Captain Faber asked the Chancellor of the Exchequer whether he is aware that at the brick-making centre at Fletton the price of bricks has fallen from 23s. 10½d. in 1898, to 10s. 6d. in 1909, or 1s. 6d. below cost price; and whether he will, therefore, take steps to exempt common brick-clay from the mineral duty? The Financial Secretary to the Treasury (Mr. Hobhouse) replied:—My right hon. friend is not able to say whether the figures quoted by the hon. and gallant member are correct. He is not prepared to introduce a special exemption for brick-clay. Captain Faber: May I ask whether there is legal authority that brick-clay should not be treated as mineral? Mr. Hobhouse: I could not say. Mr. W. Thorne: Is the right hon. gentleman aware that the price of bricks has steadily fallen for three years?

PROPOSED UNDERGROUND RAILWAY FOR VIENNA.

First established in London, the underground railway system has extended to New York, Boston, Paris, Berlin, and other large cities. The latest project of the kind contemplates the construction of two lines for Vienna, intersecting at the centre of the city. The more important of these routes is that between the Sezession and Morzinplatz, a distance of 1,600 metres. At each end a slope is proposed to bring rolling stock up to street level, the tunnel being excavated in cut-and-cover at a minimum depth below the surface, as in the case of the Paris Metropolitan railways. It is anticipated that the value of this line will be considerably augmented by other lines starting from the terminus at the Sezession, and by connexion with the existing tramway system. Probably the passenger receipts will not be sufficient for some time to furnish an adequate return on the capital expenditure, but an important factor is to be found in the benefit to be realised by the municipal electricity department in the sale of current to the proposed undertaking.

ADJUSTABLE ATTACHMENTS FOR THE 2-FT. RULE.

An ingenious device has recently been patented by Mr. E. Wait, of Thornton Heath, the object of the invention being to convert the ordinary 2-ft. rule into a gauge and a simple form of beam compass, by the attachment of one or two clamps which can be applied and taken off almost instantly. Fig. 1

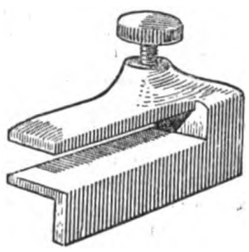


Fig. 1.

is a perspective of the gauge clamp, which is fixed at any required point on the rule by means of the small set-screw. The rule can then be employed as an accurate gauge for marking off lines on boards, or as a depth gauge for mortices. Fig. 2 illustrates the application of the rule as a gauge. Fig. 3 is a view of the clamp adapted for employment

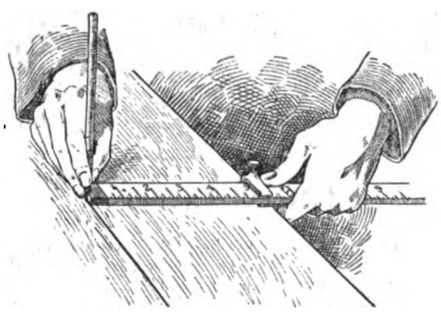


Fig. 2.

as a head for describing circles and curves. At the left hand is a hole through which a bradawl may be inserted to form the working centre, while on the underside is a folding steel point constituting an alternative centre. Fig. 4 is another clamp for attachment to the rule at any required distance from the head, this clamp having a hole and set-screw for the

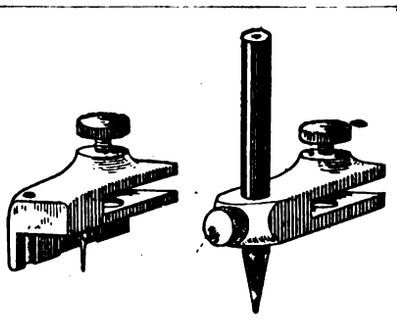


Fig. 3. *Fig.* 4.

reception and fixing of a lead pencil for wood, or a steel scriber for metals. Fig. 5 shows the two clamps attached to a 2-ft. rule, the head being held by an ordinary bradawl. A measuring-rod is even more suitable for this use of the device. The general idea is a good one, and the attachments ought to be in great demand by joiners, builders' foremen, and others.

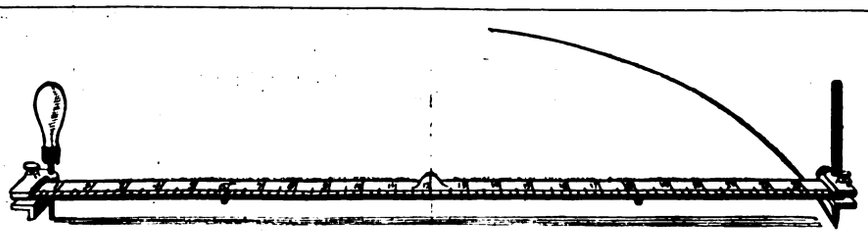


Fig. 5.

THE RIALTO.

This bridge, amongst other architectural monuments in Venice, is causing anxiety. Fissures and cracks are apparent in the main arch as well as in some of the smaller ones above the steps. The bridge built in 1592 by Antonio da Ponte spans the Grand Canal with an arch 27 metres in the clear. It is 22 metres wide, and is divided in its length into three parts by two rows of shops.

MODEL ENGINEERING EXHIBITION AT WESTMINSTER.

We are informed that the model engineering exhibition, which opens at the Royal Horticultural Hall, Westminster, S.W., on Friday, October 15, will contain some exceptionally interesting exhibits. There will be a number of model aeroplanes on view, including the machine designed by Mr. G. P. Smith, which won the gold medal in the recent contest at Wembley Park. Working model steam and electric railways, electric clocks, light machine tools, model motor-boats, a model engineers' workshop in operation, and a working demonstration of wireless telegraphy by the latest Marconi apparatus are some of the attractions which will be presented; while in the competitions for engineering and electrical model-making over a hundred entries have been received. The exhibition will remain open for eight days, from 12 noon till 10 p.m., closing on Saturday, October 23.

UNIVERSITY EXTENSION GUILD.

Mr Banister Fletcher, F.R.I.B.A., will commence a course of twenty-four University Extension lectures on "Ancient Architecture" at the British Museum, by permission of the Trustees, on Tuesday, October 5, at 4.30 p.m. The lectures will deal with Egyptian, Assyrian, Persian, Greek, Roman, Early Christian, and Byzantine Architecture, and will be fully illustrated with lantern slides and photographs. The course will appeal not only to architects, but to art students and the general public, and incidentally to travellers to whom a knowledge of architecture is now recognised as a necessity. The objects in the Museum will be explained in the class held after the lecture. For full particulars and prospectus of the course apply to Miss Gaudet, Hon. Secretary to the Course, 120, Cheyne-walk, Chelsea, S.W. Press representatives for admission to any of the lectures are requested to present their cards. This is, we understand, the first set of lectures to be illustrated by lantern slides at the British Museum, the Trustees having given special permission for this.

THE NEW QUEBEC BRIDGE.

It is announced in the Canadian Press that the Quebec Bridge Commission has settled its differences, and decided upon the general plan for the rebuilding of the bridge. It was not determined whether the new bridge should be of the suspension or cantilever type, and plans will be prepared on both lines and tenders for each called for. Upon the results will depend which type will be adopted. The plans call for a much more substantial structure than the fallen bridge. It will have a height of 150 ft. above tide water for a distance of 600 ft. It will be 85 ft. wide, 24 ft. wider than the original bridge, which was severely criticised as too narrow for its length. This will greatly increase its stability and usefulness. The board also decided to reduce the span from 1,800 ft. to 1,715 ft. by building a new deep-water pier on the Quebec side. Nickel steel will be used in the cantilever for eye bars and compression members, the parts which gave way in the old bridge, and the whole will be so stoutly built that it will weigh half as much again as the collapsed bridge. This will necessitate a considerable increase in the size and strength of the piers already built.

CANCER HOUSES.

Dr. Kenwood, the County Medical Officer of Health for Bedfordshire, in his annual report, deals with the question of "Cancer Houses." He asks: Is our present information sufficient to warrant the conclusions that the disease is most rife in low-lying districts, with surface deposits of alluvium and subsoils of clay, and districts which are liable to flooding? If there are cancer houses, what is it that determines a cancer house? It is probably something proper to the house or site, and quite independent of infection from a preceding case. Is Behla's opinion correct, that the disease occurs in houses with damp basements and cellars? Why does the disease show a preference for the better classes, and no excess in areas overcrowded by the very poor? And why is it prevalent among all domestic mamalia, but more rarely in wild animals? Trustworthy facts with regard to these points are wanted.

MISCELLANEOUS—*Continued on page 374.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xiv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

OCTOBER 1.—**Aberdare.**—HOSPITAL.—The U.D.C. of Aberdare invite competitive designs for a fever hospital for fifty-two patients, including administrative block, outbuildings, etc. Premiums of 100*l*., 50*l*., and 25*l*. are offered for the designs placed first, second, and third respectively. An architectural assessor will be appointed on the nomination of the President of the Royal Institute of British Architects, also a medical assessor to act jointly. Particulars, etc., of the competition, together with a plan of the site, may be obtained from Mr. Thomas Phillips, Clerk, Town Hall, Aberdare, on payment of a sum of 3*l*. 3s.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l*., 100*l*., and 50*l*. for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

* OCTOBER 30. — **Workington.** — SCHOOL. — The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. See advertisement in this issue for further particulars.

NOVEMBER 1. — **Kendal.** — TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l*. is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l*. and 5*l*. respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1. — **Preston.** — GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l*., 30*l*., and 20*l*. Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

DECEMBER 18. — **Headingley, Leeds.** — TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l*. 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l*., 150*l*., and 100*l*. for second, third, and fourth places. Particulars on receipt of a deposit of 2*l*. 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 4. — **Drombiggle.**—REPAIRS TO HOUSE.—Ennis U.D.C. invite tenders for repairs to the caretaker's house at Drombiggle, and for supplying and fitting sashlines in the windows of the Town Hall. Specifications can be seen at office of Mr. Michal J. Carmody, Clerk to Council, Town Hall, Ennis.

OCTOBER 4. — **Droylsden.** — FOUNDATIONS.—Manchester Corporation Gas Committee invite tenders for the excavation, concreting, and brickwork, etc., required in the foundations, etc., for retort installation at their Droylsden Gas Station. Specification and bill of quantities can be obtained on application to Mr. C. Nickson, Superintendent, Gas Department, Town Hall, Manchester. Drawings can be seen, and any other information obtained, on application to Mr. J. G. Newbigging, M.Inst.C.E., Engineer, at his office, Rochdale-road Station.

OCTOBER 4.—**Dundalk.**—FOUNTAIN.—For erection of a fountain and connexion of same with the town waterworks, at the Red Barns-road, near Dundalk, for the R.D.C., in accordance with plan, etc., prepared by Mr. Cahill, C.E., which can be seen at the Council Office, Dundalk Workhouse.

OCTOBER 4.—**Ebbw Vale.**—SCHOOL EXTENSIONS.—Monmouthshire Education Committee invite tenders for extensions and alterations to the Ebbw Vale County Girls' Secondary School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. R. L. Roberts, architect, Abercarn, on payment of a deposit of 2*l*. 2s.

OCTOBER 4.—**Llanelly.**—BOUNDARY WALLS, ETC.—For laying out grounds and the building of boundary walls at the Llanelly Intermediate Schools. Plans, etc., may be seen on application to the Headmaster.

OCTOBER 4.—**Malling.**—SHELTERS.—The Guardians invite tenders for supplying and fixing two revolving consumptive shelters, etc., in accordance with the plan, etc., to be seen at the Workhouse, West Malling.

OCTOBER 4. — **Pontypool.** — EXTENSION, ETC., TO SCHOOL. — Monmouthshire Education Committee invite tenders for extensions and alterations to the Pontypool County Girls' Secondary School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. Benjamin Lawrence, architect, Mount View, Caerau, Newport, on payment of a deposit of 2*l*. 2s. Plans and specification may also be seen at the office of Mr. C. Dauncey, Secretary, County Council Offices, Newport, Mon.

OCTOBER 4.—**Shrewsbury.**—WALL.—For building a retaining wall adjoining the river, Coton Hill-street, for the Corporation. Specifications, etc., may be seen, and form of tender obtained, at the office of Mr. W. Chapple Eddowes, Borough Surveyor, The Square, Shrewsbury, on payment of 20s.

OCTOBER 4. — **Warrington.** — ADAPTATION.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaption of the old Post-office, Warrington, for Labour Exchange. Drawings, etc., may be seen on application to the Postmaster at Warrington. Forms of tender may be obtained on application at H.M. Office of Works, etc., Storey's-gate, London, S.W.

OCTOBER 5.—**Aberavon.**—ALTERATIONS.—Alterations to premises, Cwmavon-road, Aberavon, for Mr. H. W. Key, jeweller. Plans, etc., can be obtained at office of Mr. Frank B. Smith, M.S.A., architect and surveyor, Port Talbot.

OCTOBER 5. — **Handsworth.** — CART SHED. — For a cart shed and raising a boundary wall at the Refuse Destructor Works, Queen's Head-road, Handsworth, for the U.D.C. Conditions of contract, etc., may be seen, and bill of quantities, etc., obtained, on application to Mr. H. Richardson, A.M.Inst.C.E., surveyor.

OCTOBER 6. — **Newcastle-upon-Tyne.**—LATRINES.—The Education Committee invite tenders for the erection of new latrines at Rutherford College. Plans, etc., at the Education Offices, Northumberland-road.

OCTOBER 6.—**North Ormesby.**—SCHOOL ALTERATIONS.—North Riding of Yorkshire C.C. Education Committee invite tenders for certain alterations and improvements proposed to be executed at the North Ormesby, Smeaton-street, Council Boys' School. Names to Mr. J. C. Wrigley, Secretary, Education Department, County Hall, Northallerton.

OCTOBER 6.—**Oldham.**—PIGGERIES.—For erection of piggeries and stores at the Workhouse for the Guardians. Plans, etc., may be seen at the office of Mr. C. T. Taylor, A.R.I.B.A., architect, 10, Clegg-street, Oldham.

OCTOBER 6.—**Stroud.**—ADDITIONS.—For additions to casual wards, for the Guardians. Drawing, etc., may be seen on application to the architect, Mr. G. P. Milnes, 6, Rowcroft, Stroud.

OCTOBER 7.—**North Sunderland (Northumberland).**—ALTERATIONS.—For the alterations, etc., at the North Sunderland Presbyterian Church, for the Trustees. Plans, etc., may be seen on application to Mr. J. P. Ewing, Sea Houses, Chathill.

OCTOBER 7.—**Oxley.**—STORE AND OFFICE.—Cannock R.D.C. invite tenders for the erection of a small store and office at their Sewage Outfall Works at Oxley. Particulars may be obtained from Mr. Herbert M. Whitehead, Engineer to the Council, Penkridge.

OCTOBER 8.—**Carlisle.**—STAIRCASE.—For an external iron staircase at Harraby Hill House, Carlisle, for the Carlisle Board of Guardians; also for the breaking out of doorways, etc. Plans, etc., can be seen, and all information obtained, at the offices of Mr. George Armstrong, architect, 24, Bank-street, Carlisle.

OCTOBER 8. — **Coventry.** — ALTERATIONS, ETC., TO CLUB.—Alterations and additions to the Stanton Club, Stoney Stanton-road, Coventry, for Messrs. Phillips & Marriott, Ltd. Plans, etc., may be seen, and particulars obtained, at the office of Mr. Herbert W. Chattaway, architect, Trinity-churchyard, Coventry.

OCTOBER 8. — **Devizes.** — POLICE BUILDINGS.—For erection of house of detention at the Central Police Barracks, Devizes, for the Wilts C.C. Plans, etc., may be obtained on application to the County Surveyor, County Offices, Trowbridge, on payment of 1*l*. 1s.

OCTOBER 8.—**Longwood.**—HOUSE.—Erection of one dwelling-house, Longwood-road, Longwood. Mr. Joe Ainley, architect, Britannia-road, Slaithwaite.

OCTOBER 8. — **Wakefield.** — ADDITIONS. — The West Riding Education Committee invite whole or separate tenders for High and Low Bishopsides, Glasshouses Provided School—additions and alterations (builder, joiner, plumber, plasterer, painter). Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l*. in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

* OCTOBER 9.—**Crewe.**—ADDITIONS TO SCHOOLS.—The Crewe Education Committee invite tenders for additions and alterations to the Bedford-street Schools. See advertisement in this issue for further particulars.

OCTOBER 11.—**Capcoch.**—SCHOOL.—Aberdare U.D.C. Education Committee invite tenders for the erection of a new mixed school and altering present mixed and infants' schools at Capcoch, near Aberdare. Plans, etc., may be inspected, and a copy of bills of quantities obtained, at the Education Offices, or at the office of the architect, Mr. T. Roderick, Clifton-street, Aberdare, upon payment to Mr. John Morris, Director of Education, Education Offices, Aberdare, of the sum of 2*l*. 2s.

OCTOBER 11.—**Taunton.**—VESTRY.—Tenders are invited from Taunton builders and contractors only for proposed new vestry at the Church of St. Mary Magdalene, Taunton. Quantities may be obtained on payment of 1*l*. 1s. deposit, and drawings may be seen on application to Messrs. Sprankling & Price, architects, 16, Hammet-street, Taunton.

OCTOBER 12. — **Bradford.** — EXTENSION OF BOILER-HOUSE.—The Guardians invite tenders for (1) builders' work, all trades, to be let in one contract; (2) atmospheric steam heating engineer's work; (3) boilermaker's work in connexion with extension to the boiler-house and the system of steam heating at the Union Workhouse, Horton-lane, Bradford. Drawings, etc., may be seen, and bills of quantities, etc., obtained, on payment of 1*l*. 1s. deposit, on application to the Engineer and Architect to the Board, Architect's Department, 22, Manor-row, Bradford.

OCTOBER 12.—**Falmouth.**—VILLA.—For a detached villa on the Gyllyngdune Estate, Falmouth. Plans, etc., may be seen at the office of Mr. H. E. Tresidder, architect, 23, Church-street, Falmouth.

OCTOBER 12. — **Snatchwood, Abersychan.** — WALLS.—For the excavation for formation of site, building of boundary retaining walls, formation and making of roads, and for the erection of ten houses at Snatchwood, Abersychan, for the Abersychan, British, and Talywain Industrial Co-operative Society, Ltd. Plans, etc., may be seen at the office of Mr. A. Gordon Babbidge, architect and surveyor, Clarence-chambers, Pontypool.

OCTOBER 13. — **Dartford.** — ALTERATIONS.—For conversion of Old Bank House into offices and construction of a Council Chamber, etc., for the U.D.C. Specification, etc., to be seen upon personal application at the offices of the Surveyor, the Council Offices, Dartford.

OCTOBER 13. — **Middleton.** — SCHOOL.—Middleton Education Committee invite tenders for the erection of a secondary School in Rectory-street, Middleton. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 6, Riddlesdale-place, Preston, by payment of a deposit of 3*l*.

* OCTOBER 13. — **Tottenham, N.** — DISINFECTOR HOUSE.—The Metropolitan Asylums Board invite tenders for a new disinfector house at the North-Eastern Fever Hospital, St. Ann's-road, Tottenham, N. See advertisement in this issue for further particulars.

* OCTOBER 14.—**Bletchingley.**—DINING-HALL.—The Guardians of the Godstone Union invite tenders for new dining-hall, etc., at the Workhouse, Bletchingley, near Redhill. See advertisement in this issue for further particulars.

OCTOBER 14-20. — **Grimsby.** — SCHOOL.—For a new Council School in Strand-street, Grimsby, for the Education Authority. Plans may be seen at the offices of Mr. Herbert C. Scaping, architect, Court-chambers, Grimsby, up to October 14. Bills of quantities will be supplied on receipt of a deposit of 2*l*. 2s.

OCTOBER 14. — **Port Talbot.** — RIDING SCHOOL, DRILL HALL, ETC.—The Glamorgan County Territorial Force Association invite tenders for the erection and completion of proposed riding school, drill hall, and headquarters for the Glamorgan Royal Horse Artillery, at Port Talbot. The plans, etc., may be inspected at the office of Mr. W. H. Dashwood Caple, F.R.I.B.A., 2, Church-street, Cardiff, from whom copies of the quantities may be obtained on deposit of 1*l*. 1s.

* OCTOBER 15.—**Halstead.**—SCHOOL.—The Kent Education Committee invite tenders for a new Council School at Halstead, Kent. See advertisement in this issue for further particulars.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 15. — **Lismore.** — COTTAGES. — Lismore R.D.C. invite tenders for the building of cottages. Plans, etc., can be obtained from the Clerk to the R.D.C. on payment of 5s.

✱ OCTOBER 15. — **Wanstead.** — SCHOOL.—The Essex Education Committee (Wanstead District Sub-committee) invite tenders for one-story school for infants, Ingatestone-road, Wanstead, Essex. See advertisement in this issue for further particulars.

OCTOBER 16. — **Bardsea.** — POLICE DWELLING.—The Standing Joint Committee of the Lancashire C.C. invite tenders for the erection of a new police dwelling at Bardsea, near Ulverston. The plans may be seen, and bills of quantities obtained, by payment of a deposit of 1*l.*, at the office of Mr. Henry Littler, County Architect, 16, Ribblesdale-place, Preston.

OCTOBER 16.—**Brumby and Frodingham.**—WALL. —The U.D.C. invite tenders for the erection of a boundary wall round the land to be added to the present Cemetery. Plans can be seen, and specifications obtained from Mr. Joe Green, Surveyor, Council Offices, Frodingham, Scunthorpe, Lincolnshire.

✱ OCTOBER 16.—**Ilford.**—IRON FENCING, ETC.—The Ilford Education Committee invite tenders for erecting iron fencing and entrance gates, etc., in front of Valentine's School, Beehive-lane, Ilford. See advertisement in this issue for further particulars.

OCTOBER 16.—**Middleton.**—SANITARY CONVENIENCES. —The Corporation of Middleton invite tenders for the erection of sanitary conveniences near the Fountain. Plans may be seen, and specification, etc., obtained, from Mr. W. Welburn, Borough Surveyor, Town Hall, Middleton.

OCTOBER 16. — **Saffron Walden.** — ADDITIONS TO KING EDWARD VI. GRAMMAR SCHOOL.—The Governors invite tenders for the erection of an additional class-room with rooms over and adjoining thereto, and for certain alterations to the existing buildings. Copies of drawings, etc., can be obtained from the architect, Mr. M. C. Robinson, of Wenden, Saffron Walden.

✱ OCTOBER 19.—**North Woolwich.**—SCHOOL BUILDINGS.—The East Ham Education Committee invite tenders for the superstructure of school buildings at Storey-street, North Woolwich. See advertisement in this issue for further particulars.

✱ OCTOBER 19.—**North Woolwich.**—SCHOOL BUILDINGS.—The East Ham Education Committee invite tenders for the pile foundations of school buildings at Storey-street, North Woolwich. See advertisement in this issue for further particulars.

OCTOBER 20. — **Great Houghton.** — SCHOOL.—The West Riding Education Committee invite whole or separate tenders for Great Houghton new school. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

✱ OCTOBER 20. — **Truro.** — COUNCIL OFFICES. — The Cornwall C.C. invite tenders for erection of Council Offices, Truro. See advertisement in this issue for further particulars.

OCTOBER 20.—**Wheatley.**—SCHOOL ENLARGEMENT.— The West Riding Education Committee invite whole or separate tenders for enlargement, Beckett-road Provided School. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

OCTOBER 26.—**Bath.**—DWELLINGS.—Erection of ten or more dwellings for persons of the labouring classes in Middle-lane, Dolemeads, Bath. Drawings, etc., may be seen, and quantities, etc., obtained, at the City Surveyor's Office, Guildhall, Bath, on payment of 2*l.* 2s.

✱ OCTOBER 26. — **Walthamstow.** — SCHOOL. — The Walthamstow Education Committee invite tenders for proposed boys' school on Bull's Farm site, Higham Hill. See advertisement in this issue for further particulars.

OCTOBER 26. — **Warrington.** — FERRO-CONCRETE BRIDGE.—The Bridges Committee invite designs, specifications, and tenders for a single span, ferro-concrete bridge across the River Mersey, in Warrington, and training walls. Conditions and particulars, with plans of site and existing bridge, may be obtained from the office of the Borough Engineer and Surveyor, Town Hall, Warrington, on payment of 1*l.* 1s., which is to be made payable to the Borough Treasurer, Warrington.

NOVEMBER 2. — **Newtonmore.** — HOUSE. — Carpenter, slater, plasterer, and painter works of house to be erected at Newtonmore. Plans, etc., may be seen with the architect, Mr. Alex. Cattanach, Kingussie.

NO DATE. — **Bristol.**—CLUB PREMISES.—The Committee of Bristington and St. Anne's Unionist Club invite builders to tender for the erection of new premises in Wick-road, Bristington. Apply by letter only to Mr. Harold Smith, architect, 23, Clare-street, Bristol.

NO DATE. — **Lichfield.** — ADDITIONS TO VICTORIA NURSING HOME.—Names and addresses to the architect, Mr. William Perry, 39-41, Bore-street, Lichfield.

NO DATE.—**Morley.**—ALTERATIONS, ETC.—Boundary walls, laying-out of grounds, including formation of tennis lawn, carriage drive, asphalting, etc.; also sundry alterations to residence, St. Andrew's-avenue, Morley, for Mr. Alex. Wilson. Names to Mr. Josiah Auty, Union Bank-chambers, Morley.

NO DATE. — **Sandsend.** — ADDITIONS.—A story to "The Bungalow," Sandsend, and other works thereto, for Mrs. Frater, of Peterhead. Apply to No. 3A, Flowergate. Mr. Thomas Dowson, architect and surveyor, Whitby.

✱ NO DATE. — **Stafford.** — REBUILDING.—Messrs. Riley's Stafford Brewery, Ltd., invite tenders for rebuilding of Falcon Inn, Foregate, Stafford. See advertisement in this issue for further particulars.

NO DATE. — **Thornton.** — EXTENSION OF SCHOOL.— Extension of Thornton Grammar School. Plans, etc., may be seen at office of Mr. W. Pickels, architect, Thornton, and parties wishing to tender must send their names to him.

ENGINEERING, IRON, AND STEEL.

OCTOBER 4. — **Stonehaven, etc.** — STEEL AND IRON WORK.—The Directors of the Caledonian Railway Company invite tenders for the work to be executed in the renewal of the superstructures of seven underbridges on the main line near Stonehaven, the Dundee and Perth Branch, the Dundee and Forfar Branch, and the Arbroath and Guthrie Branch. Drawings may be seen at the office of the Company's District Engineer, General Station, Perth, where copies of the specification and schedule may be obtained on payment of 2*l.* 2s.

OCTOBER 4. — **Uddingston, etc.** — RENEWAL OF UNDERBRIDGES. — The Directors of the Caledonian Railway Company invite tenders for the steel work to be executed in the renewal of one underbridge on the Uddingston and Holytown Line, at 3 miles; one underbridge on the Cleland and Midcalder Line, at 4 miles 50 chains; and one overbridge on the Motherwell Deviation Line, at 89 miles 61 chains. Drawings may be seen at the offices of the Company's District Engineer, 3, Germiston-street, Glasgow, where copies of the specification, etc., may be obtained on payment of 2*l.* 2s.

OCTOBER 7. — **Swansea.**—BOILERS. — The Property Committee invite tenders for the provision of two low-pressure hot-water boilers at the Free Library Buildings, Alexandra-road, Swansea. Specifications, etc., may be obtained at the office of Mr. Marcus Hoskins, F.S.I., Borough Estate Agent, Coleridge House, Swansea.

OCTOBER 8.—**Carlisle.**—IRON STAIRCASE.—The Guardians invite tenders for supplying and erecting an external iron staircase at Harraby Hill House, Carlisle. Also for the breaking out of doorways, etc., in connexion with the same. Plans, etc., can be seen, and all information obtained, at the offices of Mr. George Armstrong, architect, 24, Bank-street, Carlisle.

OCTOBER 8.—**Potto (Yorks).**—BRIDGE WORKS.—For concrete abutments and wing walls, etc., for the iron bridge to be erected over Goulton Beck, near Potto Station, for the Stokesley R.D.C. Specification can be seen at and further particulars obtained from the office of Mr. W. H. Dixon, surveyor, Kirkby-in-Cleveland, near Stokesley.

OCTOBER 11.—**London.**—GIRDERS.—The Directors of Great Western Railway invite tenders for the supply of about 310 tons of steel bridge girders and other iron and steel work of British manufacture—to be let in two contracts. Plans, etc., may be seen, and forms of tender and bills of quantities obtained, at the office of the Engineer at Paddington Station, London.

OCTOBER 11.—**Winchester.**—INSTALLATION OF ELECTRIC LIGHT AT THE NEW OFFICES, ST. JAMES-STREET, WINCHESTER.—On deposit of 2*l.* 2s., plans, specification, etc., may be seen at the office of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. No information will be sent by post. All deposits must be by cheque, made payable to Hants C.C. and crossed Bank of England.

OCTOBER 12.—**Bradford.**—HEATING, ETC.—Bradford Poor Law Guardians invite tenders for:—(1) Builders' work, all trades, to be let in one contract; (2) atmospheric steam heating engineer's work; (3) boilermaker's work, in connexion with extension to the boiler-house and the system of steam heating at the Union Workhouse, Horton-lane, Bradford. Drawings, etc., may be seen, and bills of quantities and specifications obtained, on payment of 1*l.* 1s. deposit, on application to the Engineer and Architect to the Board, Architect's Department, 22, Manor-row, Bradford.

OCTOBER 12. — **Canterbury.** — BOILER. — Supplying and fixing of a new boiler in connexion with the heating apparatus and for other incidental works at the Beaney Institute, for the Committee. Particulars of the works may be obtained at the office of Mr. Arthur C. Turley, City Engineer, Municipal Buildings, Guildhall-street, Canterbury.

OCTOBER 13. — **Dartford.** — WIRING. — For wiring Council Chamber and Offices at Old Bank House, Dartford, for the U.D.C., in accordance with specification, etc., which may be seen upon personal application at the office of the Electrical Engineer, the Electricity Works, Dartford.

OCTOBER 18.—**Dover.**—WATER WORKS—EXTENSION OF HEADINGS, ETC.—The T.C. invite tenders for sinking a working shaft and extending the headings at the Water Works, Dover. Forms of tender, etc., may be obtained on payment of 2*l.* 2s., and conditions of contract and plans inspected at the office of the Borough Engineer, Mr. W. C. Hawke, A.M.Inst.C.E., Maison Dieu House, Biggin-street, Dover.

OCTOBER 18.—**Netheravon.**—BRIDGE.—(1) For the supply of steelwork required for the reconstruction of Haxon Bridge, at Netheravon, near Salisbury; (2) for masonry and brickwork, and the erection of the steelwork for the bridge, for the Roads and Bridges Committee of the Wilts C.C. Plans, etc., may be had on application to the County Surveyor, County Offices, Trowbridge.

OCTOBER 18.—**Pinder Green and Scholey Hill.** —SEWERAGE AND SEWAGE DISPOSAL WORKS.—Methley U.D.C. invite tenders for supplying and erecting gas engines and pumps. Full particulars, etc., may be obtained at the offices of the Engineer, Mr. John S. Richardson, East Parade-chambers, Leeds, on payment by cheque of 2*l.* 2s.

OCTOBER 23. — **Radcliffe.** — FOOTBRIDGE. — For construction of a footbridge over the River Irwell, from Lomax-street to Cawdaw, for the Radcliffe U.D.C. Drawings, etc., may be obtained on application to Mr. W. L. Rothwell, Engineer to the Council, Council Offices, Radcliffe, on payment of 1*l.* 1s.

NOVEMBER 9.—**Antwerp.**—CONSTRUCTION OF A DRY DOCK.—The College des Bourgmestre et Echevins invite tenders for the construction of a dry dock and quay wall at Quai Est (No. 61) of the Lefebvre Basin. Estimate, 4,361,000 francs. Deposit, 500,000 francs. Plans and specifications can be seen at Room 4 and at the Secretary's office, Hôtel de Ville. Price of specification, 5 francs.

MISCELLANEOUS.

OCTOBER 2.—**Windsor.**—DUST VANS.—The Corporation of New Windsor invite tenders for the supply of four new dust vans. Pattern van and specification may be seen upon application, and form of tender obtained, at the office of the Borough Surveyor, Mr. E. A. Stickland, between 1 and 2 daily.

OCTOBER 4.—**Alnwick.**—CATTLE PENS.—The U.D.C. invite tenders for construction of twenty-two additional store cattle pens, each 16 ft. by 12 ft., in creosoted timber. Revised plans and specifications to be seen at U.D.C. Offices, Green Batt, Alnwick.

OCTOBER 4. — **Bromley.** — STEAM ROLLER.—Bromley R.D.C., Kent, invite tenders for the supply of a steam roller on hire. Forms of tender may be obtained from Mr. Edward Haslehurst, Clerk to the Council, Council Offices, Park House, Beckenham-lane, Bromley, Kent.

OCTOBER 4.—**Taunton.**—WIRE FENCING.—The T.C. invite tenders for the supply and delivery at Taunton Station of about 275 lin. yds. of wire fencing, together with straining pillars, footpath gate, and an ordinary hand gate complete, in accordance with the particulars, which can be obtained at the Borough Surveyor's Office.

OCTOBER 5. — **London.** — CARRIAGE FITTINGS.—The South Indian Railway Company, Ltd., invite tenders for the supply of carriage fittings for bogie corridor third-class carriages. Specifications and forms of tender may be obtained at the Company's Offices. A charge, which will not be returned, will be made of 20s. for each copy of the specification. Copies of the drawings may be obtained at the office of Mr. Robert White, M.Inst.C.E., Consulting Engineer to the Company, 3, Victoria-street, Westminster, London, S.W., on payment of 5s. per sheet.

OCTOBER 6. — **Blackfyne.** — EXTENSION OF CRICKET GROUND.—The Consett and District Cricket Club invite tenders for the work. Plans and specifications may be seen at office of Mr. John J. Eltringham, architect and surveyor, Derwent-street, Blackhill.

OCTOBER 6.—**Hollingbourn.**—STEAM ROLLERS.—The R.D.C. invite tenders for the supply of steam rollers for use on the District roads of the Council during a period of about forty-five days. All information can be obtained on application to Mr. J. Stanley Roper, Surveyor to the Council, Hollingbourn, Maidstone.

OCTOBER 6. — **Llandudno.** — GRAVEL CRUSHER. — Llandudno U.D.C. require a second-hand gravel crusher or granulator with screens. All offers to be sent to Mr. E. P. Stephenson, Engineer, Town Hall, Llandudno.

OCTOBER 6. — **Newport, Isle of Wight.** — COKE BREAKER.—The Corporation invite tenders for the supply and fixing complete at the Waterworks, Carisbrooke, I.W., of a best quality coke breaker on the jaw principle. Forms of tender and specification may be obtained at office of Mr. T. Ross Pratt, Town Clerk, Town Clerk's Office, Newport, I.W.

OCTOBER 7.—**Batley.**—FIXING PIPES.—Batley Education Committee invite tenders for the supply and fixing of spouting and fall pipes at Park-road Council School and all the premises in connexion therewith. Mr. G. R. H. Danby, M.A., Director of Education, Education Offices, Batley.

OCTOBER 11. — **Whitefield.** — SEWER VENTILATING COLUMNS.—Whitefield U.D.C. invite tenders for the supply of sewer ventilating columns. Full particulars may be obtained from Mr. C. H. Wright, the Surveyor to the Council.

OCTOBER 12. — **Blaydon.** — SCAVENGING, ETC.—The Blaydon U.D.C. invite tenders for the removal and disposal of contents of ashpits, house refuse, etc., at Spen, Barlow, High Thornley, etc. Specification, etc., may be obtained from Mr. Robert Biggins, Sanitary Inspector, at the offices of the Council, Blaydon-on-Tyne.

OCTOBER 12.—**Southampton.**—CARTING MATERIAL.— The Corporation invite tenders for the cartage of granite, flint, gravel, and sand from the depots and stations to various positions within the Borough. Specification may be seen, and form of tender obtained, at the Borough Engineer's Office, 125, High-street.

OCTOBER 14. — **Birkenhead.**—PURIFIERS, ETC.—The Corporation of Birkenhead invite tenders for the supply and erection of four cast-iron purifiers, 40 ft. by 35 ft. by 5 ft., together with steel superstructure, valves, connexions, engine-house, oxide elevator, etc. Copies of the specification, etc., can be obtained by approved applicants on payment of 3*l.* 3s. Mr. J. Fearnley, Town Clerk, Town Hall, Birkenhead.

OCTOBER 16. — **Brumby and Frodingham.** — STREET LIGHTING, ETC.—The U.D.C. of Brumby and Frodingham invite tenders for lighting their streets by means of electricity. Specification, etc., may be obtained on payment of 10s. 6d. on application to Mr. Joe Green, Surveyor, Council Offices, Frodingham, Scunthorpe, Lincolnshire.

NO DATE. — **Belfast.** — LAYING OUT GROUND.—For laying out cricket field. For particulars apply Mr. E. J. Scott, 10, Wellington Park-avenue, Belfast.

NO DATE. — **Burnley.** — REPAIRING SLATES, ETC.— Tenders wanted for repairing slates, painting, papering, 44, New Hall-street, Burnley. Apply, Mr. J. Haworth, 14, Dale-street, Ivy Cottage, Radcliffe.

PAINTING, etc.

OCTOBER 4. — **Heckmondwike.** — PAINTING, ETC. — Tenders are invited for the outside painting and decorating in connexion with the chapel, school, parsonage, and cottage premises of Upper Independent Chapel, Heckmondwike. Specifications of the work required may be had from Mr. R. L. Bowling, Jermyn House, Heckmondwike.

OCTOBER 4.—**Romford.**—PAINTING.—The Guardians invite tenders for painting the outside of the Workhouse Infirmary. Specification can be seen at the Workhouse upon application to the Master.

OCTOBER 4.—**Taunton.**—PAINTING.—The T.C. invite tenders for the cleaning down and painting of the bridge carrying the high-level sewer at the sewage works; also for the tar painting of the 4-ft. diameter cast-iron high-level sewer. Specification may be seen, and form of tender obtained, at the Borough Surveyor's Office.

Digitized by Google

PAINTING, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 5.—**Burton-upon-Trent.**—PAINTING.—The Corporation of Burton-upon-Trent invite tenders for the external painting of cottages, etc., on the sewage farm. Specifications, etc., can be obtained from Mr. George T. Lynam, Borough Engineer and Surveyor, Town Hall.

OCTOBER 5.—**Mantymoel.**—PAINTING, REPAIRS, ETC.—Tenders are invited by the Renovation Committee of Horeb English Baptist Chapel, Nantymoel, for painting, repairs, and ventilating windows. Specifications may be seen with Rev. H. R. Byatt, 8, Brookland-terrace.

OCTOBER 5.—**Rochdale.**—PAINTING.—The Cemetery Committee invite tenders for the inside painting work required at the mortuary chapels in the Cemetery. Further particulars may be obtained at the Borough Surveyor's Office.

OCTOBER 9.—**Ashington.**—PAINTING.—Ashington Industrial Co-operative Society require tenders for the painting of the whole of their premises at Ashington, Hirst, and Seaton Hirst; also thirty-three cottages. Mr. John Magin, Secretary.

✱ OCTOBER 13.—**Fulham, S.W.**—PAINTING, ETC.—The Metropolitan Asylums Board invite tenders for painting and repairing work at the Mead Ambulance Station, Carnwath-road, Fulham, S.W. See advertisement in this issue for further particulars.

NO DATE.—**Larbert.**—PAINTING.—Painting about 400 tramway standards, two coats. Paint supplied. Bodies, stating price per pole and per bracket arm, to the General Manager, Falkirk and District Tramway Company, Tramway Depôt, Larbert-road, Larbert.

ROADS, SANITARY, AND WATER WORKS.

OCTOBER 4.—**Cleckheaton.**—MAKING-UP.—For making-up a portion of Mount-street, for the U.D.C. Plans may be seen, and specification, etc., obtained, at the office of the Surveyor, Mr. Clifton Lund, Town Hall, upon payment of 1*l.* 1s.

OCTOBER 4.—**Honley.**—SETTING.—Honley U.D.C. invite tenders for setting a portion of Towngate, Honley. For particulars apply to Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

OCTOBER 4.—**Taunton.**—STREET WORKS.—The T.C. invite tenders for the carrying out of the above works in George-street, Cheddon-road, in accordance with the plans, etc., prepared by the Borough Surveyor. Forms of tender can be obtained at the office of Mr. D. Edwards, A.M.Inst.C.E., Borough Surveyor, Municipal Buildings, Taunton.

OCTOBER 4.—**Warwick.**—ROAD.—For the construction of the Lower Cape-road, for the T.C. Plans, etc., may be seen, and forms of tender obtained, on application to the Borough Surveyor, Mr. E. Melville Richards, C.E., A.M.Inst.C.E.

OCTOBER 5.—**Mansfield.**—MAKING-UP.—For making-up of Gladstone-street and Redcliffe-road, for the Corporation. Specification, etc., may be seen, and bill of quantities obtained, at the office of Mr. Thos. P. Collinge, Borough Engineer and Surveyor, Exchange-row, Mansfield.

OCTOBER 6.—**Lanchester.**—SEWAGE DISPOSAL WORKS.—Plans, etc., may be seen at the office of Mr. G. W. Westgarth, Surveyor, Lanchester.

OCTOBER 6.—**Loughlinstown (Ireland).**—SEWAGE PURIFICATION WORKS.—For sewage purification works, for the Dundrum district, for the Rathdown No. 1 R.D.C., in accordance with plans, etc., by Mr. P. H. M'Carthy, M.A., B.E., M.I.C.E.I., which can be seen at the Clerk's Office, Loughlinstown.

OCTOBER 6.—**Royston.**—MAKING-UP.—For making-up Victoria-crescent and Victoria-place, Royston, for the U.D.C. Plans, etc., can be seen on application to the Surveyor, Mr. T. W. Witts, Town Hall, Royston.

OCTOBER 7.—**Falmouth.**—SURFACE-WATER DRAINAGE.—Tenders are invited for providing and laying cast-iron and stoneware pipes and other work in connexion with surface-water drainage. Plans, etc., may be seen, and further information obtained, on application at the Borough Surveyor's Office.

OCTOBER 7.—**Hounslow.**—STREET WORKS.—For making-up private streets:—(1) Albert-road, Hounslow; (2) Hartham-road, Isleworth; (3) Highfield-road, Spring Grove; (4) Newton-road, Isleworth; (5) Percy-road, Isleworth; (6) St. Mary's-crescent, Spring Grove, for the Heston and Isleworth U.D.C. Plans, etc., may be seen, and bills of quantities, etc., obtained from Mr. J. G. Carey, the Engineer and Surveyor to the Council, Council House, Hounslow, on payment of 1*l.* 1s.

OCTOBER 8.—**Cultra.**—SEWER.—Castlereagh R.D.C. invite proposals for the construction of a sewer on Farm-road, Cultra, in accordance with plan, etc., which may be seen at office of Mr. Joseph W. Robb, Clerk to the R.D.C., Council Office, Union Workhouse, Belfast.

OCTOBER 8.—**Yardley.**—PAVING.—For supplying and laying about 970 super. yds. of concrete slab paving on the Stratford and Warwick main roads, for the Worcestershire C.C. Specification, etc., may be obtained on application to Mr. J. H. Garrett, County Road Surveyor, Shire Hall, Worcester.

OCTOBER 9.—**Abersychan.**—SEWER.—For laying a sewer from Coombs' Cross, Garndiffaith, to the Varteg Waste, for the U.D.C. Plan, etc., can be seen by appointment at the Surveyor's Office, Abersychan.

OCTOBER 11.—**Royton.**—SEWERING.—The U.D.C. of Royton invite tenders for the sewering of Charles-street (lower portion), Rainshaw-street, Spring Garden-street (lower portion), Whittaker-street, Perth-street (part of), Milne-street, and Caley-street. Plans may be seen, and conditions, etc., obtained, on application to the Surveyor at the Town Hall, Royton.

✱ OCTOBER 11.—**Streatham.**—ROADMAKING.—The Wandsworth B.C. invite tenders for making-up and paving of part of Baldry-gardens, Streatham. See advertisement in this issue for further particulars.

OCTOBER 12.—**Lewisham.**—KERBING, ETC.—The Council is prepared to receive tenders for kerbing and channelling the roadways and paving the footpaths with artificial stone (in separate contracts) of Newlands Park (part of), Sydenham; also for rebuilding the retaining wall in Brookbank-road, Lewisham. The plans, etc., may be seen, and forms of tender obtained, at the Town Hall, Catford (Surveyor's Department). In the case of the road works, copies of the specification may be had on payment of the sum of 5s. in each case, which will not be returned.

OCTOBER 13.—**Abbots Bromley, Uttoxeter.**—SEWERAGE.—The R.D.C. of Uttoxeter invite tenders for works of sewerage in the village of Abbots Bromley. Plans, etc., may be seen and obtained on application to the surveyor, Mr. W. Walker, Carter-street, Uttoxeter.

OCTOBER 13.—**Enfield.**—MAKING-UP.—The U.D.C. of Enfield invite tenders for making-up the private street known as Clarence-road (part of), Ponders End. Plan, etc., can be seen, and form of tender, etc., obtained, on application to Mr. Richard Collins, the Council's Surveyor, Public Offices, Enfield, Middlesex.

OCTOBER 15.—**Farnley.**—PUMP-HOUSE AND RESERVOIR.—The Waterworks Committee of the Leeds City Council invite tenders for the construction of a small service reservoir and pump-house at Farnley, near Leeds (contract No. 87). Plans may be seen, and specifications and tender form obtained from Mr. Chas. G. Henzell, M.Inst.C.E., Waterworks Engineer, Leeds, on payment of 1*l.* 1s.

✱ OCTOBER 16.—**Ilford.**—TAR PAVING, ETC.—The Ilford Education Committee invite tenders for levelling and tar paving the playgrounds of Uphall School, Ilford, and Goodmayes School, Green-lanes, Ilford. See advertisement in this issue for further particulars.

OCTOBER 17.—**Pontardawe.**—SEWERAGE AND SEWAGE DISPOSAL WORKS.—The R.D.C. invite tenders for the construction of about 9,700 yds. of 15-in., 12-in., and 9-in. diameter cast-iron and stoneware pipe sewers at Clydach-on-Tawe. Drawings may be seen, and specification, etc., obtained, at the office of Mr. John Morgan, Engineer to the Council, at Pontardawe, on deposit of a 5*l.* Bank of England note.

OCTOBER 18.—**Dolwyddelen.**—WATER WORKS.—Geirionydd R.D.C. invite tenders for the construction of an extension of water works, and for constructing an embankment and incidental works at Yr Hesglwyn, Dolwyddelen. Plans, etc., may be seen at the Union Offices, Llanrwst.

OCTOBER 18.—**Weardale.**—ROAD.—The R.D.C. invite tenders for the construction of new road from Eastgate to Rookhope. Plans may be seen, and specifications, etc., may be obtained, on application to Mr. G. W. Egglestone, the Highway Surveyor, at his offices at the Board-room of the Guardians in Stanhope. A deposit of 1*l.*

OCTOBER 19.—**Chislehurst.**—STREET WORKS.—Chislehurst U.D.C. invite tenders for making-up of Walden-road and Queen's-road and improvements in Park-road. Forms of tender, with a copy of the specifications attached, can be obtained on application being made at the Council Offices, situate in Church-row, Chislehurst, on payment of the sum of 1*l.* The plans, etc., may also be seen and inspected at the Council Offices.

OCTOBER 19.—**Thornley and Wheatley Hill.**—PAVING.—Easington R.D.C. invite separate tenders for the paving, etc., of the following private streets:—Back Hartlepool-street, Thornley, and back Church-street, Wheatley Hill. A copy of the general conditions, etc., may be obtained on application to Mr. Gilbert Waterhouse, surveyor, Easington Castle Eden, R.S.O., if accompanied by a cheque (payable to the Easington R.D.C.) for 2*l.*

OCTOBER 20.—**Oldham.**—FILTERS.—Oldham Health Committee invite tenders for the construction of percolating filters, rotating arm sprinklers, settling pond, and contingent works. Plans may be seen, and quantities obtained, at the Borough Surveyor's office, Town Hall, Oldham.

OCTOBER 21.—**Croydon.**—PRIVATE STREET WORKS.—Croydon R.D.C. invite tenders for making-up private streets, Beddington, Coulsdon, and Mitcham. Plans, etc., prepared by the Council's Surveyor, Mr. R. M. Chart, F.S.I., can be inspected, and forms of tender obtained, at his office, Katharine-street, Croydon, on payment of 2*l.*

OCTOBER 21.—**Croydon.**—SEWER WORKS.—Croydon R.D.C. invite tenders for the construction of about 4,300 ft. of 9-in. pipe sewer in the Parish of Coulsdon, and about 12,000 ft. in the Parish of Beddington, with manholes, etc. Plans and specifications prepared by Mr. R. M. Chart, F.S.I., Surveyor, can be inspected at the Council's Offices, Katharine-street, Croydon, and copies of quantities, etc., obtained, on depositing the sum of 5*l.*

STONES, MATERIAL, AND STORES.

OCTOBER 4.—**Manchester.**—STORES.—Lancashire and Yorkshire Railway Directors invite tenders for the supply of the Company's ordinary requirements of articles during the twelve months ending October 31, 1910. Further particulars and forms of tender may be obtained on application to Mr. Waring, Stores Department, Osborne-street, Manchester, where parties are requested to call and examine the samples before tendering.

OCTOBER 4.—**Rosslynlee.**—ARTICLES, ETC.—Articles for Mid-Lothian and Peebles District Asylum, Rosslynlee. Forms of tender can be had by applying to the Clerk and Treasurer, 19, Heriot-row, Edinburgh.

OCTOBER 4.—**Taunton.**—GENERAL REQUIREMENTS.—The T.C. invite tenders for the supply and delivery of various materials and articles required for the year ending September 30, 1910. Forms of tender may be obtained on application to Mr. D. Edwards, Borough Surveyor, Municipal Buildings, Taunton.

OCTOBER 5.—**Cowes.**—GRANITE.—Cowes U.D.C. invite tenders for the supply and delivery of about 200 tons of broken Guernsey granite. Form of tender, etc., may be obtained from Mr. John W. Webster, Engineer and Surveyor.

OCTOBER 5.—**Sheerness.**—ROAD MATERIAL.—Sheerness U.D.C. invite tenders for 500 tons of Rhenish basalt, broken to pass through a 1½-in. ring; 10 tons basalt chippings, free from dust. Samples must be sent to or left with the Surveyor to the Council, Mr. Thos. F. Berry. No forms of tender are supplied by the Council.

OCTOBER 6.—**London.**—SLEEPERS.—The Crown Agents for the Colonies, acting on behalf of the Government of Ceylon, invite tenders for the supply of 62,200 Australian hardwood sleepers, Jarrah or Blackbutt, including 5,000 yellow box and 5,000 bluegum. Forms of tender and all particulars may be obtained on application at the Office of the Crown Agents for the Colonies, Whitehall-gardens, London, S.W., on payment of a deposit of 1*l.*

OCTOBER 7.—**Bishop's Stortford.**—SHINGLE.—Bishop's Stortford U.D.C. invite tenders for the supply of about 120 cubic yds. of shingle. Mr. Thomas Swatheridge, Clerk, Council Offices, North-street, Bishop's Stortford.

OCTOBER 9.—**Devonport.**—STORES, ETC.—The Water Committee of the Devonport Corporation invite tenders for supplying iron work (special castings), iron work (general), sluice valves, hydrants, bib taps, ball cocks, stop cocks, and ferrules, lead pipe, pig lead, plumber's solder. Particulars, with specification and form of tender, may be obtained from Mr. F. W. Lillicrap, Water Engineer, Municipal Offices, Devonport.

OCTOBER 11.—**Bedlington.**—ROAD METAL.—Bedlingtonshire U.D.C. invite tenders for road metal and road roller. Further particulars can be had from Mr. J. E. Johnston, Surveyor, Bedlington. Also for the hire of a steam road roller, scarifier, and water-cart, according to conditions to be seen at the Surveyor's Office.

OCTOBER 11.—**Maryport.**—MACADAM.—For 500 tons of macadam, for the U.D.C. Tender, with sample, to be sent to Mr. F. Kelly, Clerk, Town Hall, Maryport.

OCTOBER 11.—**Todmorden.**—GRANITE SETTS.—The B.C. invite tenders for the supply and delivery of about 3,000 tons of granite setts. Specification, etc., may be obtained on application to Mr. J. A. Heap, Borough Engineer, Todmorden.

OCTOBER 13.—**Wallasey.**—GRANITE SETTS.—Wallasey U.D.C. invite tenders for the supply of 4,000 tons of 4-in. cube setts and 2,000 tons of 5 by 4 setts. Specification and tender form may be obtained from the District Engineer and Surveyor, Mr. W. H. Travers, A.M.Inst.C.E., Public Offices, Egremont, Cheshire.

OCTOBER 13.—**Wallasey.**—TRAMWAY RAILS, ETC.—Wallasey U.D.C. invite tenders for the supply of about 1,260 tons of tramway rails; also for requisite quantities of fish-plates, tie bars, anchor plates, and points and crossings. Specification, etc., may be obtained from the District Engineer and Surveyor, Mr. W. H. Travers, A.M.Inst.C.E., Public Offices, Egremont, Cheshire, on payment of deposit of 2*l.*

OCTOBER 14.—**West Ham.**—MOTOR SPIRIT.—The Guardians invite tenders for the supply of motor spirit for a period of twelve months, to be delivered free at the Infirmary, Whipps Cross-road, Leytonstone, N.E. Forms may be obtained on application, or will be forwarded on receipt of a stamped addressed foolscap envelope. Mr. Thomas Smith, Clerk's office, Board-room, Union-road, Leytonstone, N.E.

NO DATE.—**Tynemouth.**—CAST-IRON PIPES.—Tenders are invited for the supply of about 450 tons of cast-iron pipes. Further particulars upon application to Mr. John F. Smillie, Borough Surveyor, Tynemouth.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	Glamorgan C.C.	4*l.* per week	Oct. 6
*ASSISTANT IN COUNTY SURVEYOR'S OFFICE	Norfolk C.C.	100*l.* per annum	Oct. 7
*CLERK OF WORKS	West Ham Union	3*l.* 3s. per week	Oct. 14

Digitized by Google

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*FREEHOLD HOUSE, Etc., FRIERN BARNET—Railway Hotel, New Southgate	Chas. Sparrow & Son	Oct. 4
*FREEHOLD BUILDING SITES, Etc., SURREY—At the Mart	Breadmore & Webb	Oct. 5
*LIME WORKS, MCHNRY., Etc., STOCKTON, WARWICK—Craven Arms Hotel, Southam	Hutton, Thompson, & Colbourne	Oct. 11
*NURSERY STOCK, SOUTH WOODFORD—On the Premises	Protheroe & Morris	Oct. 13
*FRHLD. FAMILY RESIDENCE, WORCESTER-PK., SURREY—Rlwy. Hotel, Worcester-Pk.	Driver, Jones, & Co.	Oct. 26
*FREEHOLD PROPERTY, CITY OF LONDON—At the Mart	Edwin Fox & Bousfield	Oct. 27
*FREEHOLD BUILDING LAND, ALDERSHOT, FARNBOROUGH, & BISLEY—At the Mart	Farebrother, Ellis, Egerton, Breach & Co.	Nov. 11

MISCELLANEOUS—*Continued from page 370.*

MEMORIAL BUST, LANCASTER PARISH CHURCH.

A medallion bas-relief bust has been unveiled in Lancaster Parish Church, to the memory of the late Archdeacon Bonsey. The medallion is in Severita marble, and is flanked by side pilasters on corbels with a pediment. The sculptor is Mr. C. J. Allen, of Lancaster, to whose work we have often had occasion to refer. The bust is said to be an excellent likeness.

TINTERN ABBEY.

According to the official report for the year ending March 31, 1909, the work contracted for by Messrs. Turner, of Cardiff, in connexion with the resetting of the eastern arch of the tower, has been completed satisfactorily. The covering of the tops of all four walls of the tower and of the springers of the groins has also been done in a thoroughly sound and permanent manner, so as to exclude water, and has been so arranged as to be unobjectionable in appearance. The walls and arches themselves from this covering down to the springing of the arches have been repaired and pointed on both sides. The whole of these works were most urgently needed; the stonework of the great arch was so disintegrated and sunk out of position that it might have fallen without any warning, and the loose stones on the top of the walls and the springers of the groins were a constant source of danger to visitors passing beneath. The utmost care has been taken to preserve all the old features, and to do nothing further than was absolutely necessary for the preservation of the structure. It is very gratifying to be able to state that no accident has occurred to any of the workmen, although the whole undertaking was of a very difficult and dangerous character. Certain minor works have also been undertaken, viz.:—Repairs to the walls of the kitchen, the lay brothers' quarters and the frater, securing the tops with cement and turfing them, and some excavations at the infirmary. The number of visitors in the year to December 31, 1908, was 17,914, as compared with 18,399 in the preceding year.

Patents.

APPLICATIONS PUBLISHED.*

18,409 of 1908.—Hudson Horsley and Thomas Woodall: Draught-excluders for doors.

19,527 of 1908.—Francis Johnson: Apparatus for use in manufacturing blocks, slabs, or the like from cement or other suitable material or composition.

22,404 of 1908.—Rowland Hodges and John Brache le Maitre: Stays or fastenings for casements and the like.

26,278 of 1908.—David Stewart: Nut and pipe wrench.

26,854 of 1908.—Charles Ingham Haden: Blocks for the construction of flues, ventilating shafts, and the like.

27,408 of 1908.—Eva Chivers and Frederick Morton: Brackets for fixing rain-water, soil pipes, and the like to project from walls of buildings.

27,465 of 1908.—Robert Harry Unsworth: Machines for mixing concrete and the like.

27,601 of 1908.—La Continentale Fixator: Bolts, window catches, and the like.

3,689 of 1909.—George Freeman: Door handles and the manner of securing the same to doors.

8,876 of 1909.—Hermann Senn and David Klüger: Manufacture of porous materials, suitable for heat insulation, filtering, building, and the like.

12,619 of 1909.—Paul Janssen: Fire-extinguishing devices.

13,045 of 1909.—Johann Popp: Kitchen sinks.

14,734 of 1909.—Deco G.m.b.H.: Emptying and overflowing devices for washstands, sinks, and other liquid receptacles.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

PUBLISHER'S NOTICES.

Nat. Tel., 6112 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME XCVI. (January to June, 1909) was given as a supplement with the issue of July 10th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE NINETY-SIXTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps must not be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office, 4, Catherine Street, Strand, W.C., free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 15.—By NELMES, POOLE, JACKSON, & JONES (at Monmouth).

Cwmcarvan, Mon.—Cwmcarvan Court Estate, 1,148 a. 1 r. 16 p., f. and c. (in lots)	£16,787

September 17.—By H. W. & C. SPELMAN (at Norwich).

Norwich.—St. Giles-st., Rigby House and shop, f.	700
20 to 23, Willis-st., f., gross rental 46*l.* 16s.	400
Chapel Field-rd., house and builder's yard, f., q.r. 25*l.*	400
68 and 70, Higham-rd., f., q.r. 26*l.*	370

September 20.—By RICHARDSON & SON (at Selby).

Bubwith, Yorks.—Foggathorpe Grange and 234 a. 3 r. 10 p., f.	6,300

September 21.—By MAY & PHILPOT.

Clapham.—4, Thorncliffe-rd., u.t. 72 yrs., g.r. 6*l.* 10s., e.r. 38*l.*	300
Brixton.—81, Wiltshire-rd., u.t. 55 yrs., g.r. 9*l.*, e.r. 60*l.*	275
109, Loughborough-pk., u.t. 13 yrs., g.r. 8*l.* 13s., p.	170

By STURT & TIVENDALE.

Finchley.—1, Springcroft-av., u.t. 98 yrs., g.r. 8*l.* 10s., y.r. 42*l.*	385

By ALFRED J. BURROWS (at Ashford).

Ham-street, Kent.—2, Woodside-villas and three plots adjoining	314

September 22.—By E. J. GAIRDNER.

Fulham.—18 and 20, Rigault-rd., u.t. 66½ yrs., g.r. 8*l.*, w.r. 54*l.* 12s.	260

By ROBERT TIDEY & SON.

Hornsey.—15, Vernon-rd., u.t. 70 yrs., g.r. 6*l.*, y.r. 26*l.*	180
Islington.—45, Barnsbury-rd., f., y.r. 40*l.*	380

By WYATT & SON (at Chichester).

Chichester.—8 and 9, Washington-st., f., w.r. 28*l.* 12s.	320

September 23.—By HERBERT HOOKEY & CO.

New Cross.—7, 8, and 9, Dixon-rd., u.t. 55 yrs., g.r. 10*l.* 10s., y.r. 79*l.*	795
35, Lewisham High-rd., u.t. 21 yrs., g.r. 6*l.*, y.r. 40*l.*	175
47, 49, 59, 73, and 81, Hatcham Park-rd., u.t. 41 yrs., g.r. 15*l.*, w.r. 182*l.* 6s.	1,145

By NEWBON, SHEPHARD, & EDWARDS.

Gray's Inn-rd.—Nos. 308 and 310 (s.), f., y.r. 245*l.*	2,090
Islington.—82, Dennis-st., u.t. 32½ yrs., g.r. 4*l.*, p.	100
73, Westbourne-rd., u.t. 50 yrs., g.r. 8*l.*, p. ..	200

September 23.—By S. & G. KINGSTON (at Holbeach).

Holbeach, Lincs.—Arable and pasture land, 17 a. 3 r. 27 p., f.	£955

By GRIMLEY & SON (at Birmingham).

Handsworth, Staffs.—343 and 345, Dudley-rd., (s.), u.t. 66 yrs., g.r. 14*l.*, y. and e.r. 90*l.*	655
Smethwick, Staffs.—27 and 33, Henley-st., u.t. 44 yrs., g.r. 12*l.* 19s. 6d., w.r. 147*l.* 11s.	625

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Best Stocks	1	6	6	per 1000	alongside, in river.
Picked Stocks for Facings	2	10	0	,,	delivered
Flettons	1	4	6	,,	at railway depôt.
Best Fareham Red	3	12	0	,,	,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire	3	15	0	,,	,, ,,
Do. Bullnose	4	0	0	,,	,, ,,
Best Stourbridge Fire Bricks	3	14	0	,,	,, ,,
GLAZED BRICKS.					
Best White and Ivory Glazed Stretchers	10	7	6	,,	,, ,,
Headers	9	17	6	,,	,, ,,
Quoins, Bullnose, and Flats	13	17	6	,,	,, ,,
Double Stretchers	15	17	6	,,	,, ,,
Double Headers	12	17	6	,,	,, ,,
One Side and two Ends	16	17	6	,,	,, ,,
Two Sides and one End	17	17	6	,,	,, ,,
Splays and Squints	15	7	6	,,	,, ,,
Best Dipped Salt Glazed Stretchers	10	7	6	,,	,, ,,
Headers	9	17	6	,,	,, ,,
Quoins, Bullnose, and Flats	13	17	6	,,	,, ,,
Double Stretchers	15	17	6	,,	,, ,,
Double Headers	12	17	6	,,	,, ,,
One Side and two Ends	16	17	6	,,	,, ,,
Two Sides and one End	17	17	6	,,	,, ,,
Splays and Squints	15	7	6	,,	,, ,,
Second Quality White and Dipped Salt Glazed	1	5	0	,,	less than best.

	s.	d.		
Thames and Pit Sand	6	6	per yard,	delivered.
Thames Ballast	5	0	,,	,,
Best Portland Cement	28	0	per ton,	,,
Best Ground Blue Lias Lime	19	0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.		
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.	
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	,,	,,
PORTLAND STONE (20 ft. average)—				
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	,,	,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	,,	,,

	s.	d.		
Ancaster in blocks	1	10	per ft. cube	deld. rly dep.
Beer ,,	1	6	,,	,,
Greenshill ,,	1	10	,,	,,
Darley Dale in blocks	2	4	,,	,,
Red Corsehill ,,	2	2	,,	,,
Closeburn Red Freestone	2	0	,,	,,
Red Mansfield ,,	2	4	,,	,,
YORK STONE—*Robin Hood Quality.*				
Scappled random blocks.	2	10	per ft. cube,	deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super.	,,
6 in. rubbed two sides ditto, ditto	2	6	,,	,,

Digitized by Google

STONE (*continued*).

YORK STONE—(*Robin Hood Quality*) *continued*—

3 in. sawn two sides slabs (random sizes)	s. d. 0 11½	per ft. super. del rly. dept.	
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	"	"
1½ in. to 2 in. ditto, ditto	0 6	"	"
HARD YORK—			
Scappled random blocks.	3 0	per ft. cube,	"
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super.	"
6 in. rubbed two sides ditto	3 0	"	"
3 in. sawn two sides slabs (random sizes)	1 2	"	"
2 in. self-faced random flags	0 5	"	"

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. dep.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD. At per standard.

	£ s. d.	£ s. d.	
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	15 0 0	
Deals: best 3 by 9	13 0 0	14 0 0	
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0	
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.	
Deals: seconds	1 0 0	less than best.	
Battens: seconds	0 10 0	"	
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	10 0 0	
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0	
Foreign Sawn Boards—			
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.	
¾ in.	1 0 0	"	

	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 0 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 10 0	3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	4 15 0

JOINERS' WOOD. At per standard.

White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	25 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Do. 3 in. by 9 in.	12 10 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 0 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
Battens	10 0 0	11 0 0

WOOD (*continued*).

JOINERS' WOOD (*continued*)— At per standard.

	£ s. d.	£ s. d.	
Pitch-pine: deals	18 0 0	21 0 0	
Under 2 in. thick extra	0 10 0	1 0 0	
Yellow pine—First, regular sizes	44 0 0	upwards.	
Oddments	32 0 0	"	
Seconds, regular sizes	33 0 0	"	
Oddments	28 0 0	"	
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0	
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	0 3 9	
Small " "	0 2 6	0 2 6	
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0	
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	0 0 9½	
¾ in. do. do	0 0 7	—	
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0	
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6	
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0	
Teak per load	17 0 0	22 0 0	
American Whitewood Planks, per ft. cube	0 4 0	0 5 0	
Prepared Flooring, etc.—	Per square.		
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0	
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0	
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0	
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6	
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0	
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6	
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	0 13 6	
1 in. by 7 in. " "	0 14 0	0 18 0	
¾ in. by 7 in. white " "	0 10 0	0 11 6	
1 in. by 7 in. " "	0 12 9	0 15 0	

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.	
Rolled Steel Joists, ordinary sections	£ s. d. 7 0 0	£ s. d. 7 10 0
Compound Girders, ordinary sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	10 0 0
Flitch Plates	9 0 0	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	8 10 0

METALS.

	Per ton, in London.	
IRON—	£ s. d.	£ s. d.
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	—
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
" " Galvanised	17 0 0	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0	—
" " 24 g.	10 15 0	—
" " 26 g.	12 5 0	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	—
" " 26 g.	14 10 0	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0	—
" " 22 g. and 24 g.	18 10 0	—
" " 26 g.	20 0 0	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	—
" " 22 g. and 24 g.	14 15 0	—
" " 26 g.	16 5 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	—
" " " 26 g.	15 0 0	—
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0

(Under 3 in., usual trade extras.)

LEAD, &c. Per ton in London.

	£ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 2 6	—
Pipe in coils	16 12 6	—
Soil pipe	18 12 6	—
Compo pipe	19 12 6	—
ZINC—Sheet—		
Vielle Montagne	27 5 0	—
Silesian	27 0 0	—
COPPER—		
Strong sheet per lb.	0 1 0	—
Thin "	0 1 1	—
Copper nails "	0 0 10	—
Copper wire "	0 0 10	—
BRASS—		
Strong Sheet "	0 0 11	—
Thin "	0 1 0	—
TIN—English Ingots "	0 1 4	—
SOLDER—Plumbers' "	0 0 6½	—
Tinmen's "	0 0 9	—
Blowpipe "	0 0 11	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d " "
" fourths	4½d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅜ "	2¾d. " "
½ "	3½d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 2
" " ,, in barrels	"	0 2 3
" " ,, in drums	"	0 2 6
Boiled ,, ,, in barrels	"	0 2 6
" " ,, in drums	"	0 2 9
Turpentine in barrels	"	0 3 5
" in drums	"	0 3 7
Genuine Ground English White Lead	per ton	20 0 0
Red Lead, Dry	"	19 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

ABBERTON.—For building a new bridge, for Lexden and Winstan Rural District Council. Mr. John Ennals, Surveyor, Lexden:—

C. M. White	£135 19	F. Hutton & Son, Birch*	£124 0
H. R. Arnold	195 0		
W. C. Theobald	126 0		

ALPHINGTON.—For erecting six cottages, residence, and business premises, for Messrs. Bowden, Ellis, & Skanes. Mr. J. Archibald Lucas, A.R.I.B.A., Guildhall-chambers, High-street, Exeter. Quantities by architect:—

W. Harvey, 51, St. David's-hill, Exeter* .. £1,549

AYLESBURY.—For alterations at the judge's lodgings, etc., for Bucks County Council. Mr. R. J. Thomas, County Surveyor, County Hall, Aylesbury:—

Webster & Cannon	£536 0	R. Jewell & Sons	£374 10
Mayne & Son	525 0	H. T. Grimsdale, Aylesbury‡	345 0
H. Flint	487 0		
W. Y. Green & Co.	435 0		

‡ Recommended for acceptance.

BREDON (Worcestershire).—For alterations, repairs, and dilapidations to the Manor House at Bredon, near Tewkesbury, for Mr. C. J. Ratcliff. Mr. C. M. C. Armstrong, architect, Warwick:—

Collins & Godfrey	£592	A. C. Billings & Sons, Cheltenham*	£506
G. F. Smith & Sons	550		
T. Broad, Ltd.	508		

BRISTOL.—For painting the able-bodied women's block at the Eastville Workhouse, for the Guardians:—

C. Broadbear	£122 0 0	J. Wensley	£51 14 0
H. J. Naish	85 16 0	F. Hallam	45 0 0
W. Ash	84 0 0	S. Lovell	47 0 0
H. S. Evans	82 8 0	Lansdown & Dibley*	42 10 0
S. Jefferis	60 0 0		
Edwards Bros.	53 0 0		

EASTBOURNE.—For alterations and additions to the premises of the London and Provincial Bank, Ltd., and work to temporary premises during rebuilding. Mr. Bertram Earp, architect, Eastbourne:—

		Temporary Premises.
M. Martin & Sons	£2,485 10 0	£120 0 0
Miller & Selmes	2,385 0 0	114 10 0
Peerless Dennis & Co.	2,126 0 0	114 10 0
J. Martin*	2,100 0 0	100 0 0

HARTLEPOOL.—For extensions to the Hartlepool Henry Smith school, for Durham County Council. Mr. J. Garry Architect, West Hartlepool:—

R. J. Marshall, Hartlepool £10,541

HARTON.—For alterations, etc., to the Harton branch of the Boldon Co-operative Society, Ltd. Mr. Charles W. Bell, architect, 17, Norfolk-street, Sunderland. Quantities by the architect:—

J. Taylor	£596 0 0	R. C. Brown	£552 7 0
J. M. Wright	595 5 0	W. G. Knott	547 14 8
J. Johnson & Sons, Ltd.	576 15 8	A. Wilkinson	547 0 0
J. Davidson	571 6 9	J. & T. Parker, Sunderland*	517 0 0
Ridley & Crawford	554 7 8		

Digitized by Google

HARLINGTON.—For alterations to Baptist church. Messrs. George Baines & Son, architects, 5, Clement's-inn, Strand, London, W.C.:—

—	Estimate A.	Estimate B.	Estimate C.	Estimate D.	Estimate E.	Estimate F.	Estimate G.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£. s. d.	£ s. d.
T. Crutchfield*	34 10 0	58 15 0	88 16 0	7 12 6	4 16 0	16 5 0	2 4 0
A. Winch	28 6 0	81 10 0	95 10 0	8 0 0	10 10 0	10 10 0	3 2 0
W. Portsmouth	31 0 0‡	95 0 0	114 0 0	—	—	17 16 0	4 5 0
C. Keen	64 5 0	65 12 6	74 15 0	7 1 0	14 5 0	14 0 0	2 0 0

‡ Approximate.

LEEDS.—For extension of Lawnswood Cemetery, Adel. Mr. W. S. Braithwaite, architect and surveyor, 6, South-parade, Leeds:—

Excavating and Drainage: W. Alvey & Son, Woodhouse, Leeds £1,899 0 0
Making of Roads: H. Otty, Cardigan-road, Leeds 1,286 7 6
Building Lodge: Wilson & Son, Headingly, Leeds 536 0 0

LOOSE (near Maidstone).—For the erection of an isolation hospital on a site adjacent to Well-street, for the Maidstone Rural District Council. Messrs. Ruck & Smith, architects, 86, Week-street, Maidstone:—

J. Smith & Sons	£4,350 0 0
S. Edwards	4,346 0 0
F. & G. Foster	4,235 0 0
Denne & Son	4,198 0 0
J. Wood & Son	4,133 0 0
W. Wallis, Ltd.	4,112 15 0
W. T. Burrows	4,110 18 6
Wallis & Sons	4,036 0 0
R. Corben & Co.	3,998 0 0
H. Dixon	3,969 4 7
Cox Bros.	3,945 0 0
Barden & Head	3,893 10 0
Elmore & Son	3,812 0 0
S. E. Moss & Son	3,761 17 10
J. A. Davison	3,737 0 0
Godden & Son	3,731 2 9
C. E. Skinner, Chatham*	3,540 0 0

PONTLLANFRAITH.—For bridge works, for Monmouthshire County Council Offices. Mr. William Tanner, County Surveyor and County Architect, Newport, Mon.:—

A. Findlay & Co.	£1,284 3 7
A. Thorne & Sons	1,255 0 0
Orr, Watt, & Co.	1,198 15 6
H. Smith	1,183 16 6
R. Blundell & Bevan	1,076 15 9
Isca Foundry Co.	1,064 8 6
Motherwell Bridge Co.	1,058 0 0
H. C. Parfitt	1,049 0 0
J. Charles	1,035 0 0
R. W. Hunter & Co.	1,016 18 1
J. Brownscombe & Son	999 0 0
Barnes, Chaplin, & Co.	985 15 2
R. Macnab	980 0 0
Finch & Co.	979 4 4
J. C. Brettell	962 7 4
A. S. Morgan & Co.	960 0 0
Cleveland Bridge Co.	958 14 11
E. Jordan & Son	944 0 0
R. Pomeroy & Co., Cardiff*	897 14 10
For Twyn-y-Ruthlin Pitch.	
A. H. Williams	£3,497 0 0
G. Jones	3,055 18 8
R. W. Hunter & Co.	2,198 19 6
Newman & Smith	2,145 0 4
R. Macnab	1,895 0 0
A. S. Morgan & Co.	1,880 0 0
R. Pomeroy & Co.	1,652 2 3
Osmond & Sons	1,650 12 2
H. Parfitt	1,644 0 0
J. Charles	1,626 0 0
Dix & Francis	1,620 3 2
Barnes, Chaplin, & Co.	1,423 0 10
H. Smith, Newport*	1,420 0 0

PORTLAND.—For Castletown drainage, etc., for the Urban District Council. Mr. R. Stevenson Henshaw, Engineer and Surveyor, Council Offices, New-road, Portland:—

A. G. Osenton	£1,509 17 4
F. J. Barnes	1,442 18 2
R. C. Brebner & Co.	1,324 10 4
Jesty & Baker, Portland*	1,319 17 6
G. F. Bowring‡	1,220 6 8

‡ Tender withdrawn.

STOCKTON.—For painting, etc., at the Workhouse, for the Guardians of the Stockton Union. Mr. John Rodham, Surveyor, Finkle-street, Stockton-on-Tees. Quantities by Surveyor:—

W. T. Pickering	£211 17 6	S. Greenhalgh ..	£194 4 6
J. E. Willyman	206 3 6	G. F. Atkinson ..	163 19 6
Croft & Roe	202 15 6	F. Atkin*	162 10 4

[All of Stocton-on-Tees.]

WEARDALE.—For erecting three stone bridges on the new road from Eastgate to Rookhope, for the Rural District Council. Mr. G. W. Eggleston, Highway Surveyor, Stanhope:—

A. Hyslop	£1,669 15 0
J. Lane	1,356 0 0
G. Dougill & Sons	1,237 16 3
J. Westgarth	1,163 11 8
G. Westgarth	1,148 13 6
J. Hopper	959 8 6
J. J. Reed	806 0 0
J. English, Cowshill, Wearhead*	725 9 8
C. Richardson‡	662 18 6

‡ One bridge only.

WELWYN (Herts).—For providing and laying new sewer in the London-road, for the Rural District Council. Mr. H. F. Mence, Surveyor, 11, St. Peter's-street, St. Albans. Quantities by Surveyor:—

A. Frost	£294 17 0	E. E. Cousins ..	£215 1 11
Muirhead & Co.	282 0 0	J. Jackson	209 19 4
Ekins & Co. ..	245 0 0	H. Williams ..	202 16 11
Lowne & Co. ..	239 18 0	W. Deamer, St. Albans*	199 19 0
Inns & Co.	236 18 8		

CORRECTION: ROYSTON.—In the list of Tenders for the new Royston County Council school, given last week, an asterisk was placed against the name of Mr. C. Heath, of March, as being the accepted Tenderer. This is a mistake, and the asterisk should have been against Messrs. Hacksley's name.

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor,
Oakeley-Portmadoc.
BEST WORK ONLY.
Hand-made Broseley Tiles in Three Shades.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS.
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

OGILVIE & CO., Telephone: DALSTON 138. Many years connected with the late firm of W. H. LASCELLES & CO., LTD., of Bunhill Row.
Amhurst Works, **DALSTON LANE, N.E.**
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company,
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

ALSO AT DEPTFORD, LIVERPOOL, BRISTOL,
GLASGOW, FALKIRK, BELFAST, & DUBLIN.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3479. OCTOBER 9, 1909.

Contents.

	PAGE
The Campaign against Disfiguring Advertisements	377
The Destroyed Spires of S. Peter's, Rome	378
Notes	380
Deptford Branch Library Competition	381
The Building Trade and the Finance Bill	381
Further Notes on the Whitgift Hospital	382
Notes on Cements and Mortars	383
General View, Leicester's Hospital, Warwick	384
The Transvaal Architects and Registration	385
The Architects' Technical Bureau	386
Notes on Disinfectants	386
Ancient Architecture	386
Archæological Societies	387
Window, Pyecombe Parish Church, Sussex	387
Meetings	388
Illustrations:—	
Church of St. Botolph, Bishopsgate Without	388
The Front of S. Peter's, with Bernini's Campanili	388
Cornwall County Council Offices	389
New Catholic Church, Warrington	389
Architectural Societies	389
Engineering Societies	389
Competition News	389
Trade Catalogues	390
Books Received	390
Correspondence:—	
The National Institution of Apprenticeship	390
The Budget and Private Enclosed Gardens	391
The Edison Concrete House	391
Insects in Timber Roof	391
London and Provincial Builders' Information Bureau	391
London and District Borough Councils	392
Projected New Buildings in the Provinces	392
Lower Thames Valley District Surveyors' Association	393
General Building News	393
Sanitary and Engineering News	393
Miscellaneous	394
Law Reports:—	
Driving a Traction Engine	394
Patents	394
List of Competitions, Contracts, etc., Open	395
Some Recent Sales	398
Prices Current	398
Tenders	399

Illustrations.

Late Renaissance Churches of London.—X. St. Botolph's, Bishopsgate.

Sketch Restoration of the Front of S. Peter's, Rome, before the Destruction of Bernini's Campanili. By Mr. J. Tavenor-Perry.

Cornwall County Council Offices: First Premiated Design. Messrs. T. B. Silcock & S. S. Reay, Architects.

Proposed Church, Warrington. Mr. Matthew Honan, A.R.I.B.A., Architect.

Illustrations in Text.

	PAGE
St. Peter's: Plans of (A) south end of Narthex and (B) lowest stage of Tower erected above it	379
Further Notes on the Whitgift Hospital:—	
Fig. 1. North-east Angle of Quadrangle	382
Fig. 2. The Audience Chamber	382
Fig. 3. Firedog and Lock Escutcheon	383
General View and Chapel, Leicester's Hospital, Warwick	385
Window, Pyecombe Church, Sussex. Designed by Mr. Arthur A. Orr	387
St. Botolph's, Bishopsgate. Ground Plan	388

The Campaign against Disfiguring Advertisements.

THE "Society for Checking the Abuses of Public Advertising," known otherwise under its abbreviated title of "Scapa," has issued from time to time a small pamphlet under the title "A Beautiful World," giving information as to its procedure and its successes and failures in a campaign against the disfigurement of town and country by large and glaring advertisements; a publication of the nature of a periodical though it does not appear periodically, and is defined as the "Occasional Journal" of the Society. No. X. of this publication, however, which has recently been issued, appears in a much larger form, and constitutes a summing up of the present position, which it may be well to take this opportunity of considering.

In succeeding at length, after unobtrusive but unremitting efforts continued for sixteen years, in obtaining the "Advertisements Regulation Act (1907)," which empowers any local authorities in the United Kingdom to frame by-laws with a view to preventing or reducing the disfigurement by advertisements, the Society had to contend against three difficulties which are special to the subject. The first difficulty was, to overcome the influence of habit, and to persuade people that the ubiquity of advertising posters which they had been accustomed to really was a disfigurement to town and country, and often a totally unnecessary one. The second was, the difficulty of framing by-laws which should have that character of clearness and simplicity of definition which the English law rightly requires in a by-law. A by-law is usually of a negative character; it is a prohibition to do something, and the action which is prohibited must be clearly and unmistakably defined; a condition rather difficult to fulfil when it is a question of what is supposed to be offensive and annoying to the feelings. The third difficulty was that involved in doing justice to both sides in the matter; in checking the obtrusiveness of advertisements without bearing hardly on the commercial interests of advertisers, who also have their rights. In this latter respect the temper of the Society seems to have been all that it should be; it has in fact rather erred, if at all, on the side of too great leniency to advertisers. But it has thus gained the moral support of some of the large advertisers, who have even recognised that the Act is to some extent in their own interests. If A. & Co. are allowed to place immense letterings of their goods wherever they please, B. & Co. argue that they must do the same, or they will be beaten in the race for custom. If A. & Co. are prevented from doing this, the necessity for B. & Co. to do it is removed, and they may even be glad to be relieved of a considerable outlay for the purpose. So far, therefore, legislation on the subject may be an advantage to the advertisers as well as to the public; a fact which some of them seem to have fully recognised.

The by-law difficulty consists in the impossibility of legally defining what is and what is not disfigurement; there is no possibility of drawing the line in a specific definition, and the by-law which attempts that is liable to be pronounced "bad for uncertainty" in a court of law. Three sets of local by-laws—those of the County Councils of Westmoreland and Somerset and of the Corporation of Exeter—have however been approved by the Secretary of State; and a fourth set, submitted by the District Council of Barnes, will probably be approved, or possibly may have been approved by this time.

"In all four the method adopted is to specify areas within which or with respect to which advertisements must conform to prescribed conditions. These vary in stringency—the criterion applied being the size of the sign or the size of the letters comprising it, the height above the ground, and the character of the display. As a rule business notices on business premises are exempt. The Act allows five years' grace to all existing advertisements."

This method of procedure allows, it will be seen, of formal definition, and if adopted by local authorities generally, as it is to be hoped it may be before long—example being a great factor in matters of this kind—it will give a general power of preventing disfigurement by large advertisements in all neighbourhoods where such disfigurement would be especially objectionable.

We fear it will be a long time before this legislation is carried so far as to become effective in putting a stop to one of the most annoying forms of advertisement, that which fills the fields bordering hundreds of miles of railway line with huge boards mostly advertising quack medicines. Proposals to stop this are frequently met with philanthropic objections to depriving the struggling farmer of the rent that he derives from the advertisement boards. It seems to be forgotten that there is another right to be considered; the right of the railway traveller to enjoy the view of the country without having it completely spoiled to him by this vulgar type of advertisement of things which he does not want and will probably be much better without. But in this "practical" country it will take a long time to get people into the habit of thinking that a mere annoyance to the eye is a matter of any consequence at

Digitized by Google

all in comparison with the right of someone else to make money out of it. It is something, however, to have got an Act passed which for the first time recognises the rights of the spectator. As the editor of "A Beautiful World" remarks, this Act is the introduction of a new principle into English jurisprudence, which, he believes, is destined to have an ever-growing influence on the future aspect of this country. "For the first time, a public statute recognises the claim of the 'seeing eye' to consideration; for the first time scenery is treated as a national asset." That, at all events, should be something gained.

At the same time, we cannot help regretting that what appears to us the simpler, more logical, and more widely effective principle should not have been adopted of a tax on all posters in proportion to their surface area. This would infallibly have acted as a most important check on the obtrusiveness of advertisements, without bringing in the difficulty of definitions as to their nature or their position; it would probably, as soon as it came into operation, have cleared away the railway line posters at one swoop; and, as people must have advertisements to some extent, it would probably have brought in an appreciable return to the exchequer. It was, we know, very much in favour with the Society, and was even pressed upon the consideration of the present Chancellor of the Exchequer. What is the objection of the Government to it we know not, but the suggestion was not adopted. The system appears to work well in France. It gives the authorities of every village and commune absolute control over all posters and announcements displayed in public places. Billboards are infrequent in Paris; where they occur, they are usually built permanently into a wall, where they are taxed according to their superficial area. Where posters are placed on temporary hoardings round buildings in construction they are soon covered with posters of entertainments or of business firms, but every such poster has previously been submitted to the authorities, a license obtained, and each sheet bears the cancelled revenue stamp according to its size. Surely this is one of the cases to which one may apply the remark which sent Sterne abroad on his "Sentimental Journey"—"They manage these things better in France."

The first difficulty in the campaign to which we referred—the backwardness of the average man to recognise anything offensive in the predominance of large advertisement 'posters—is certainly diminishing. Probably the efforts of "Scapa" have in themselves done something to educate the public mind; at all events there are signs of an increased feeling on the subject. It is noticeable that the Postmaster-General stated recently that he had been invited to allow the use of telegraph and telephone poles for advertisements, "especially of soap and pills, which seemed at present to be the two requisites for human nature; but he was afraid that the æsthetic sense of members would object to those advertisements"; a remark which the House appears to have cheered. A Labour candidate for Parliament, in addressing his electors, said:—

"I should certainly favour a British tax upon advertisements where they become an eyesore and most hideous to the public gaze, as is instanced by the Lipton, Dewar, and Big Tree Brand advertisements on the Thames Embankment. I should not discourage rational advertising."

The American Civic Association, in reference to the large advertisements on the Canadian side of Niagara Falls, tried the experiment of putting a paper of written questions about them to American visitors; asking for their opinions, without expressing any in the paper. The answers were nearly all of decisive and in some cases very angry condemnation. We cannot help hoping that railway companies are awaking to some perception of the ill effect on their large terminal stations of plastering the walls all over with miscellaneous advertisements. The engineer of the new Victoria Station expressed his regret, when showing the just completed station to visitors, that the walls would soon be spoiled in their appearance by posters, and had begged his company to consider the matter. We gathered that in this instance his recommendation to leave the walls clean was not likely to be accepted. But we have noticed that the long stretch of fine clean brickwork in the new South Station at Waterloo, now some months completed, remains so far in its pristine state, untouched by the bill-poster; and we hope it is intended that it should remain so. On the other hand, one of the worst things in London, the flash-sign of "Lipton's tea" on the old shot-tower opposite the Thames Embankment, has been the subject of a courteous and excellently-worded protest from "Scapa," who were assured that their recommendation to remove it "would have every consideration from the Board of Directors"; but nothing more has been heard from them, and the sign still continues to obtrude itself on the spectator and spoil an essentially picturesque scene.

We recommend those who are interested in promoting a more enlightened public opinion on this subject of the disfigurement of urban and rural scenery by advertisements, to procure the publication which has suggested these remarks,* which contains information on many more points than those on which we have touched, and to give their support to the Society in continuing and extending its efforts to prevent the disfigurement by man of what, if left to itself, is "a beautiful world."

SANATORIUM EXTENSIONS, WORTHING.—Two new ward pavilions have been erected at the Worthing Corporation Infectious Diseases Hospital, at Swandean. The additions provide accommodation for twenty-eight beds. A nurses' duty-room is provided, with inspection windows overlooking each ward. There is also a receiving-room, with movable bath, in addition to the usual detached bath-rooms and lavatories. An isolation and observation pavilion has also been erected. The buildings have been erected from the plans and under the superintendence of the Borough Surveyor, Mr. F. Roberts, the builders of the various sections being Messrs. James Longley & Co., of Crawley; Messrs. Blaker & Son, Worthing; Mr. W. East and Mr. G. Baker, jun., Worthing. The cost of the new wards and isolation blocks has been about 6,000*l.*

* "A Beautiful World; The Occasional Journal of the Society for Checking the Abuses of Public Advertising." No. X.: September, 1909. Printed for the Society by Edwin Trim & Co., Wimbledon. Address of the Hon. Sec.:—"The Keir," Wimbledon Common, S.W.

THE DESTROYED SPIRES OF S. PETER'S, ROME.

By J. TAVENOR-PERRY.

THE traditional origin of the saying, "Robbing Peter to pay Paul," is well known to most people, but there is another application of it with which we are not so familiar, since there is but little doubt that it was in consequence of Wren's knowledge of Bernini's designs for the campanili of the Vatican basilica that he was prompted to adorn with graceful spires the façade of his S. Paul's of which the Roman S. Peter's had been bereft. The story of the erection and destruction of S. Peter's belfries has been recently told at length in the pages of the *Burlington Magazine**; but some of the architectural points of the subject are worth a little further explanation.

Modern writers in criticising the present aspect of the elevation of S. Peter's towards the piazza, and commenting most adversely on Maderno's architecture, are inexcusably forgetful of the fact that his design was never completed, and that many of the defects for which he is blamed are due to the preparation for those spires with which he intended to crown his work, the omission of which utterly ruined the successful fruition of his conception. It is forgotten that the great length of the narthex, which is one cause of the monotonous effect produced by the front, is due to the basements which he erected for these towers, occupying as they do nearly one-third of the whole length of the elevation.

It is to be remembered that a bell-tower of some sort was regarded as a necessary adjunct to every church at the time when S. Peter's was rebuilt, for the idea had not yet been conceived which substituted rockets and bombs for bells to call the people to worship, as is now the case in some South American cities where, as in Para with its thirty bell-less churches, the Sabbath sounds would suggest to us the neighbourhood of the "White City" on a firework night. In all the designs prepared for the rebuilding and completion of S. Peter's, with the possible exception of Michelangelo's, one or more bell-towers had been provided; and when some years after those erected on Maderno's narthex had been destroyed, a detached one was designed to occupy the central space of an eastward extension of Bernini's great colonnade, the erection of which would have quite hidden from view that aspect of the church and piazza with which we are now so familiar.

The great height of the façade caused by carrying the attic across the front of the building, together with any towers erected upon it at the ends of the aisles, would have completely blocked out any view of the dome on the eastern side, and to avoid this as far as possible by giving more space between the towers, Maderno extended his narthex further north and south than the width of the church, so as to make the towers quite independent of the main structure, an expedient afterwards adopted by Wren at S. Paul's. But this involved some considerable difficulties, as at the north end it brought his buildings so close

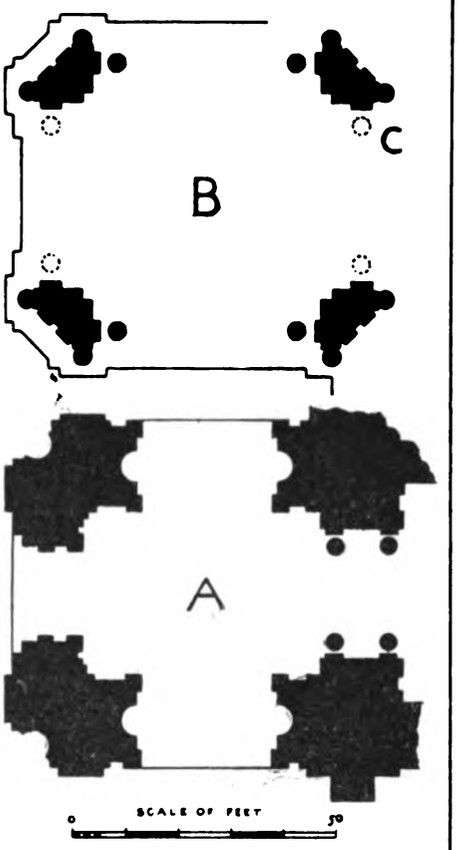
* *Burlington Magazine*, No. 88, September, 1909.

Digitized by Google

to those of the Vatican that he was compelled, for the sake of preserving a roadway which passed at that point between the church and the palace, to pierce his building with a broad and lofty arch which destroyed all tie in the lower part of the work. No doubt it was with a view to strengthen the piers at the ends of the narthex, which thus became isolated, that he made them so massive, but canted off their angles so as to reduce the appearance of length as much as possible. But besides being hampered in his design by having to provide for the roadway at the north end, he found the ground at the south end so soft with running water that he had to carry his foundations down to a depth of 100 ft. and make elaborate arched buttresses with piling to prevent them being washed away with the scour of the water. It is evident from the plan of these projecting portions of the narthex that their enormous angle piers, which measure some 25 ft. across either way, were intended to carry a considerable superstructure; but whether it was intended to continue the canted shape above the top of the attic as Bernini did when he erected his towers cannot now be determined, as Maderno does not appear to have left any designs for the continuation of the works. The whole façade up to the present height was completed about 1612, the date which Paul V. had inscribed across the entablature, and from then until Carlo Maderno's death in 1629 the works were not resumed.

It is quite possible that Maderno had abandoned in his own mind all ideas of raising the towers some time before his death in spite of the enormous outlay that had been incurred upon the foundations, as it is not unlikely that he had noticed the signs of weakness in the structure, which afterwards developed into the alarming cracks and settlements that showed themselves after Bernini had built his towers. But the necessity for a belfry of some sort continued, and this, together with the unfinished appearance of the façade, induced Pope Urban VIII., a few years after Maderno's death, to resolve on the erection of the campanile, and he entrusted the task to the sculptor Lorenzo Bernini. Neither he nor the Pope could have been ignorant of the difficulties which Maderno had experienced in obtaining his foundations, but Bernini may have reasonably hoped, being without Maderno's knowledge of the latent weakness of the structure, that the lightness of the work he proposed to raise might not prove too much for the piers below to sustain. He carried the lower stages of his tower on four independent angle piers, each of which was less than a third of the area of the piers below on which they stood, binding them together above each stage with deep cornices and parapets, and from a platform above them raising two more stages of a fantastic shape. These upper stages were not only squat in proportion and inelegant in outline, but they were structurally bad, as they did not stand directly on or spring from the piers below, and were of a much more solid and heavier character than the work which supported them, and this without allowing for the load and strain of the bells which were intended to be hung within them; hence it was in this part of the structure that failure first showed itself. The south tower was completed by S. Peter's Day, 1641, and the Borgo was illuminated in celebration of the event; but a few days afterwards the top stories began to collapse and had to be taken down. The lower stages, however, appear to have remained secure, and the upper parts were therefore restored, although only in brickwork. But it is said that cracks began to show themselves in Maderno's work below the towers, and after the death of Bernini's friend and patron Urban, the new Pope, Innocent X., listening to the jealous whispers of Borromini, ordered the entire destruction of the campanili, and they were pulled down in 1646.

The north tower, meanwhile, had been progressing, and seems to have reached



S. Peter's: Plans of (A) south end of Narthex and (B) lowest stage of Tower erected above it.

to the top of the second stage, and to have been left in that state for some time. Under the date of December, 1644, John Evelyn notes in his diary: "On each side of the portico are two campaniles or towers, whereof there is but one perfected, of admirable art"; but in a little chalk drawing of Claude's in the British Museum, published by Mr. Edward Dillon, taken at the beginning of 1646, of the south side of S. Peter's, only the south tower shows standing two stages high, with some of the statues on the parapets, but the north tower may perhaps be hidden behind the other one.

Of contemporary drawings of these spires there are, beside that of Claude's, several in existence, among which are two engravings in the National Gallery of Rome of the front of the narthex in one of which the south tower is shown standing complete to the top of the second stage, and in the other the north tower also appears as well in progress; and from the former of these was no doubt prepared the large engraving of the same view which appears in Carlo Fontana's great work.* There are also two elevations of the east or west face of one tower published in Fraschetti's life of Bernini,† one of which, from the Chigi collections, may be of Bernini's own making. None of these give, however, any plan, and the one given by Fontana does not agree with his elevation and is obviously incorrect; but the main dispositions were so fixed by the arrangement of the piers below that it could not have varied very much from the sketch plan we give at B. The gross height of the spire from the attic cornice to the top of the cross, as given by Fontana, is 182 ft. 2 in., of which the cross measures about 10 ft., and the height from the attic cornice to the top of the parapet on the second stage is 113 ft. 8 in.

In the absence of any authoritative plan or elevation of the north or south faces of the tower there is some uncertainty as to whether there were any detached columns in the position of C on the plan B. They are not distinctly shown on Claude's drawing, though they appear on Fontana's plan, and seem to be indicated on the engravings. On the other hand, it is stated by Cancellieri‡ that the columns of the first stage of the towers were afterwards reused in the porticos of the twin churches of Sta. Maria di Monte Santo and Sta. Maria dei Miracoli in the Piazza del Popolo, the former of which Bernini erected for Pope Alexander VII. As the two porticos have each only four columns, either all of these were supplied from the south tower, in which case the north and south faces had columns at C and the north tower was not completed on the first stage, or if the north tower had been built then a sufficient number of columns would have been available for the portico from the east and west faces only. The columns of the second stage also point to the conclusion that there were none inserted over C as the eight fluted shafts of bigio, a marble from North Africa of a rare character, which now carry the dome of the Sagrestia Comune, but came originally from Hadrian's Villa at Tivoli, were used by Bernini on these upper stages. Had he placed columns over C all his stock would have been used up in the south tower; but as the total number was only eight in all, and the marble was not to be matched, he most probably reserved four for the north tower and omitted them on the north and south faces.

The rough perspective sketch which we publish herewith does not profess to be accurate in minor details, but is intended to show correctly the effect the spires of Bernini would have produced in combination with the domes, and for that reason the point of view has had to be fixed at a high level. It is to be remembered that the colonnades were not erected for some years after the destruction of the campanili, and alterations

* Carlo Fontana. *Il tempio vaticano.* Roma. 1694.
† Stanislao Fraschetti. *Il Bernini, la sua vita.* Milano. 1900.
‡ Francesco Cancellieri. *Le due nuove campane de Campidoglio.* Roma. 1806.

Digitized by Google

were made to the attic of the narthex when Simonetti added his clock faces. Apart from any question of detail, the spires look enormous, yet any erection on the top of so lofty a façade with an order more than 115 ft. high was bound to be big if it would not appear mean and trivial. And although it may be admitted that the spires are a great improvement, the initial badness of Maderno's façade was past remedy, and even with Bernini's campanili it lacked altogether the grace and proportion so happily present in Wren's front of S. Paul's.

NOTES.

The Finance Bill and Minerals.

THE exemption at the last moment from the Mineral Rights Duty in specific terms of common brick clay, sand, chalk, limestone, or gravel will be accepted by the building trade with some relief, especially as it extends to wayleaves as well as royalties. Granite and building stone still remain unexempted, but the position of road stone is to receive consideration. That the Mineral Rights Duty will eventually fall upon the consumer cannot be doubted, despite the assurance of the Government that this will not be the case, and the very exemptions now granted show some doubts on the point in the minds of the Government. The whole attitude towards "minerals" has been most unsatisfactory, as when the Government abandoned their tax on "ungotten minerals" and adopted the tax on royalties this change at least might have been expressed in certain terms. Uncertainty as to future taxes interferes with contracts and hinders trade, and therefore Budget proposals should be carefully thought out before they are presented. We may hope yet to see building stone brought within the exemptions.

Norwegian Granite.

FURTHER attention was directed last week in the House of Commons to the proposed acceptance of foreign granite for part of the works to be constructed by the Admiralty at the Rosyth Naval base. The main contractors were instructed to submit alternative tenders for British and foreign stone, with the result that the relative amounts came out at 134,000*l.* and 104,000*l.* respectively. Consequently the Admiralty, having in view nothing but the saving of money, decided in favour of foreign granite. We have no reason for believing that British granite would be any better in quality, but it certainly is a great pity that money should be sent out of the country to benefit foreign quarry owners and workmen. While private firms cannot be blamed for practising economy at the cost of home industries, the position of a Government Department is very different, and we hope that the suggested revision of British tenders for the Rosyth granite may have the effect of reversing the previous decision of the Admiralty.

The London Wall Fire.

THE inquest concluded by Dr. Waldo, the City Coroner, illustrates the need for reform in the construction of interior fittings for manufacturing premises. The building in question was tenanted by a firm of wholesale milliners, and naturally contained large quantities of inflammable materials. One most efficacious arrangement for spreading any fire was a lift provided with a combustible rope and working in a shaft formed of match-boarding. As the managing director of the firm told the Coroner, when the lift rope had been burnt through the lift wherein the fire originated would go slowly upwards from the basement, spreading the fire from floor to floor. Even if the fire had not started in the lift cage the match-boarded partition would have proved itself an excellent medium for the communication of flames to stories above the starting point. Fire-resisting materials are so cheap and abundant that their use ought really to be made compulsory in buildings of the industrial class.

Disinfectants in Water Purification.

AT the annual meeting of the New England Water Works Association one paper dealt with the extensive studies which have been in progress for some years at the Laurence Experimental Station, and another recorded some interesting results obtained at the Poughkeepsie Water Works. At the Laurence establishment many disinfectants have been tested, including copper salts, permanganate of potash, and calcium chloride. Unlike copper salts, both of the latter reagents are rapidly decomposed; they effect a considerable reduction in the number of bacteria present; and the resulting compounds are of harmless character from the physiological standpoint. Recent experience at Poughkeepsie relates chiefly to the employment of calcium chloride, which has been found beneficial in preparing the water for filtration. The general tendency to-day in water purification is towards reduction of the work to be performed in filters. British endeavours of this class are mainly confined to the provision of storage reservoirs where partial purification occurs by natural agencies, while American engineers more generally attempt to hasten the process by means of coagulants and disinfectants, alone or in combination. The papers mentioned are worthy of consideration, but we think the British method of preliminary treatment generally preferable, especially for waters already characterised by a fairly large proportion of mineral salts.

Gary City, Indiana.

MOST of our readers are familiar with the natural development of American hamlets into large and flourishing cities. In the case of Gary City, however, we have a unique example involving the design and construction of a town complete with all the most recent installations and services for the public welfare and convenience. Owing to the establishment of the Gary Steel Works on the shore of Lake Michigan it became necessary to provide housing accommodation on a large scale, the result being that the United States Steel Corporation formed two subsidiary companies—one for the acquisition of land and the building of a complete town for several thousands of inhabitants, and the other for the establishment of water works, drainage works, and heating and lighting systems. The former company have already built more than 500 houses along wide and well-planned main thoroughfares, while three school houses and a public library are nearing completion. Including buildings erected by private owners the town now provides for the population of 15,000 persons on a site which three years ago was practically waste land on the borders of the lake.

Harvard House, Stratford-on-Avon.

HARVARD HOUSE, formerly known as "the Ancient House," has been presented to America and Harvard University by Mr. Edward Morris, of Chicago. The house, on whose front is the date "1596," has been reinstated and returned as far as is now possible to its pristine appearance. It was built for Thomas Rogers, alderman, whose daughter Katharine was married in Holy Trinity Church, Stratford-on-Avon, on April 8, 1605, to Robert Harvard ("Harwod"), of High-street, Southwark, a butcher, and vestryman of St. Saviour's, she being his second wife. Of six children, issue of that marriage, four, with their father, died of the plague. The widow married again, and her son, John Harvard, was admitted to Emmanuel College, Cambridge, on April 17, 1628. Nine years subsequently he, with other Puritans, went to New England. He died about twelve months after his arrival there; he bequeathed his library and a capital sum of 800*l.* towards the endowment of a college, which has since developed into the University which bears his name. His mother and brother Thomas had left him a fairly good fortune, largely derived from the Queen's Head Tavern in Borough High-street. Her early home in Stratford-on-Avon contains an upper room, panelled in oak, and a Tudor mantel-beading of plaster; in the passage which leads to the room are hung, in frames, a specimen, taken from the house, of the true wattle and dab work *temp.* Elizabeth, and a specimen of similar work as executed in our own time. It is a single-gabled half-timbered house, having three floors; on the elaborately-carved front are roses, fleurs-de-lys, and the bull and bear badges of the houses of Neville and Beauchamp. The date is between the initials, "T.R." and "A.R.," of Thomas, and his wife Alice, Rogers.

The Builders' Information Bureau.

ON another page will be found some particulars of an enterprise of considerable importance to builders, and one which should meet with a large measure of success. We refer to the London and Provincial Builders' Information Bureau, a title which at once expresses the principal object of the Bureau, which is to supply builders and contractors with information upon all matters connected with their trade. The Bureau, to quote from a printed prospectus before us, is

> "An independent and disinterested medium where information as to building materials, equipment, fittings, current prices, etc., and technical matters connected with the building trade can be obtained. There is no institution in this country organised solely for this purpose though similar ones are in existence both in America and on the Continent, and are much appreciated in those countries by builders who are fortunate in having an organisation of the kind at their disposal."

Digitized by Google

As we mention elsewhere, no individual builder can properly collect, tabulate, and have ready for use at any time the information required successfully to carry on his business, and to have ready access to such information must be of great assistance to a busy man. We write with considerable knowledge of the requirements of the modern builder, for our office has been for some time a sort of information bureau, and we know how numerous are the inquiries made and how great is the need for the establishment of a central organisation ready to supply information bearing on a builder's business and capable of answering questions relating to it. The advantages of membership of such a bureau must be numerous; some of them are mentioned on another page, and those of our readers who desire fuller information should write to the Secretary for the printed prospectus already referred to. We have pleasure in calling attention to an enterprise which is likely to be of great use to builders, and which may very well become indispensable to them.

DEPTFORD BRANCH LIBRARY COMPETITION.

THE assessor appointed by the Libraries Committee of the Deptford Borough Council, Mr. J. S. Gibson, has now given his award. Messrs. Castle & Warren, of Talbot House, Arundel-street, Strand, have gained the first premium. The design by Mr. W. F. Young and Mr. H. W. Horsley, of Norfolk-street, Strand, has been placed second, while Messrs. Wills & Anderson, Bloomsbury-square, have been placed third. The proposed cost was to be 4,500*l.*, and the accommodation required comprised lending library (not on open access system), magazine and reference room, and news-room, with the usual store space, accommodation for the staff, and caretaker's quarters. The site is deep and narrow, presenting a frontage of 50 ft. to the New Cross-road, and measuring in depth about 150 ft. The sides are parallel, but not at right-angles to the front and rear, thus necessitating either a front elevation on the skew, or a recession from the present building line, which follows the site, to gain the advantage of a rectangular building. An ancient light at about the middle point of the depth presented no difficulties, as the library proper naturally demanded a one-story treatment. Furthermore, the narrowness and great depth of the site rendered extensive top-lighting unavoidable.

Messrs. Castle & Warren's design is "facile princeps" in point of plan, and unexceptionable in elevation. The front is recessed from the building line to avoid the necessity for a skew treatment; the scheme is sufficiently compact to leave a space about 40 ft. in depth unbuilt over to the rear. The public entrance is at one side, balanced by the caretaker's separate entrance on the other. The public corridor runs straight through to the magazine and reference rooms, which occupy the back portion, passing first the news-room and then the lending library, the public space of this department forming a recess in the corridor. The lending library being thus centrally placed, supervision of all departments therefrom has been made possible by service counters ranging with the main service counter opening into the news-room and the magazine and reference room. This latter is further under the direct supervision of the librarian, whose room is placed on the right-hand side, with access from the lending library leading past the stairs to the basement and the staff lavatory, about a quarter of the width of the rear portion being thus cut off from the magazine and reference room. The caretaker's entrance also cuts off a portion of the news-room in front. In the basement to the rear are contained the book-store, work-room, and staff mess-room. This portion comes immediately under the magazine and reference room, and extends back from the rear to the same depth. In the front basement are contained coal stores and heating boiler. The caretaker's apartments are on the first floor, this two-story portion fronting on the New Cross-road being only of trifling depth. The elevation is astylar and of average merit, the materials red brick and Bath stone, with green Westmorland slating for the roof. The heating is on the low pressure system, served by radiators from the boiler in the basement. The cube works out to 4,482*l.*, thus leaving a satisfactory margin. An alternative scheme was also submitted, placing the librarian centrally, and giving the whole of the rear to the magazine and reference room, the staff lavatory being placed in the basement. With these exceptions the plan is the same and the cube unaltered.

The design by Mr. W. F. Young and Mr. H. W. Horsley, placed second, resembles that just described in general arrangement, with the exception that the supervision of the departments is not as good. An extra lavatory is provided on the ground floor, labelled "Ladies or Librarian." It would be objectionable in the former capacity, the entrance being directly from the magazine and reference room. The staff lavatory is in the basement. Here, too, a rectangular building has been obtained by a recession from the building line. The front elevation is dignified and monumental, the material stone, with Ionic pilasters in the centre portion; the authors have succumbed to the temptation to perch a flèche on the ridge. With a sincerity of design, praiseworthy, but foreign to their medium, they have also marked the public entrance by a couple of Ionic columns and pediment, leaving the caretaker's entrance, exactly answering to it in position on the other side, comparatively unadorned.

Messrs. Wills & Anderson's design is markedly inferior to the two preceding designs. Their building covers practically the whole of the site. The public entrance is in the centre, into a lobby, from the right-hand side of which entrance is gained to the public corridor, running from front to back, and ending in the librarian's room. On the other side a similar division runs from front to back, containing the entrance to the caretaker's quarters, and book-store, then a small area, and in the next section the staff lavatory, work-room, and staff mess-room, answering in position to the librarian's room on the other side. In the centre and wider division are placed the news-room, lending library, and magazine and reference room. The work-room and staff mess-room are of extremely awkward shape, very long and narrow. The book-store not working out to the prescribed floor area, a second one has been provided in the roof, two floors above, with its sole entrance from one of the bedrooms in the caretaker's quarters. The elevation consists of a recessed centre and two projecting flanks, joined on the ground floor by a colonnade of coupled columns (Tuscan presumably), which forms a porch to the public entrance. The material is stone. The whole is on the skew, the returns of the flanks not being at right-angles. The caretaker's apartments are contained on the first floor and in the roof. It will be understood that, as in the former two designs, the main building at the rear is of one story only, and covered by a flat. The one good point in the plan, which doubtless influenced the assessor in his decision, is the placing of all the library accommodation (with the exception of the store referred to above) on the ground floor, the only piece of basement containing the heating arrangements and coal-store.

The design numbered 55 is at least as good, in our opinion better. All its good points are those of the first and second. The supervision would be excellent from the lending library, in fact the general disposition is almost exactly similar to that of the first premiated, and the elevation, we think, superior. A recessed portico of the Ionic order the whole height of the building occupies the centre portion. The material is brick and stone.

No. 13 is also worth notice. The public entrance and caretaker's entrance, at either side, are considerably recessed; a certain amount of side light is thus gained for the news-room, which projects between. The elevation is well designed, and possesses considerable artistic merit. It is almost unnecessary to add that the style chosen is a version of XVIIIth century vernacular.

Few of the remaining designs call for any particular notice. We may add that the designs will remain on exhibition at Deptford Town Hall till the end of next week.

THE BUILDING TRADE AND THE FINANCE BILL.

LAST week we drew attention to a protest of the builders of South London against the Finance Bill, and since that protest appeared a manifesto has been issued by the builders in North London which will be found in the *Times*, October 2. This document asserts that sales of houses have decreased and that no purchases of land are being made, and that the Finance Bill contains provisions which make it impossible for business men to carry on their business. It may be noted that some of the recent amendments introduced by the Chancellor of the Exchequer have only emphasized the difficulties and inequalities under the Bill. For instance, seeing the tentative and unusual character of the original valuation to determine the site value, the clause which prevents any deduction being made for the purpose of ascertaining site value on an occasion when increment value becomes payable if it was not claimed when the site value was originally ascertained, and which debars any deduction being made which was not claimed by the then owner or his predecessor in title on any previous occasion when increment value duty was collected, seems most unjustifiable. Then, by another new clause, in the case of buildings "used for the purpose of separate tenements, flats, or dwellings" increment value duty is not to become payable on the grant or transfer of a lease, a distinction in favour of such dwellings as distinguished from houses separately occupied which seems most undesirable.

The exemption from undeveloped land duty of small cultivating owners "when the total value" of the land cultivated by them, and of any other land in the same ownership, does not exceed 500*l.*, is also unsatisfactory. The Chancellor said that the words "total value" would include buildings, but that it was not of much importance as, as a rule, the structures a market gardener had on his land were not of much consequence. But what about forcing houses? Somewhere in the Bill, we believe, these are exempted, but does the exemption apply to this new clause?

Then, if the owner of land has had to pay "betterment" to a local authority, he is exempted from increment value duty and undeveloped land tax, but not from reversion duty.

Lastly, the recreation grounds exempted from increment value duty must be held by some body corporate or unincorporate under agreements of specified terms and conditions, but land lent by landlords for such a purpose are not exempted.

At one time the Finance Bill appeared to be a surveyor's Bill, but now it is becoming a lawyer's Bill as well, for legal advice will be essential whether land is developed or left undeveloped, and whether it is used for business purposes or for recreation.

SCHOOL ADDITIONS, TAUNTON.—Additions have been made to Taunton School. Mr. F. W. Roberts, architect, of Taunton, prepared the plans.

Digitized by Google

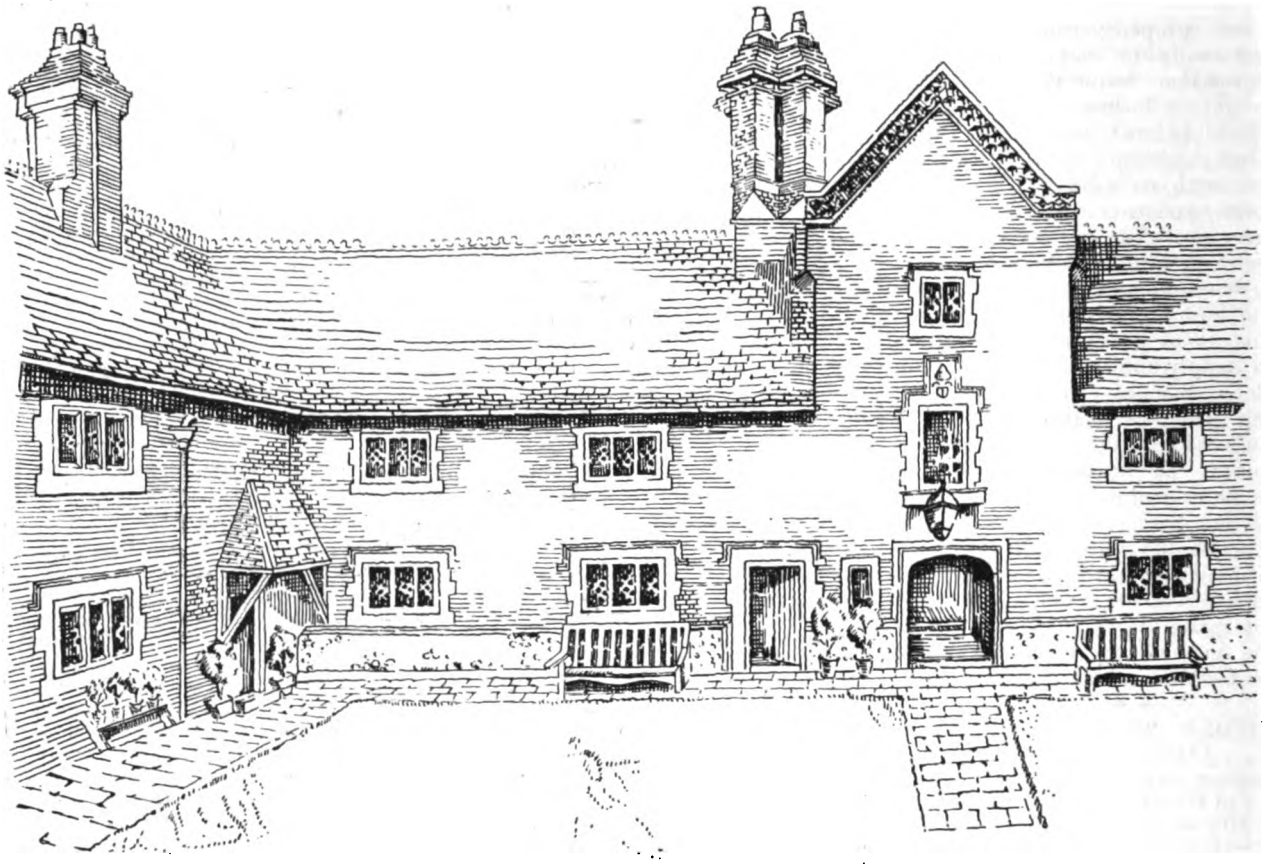


Fig. 1. North-east Angle of Quadrangle, Whitgift Hospital.

FURTHER NOTES ON THE WHITGIFT HOSPITAL.

To THE immense amount of literature which has recently been written concerning Whitgift's Hospital and its threatened demolition I should like to add a few remarks, which, with one or two sketches and notes thereon, I hope may arouse the interest of all those in any way concerned with the preservation of ancient buildings. I further wish to induce them, if they have not already done so, to pay a visit to Croydon and see with their own eyes what an historic building it is the fate of which is now hanging in the balance.

As one looks round the building ample evidence is provided that the Hospital helps to fill one of the most interesting chapters in architectural history. I refer to the transition when Gothic art had seen its day and was giving place to a new feeling, promoted originally in Italy, where Gothic architecture was never thoroughly understood nor Classic ideas ever entirely discarded. In this connexion the Whitgift Hospital is of importance as an illustration of a remarkable page in the story of architecture, and its destruction would be a loss that must be avoided at all costs.

Sketch No. 1 shows the north-east angle

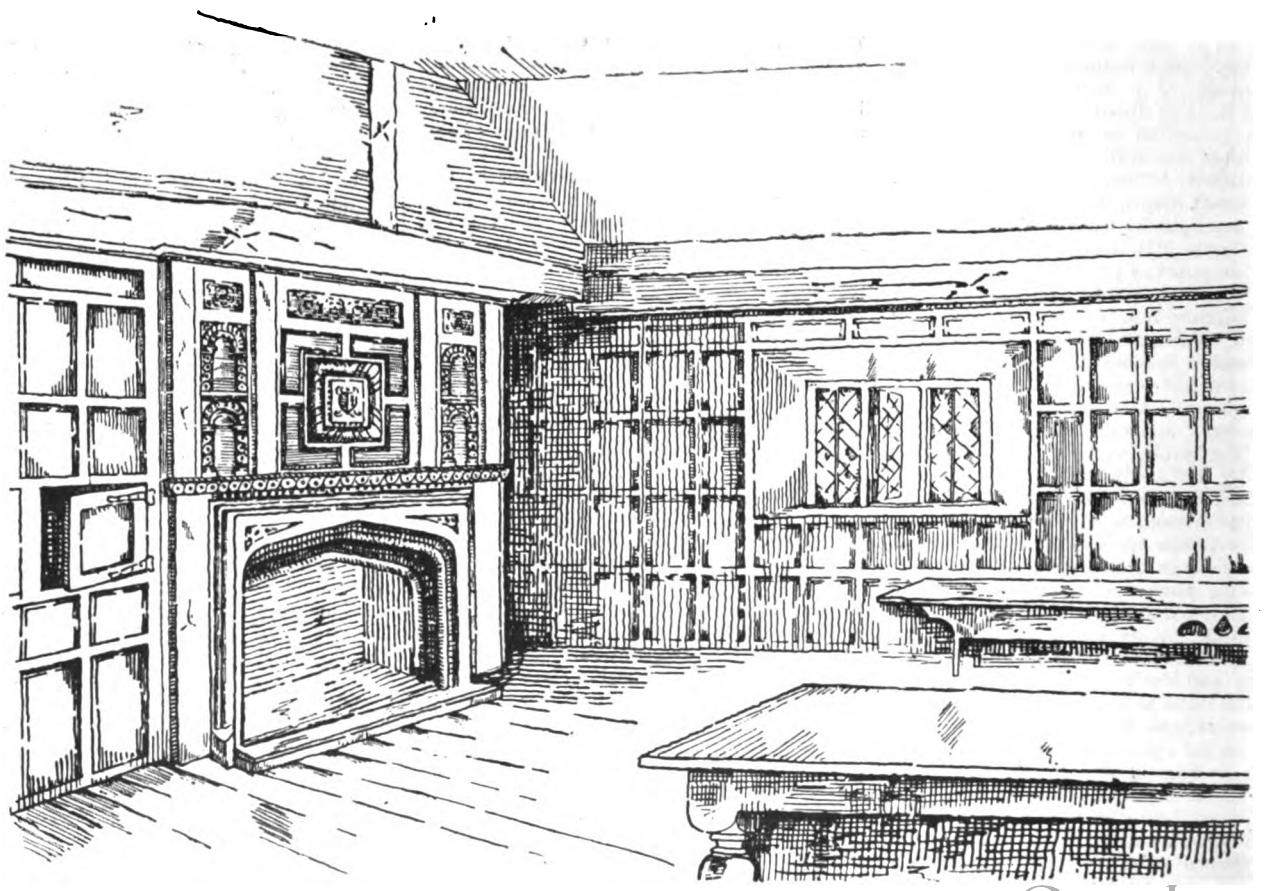


Fig. 2. The Audience Chamber, Whitgift Hospital.

Digitized by Google

of the quadrangle around which the Hospital is built. The chimney-stack, rising up above the gable, is the only Elizabethan one now remaining. The others were destroyed about the middle of the XIXth century, when a builder was called in to "repair" the defective flues. He did this by destroying the stacks and rebuilding them as shown on the left of the sketch. The "restorer" has likewise been at work on the windows, having swept away all but one of the original brick mullions and replaced them with wood. The little hoods, one of which occurs over each doorway, are also a later innovation, but nevertheless have quite a charm of their own, and, on the whole, add to the general appearance of the quadrangle. Originally there was a porch round each entrance with a seat on either side of the doorway.

Out of the archway under the gable a narrow flight of stairs gives access to the most interesting portions of the Hospital, namely, the audience-chamber, in connexion with which are Whitgift's retiring and bed rooms. In Sketch No. 2 I have attempted to give some idea of the former room. Here we find on every hand almost exceptional examples of the transition between Gothic and Renaissance work. The stone jambs of the fireplace are a restoration, but the fine carved oak overmantel, with its pilasters and wealth of Classic detail, among which mingle the roses of Lancaster and York, bears sterling evidence as to the date of the building. The cupboard on the left-hand side of the fireplace, with its door partly open, was used for keeping the dry kindling with which to light the fire. The table in the foreground is the original one in use over 300 years ago. Of eighteen stools only one remains, the rest having all long since been destroyed.

Sketch No. 3 shows one of the old iron dogs which bear many unmistakable marks of the blazing logs which they at one time supported. The tops are movable and are not the originals. The escutcheon illustrated is that of Whitgift's bedroom door.

In conclusion, I wish to say that those visiting the Hospital should seek out in the first place Archbishop Whitgift's old apartments (entered from the staircase under the second archway), now occupied by the warden, who very kindly assures me he will do all in his power to interest his visitors.

Croydon. BERNARD M. GOODWIN.

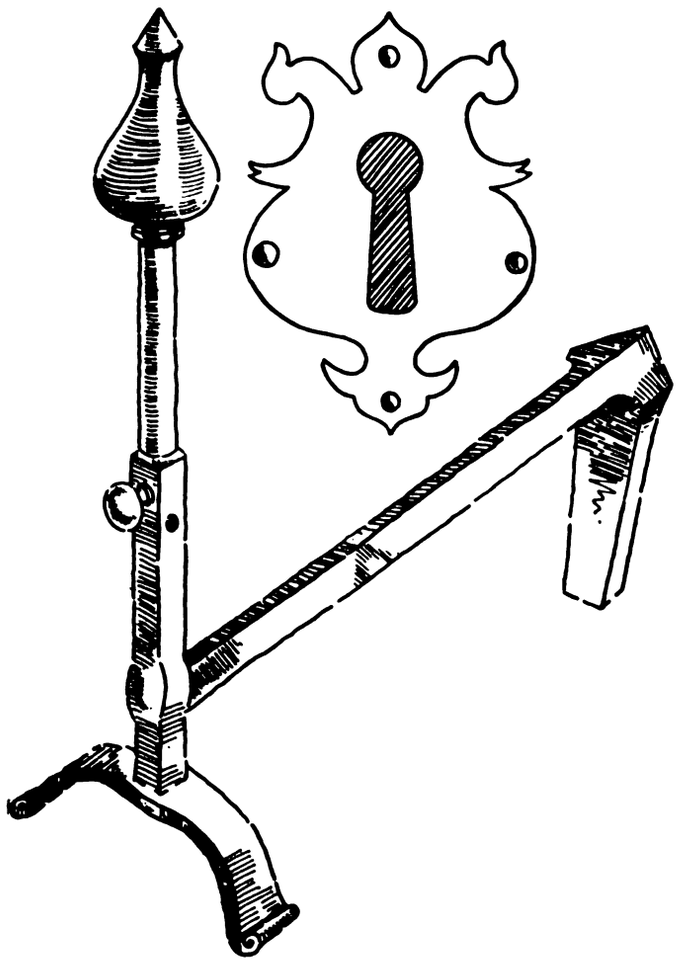


Fig. 3. Firedog and Lock Escutcheon, Whitgift Hospital.

NOTES ON CEMENTS AND MORTARS.

IN Volume 175 of the *Proceedings* of the Institution of Civil Engineers Mr. A. C. Davis gives the results of his investigations into the Le Chatelier test for the soundness of Portland cement. He concludes that the Le Chatelier method puts the testing of the expansion of cements upon a distinct quantitative basis, which is an eminently desirable step in advance, and a consideration certainly at the time of the test, if at no other period. It is a test easily manipulated, with results readily calculated, clearly comparable, and at once declaring the soundest cements; and so long as the consumer desires to use one product possessing a smaller expansion tendency than another, other qualities being equal, there is surely a distinct advantage to be obtained from the use of this test. The author's experiments were made also to test the statement that rotary kiln cements show an increased expansion when tested by the Le Chatelier method after aeration. He finds that this is not the case. Rotary kiln cements, tested when fresh, show a smaller expansion than fixed kiln cements, fresh; on aeration, the expansion of rotary kiln cements decreases slightly, or remains nearly constant, whilst that of fixed kiln cements usually decreases considerably.

Now and then a cement is found in either class, the expansion of which decreases at first on aeration, and then on further aeration rises again to the initial value, after which it falls again. Mr. Davis is of opinion that the 5 mm. expansion allowed by the British Standard specification is a much more stringent limit than the tensile tests imposed by the same specification, and has the effect of excluding many sound fixed kiln cements, which satisfy the tensile tests and are otherwise satisfactory.

The subjoined table shows that when two samples of fresh cement are tested the relative degree of expansion in the finely-divided component parts is greatest in the coarser residues and least in the finished cement from the rotary kilns. In the ordinary kiln cement, however, the constituent having least expansion appears to be the flour, after which comes the finished cement, and finally the residue and grit, with the largest expansion.

The expansions are in millimetres, and for convenience in comparison the results are arranged in pairs of columns.

Herr H. Ambronn, by studying the behaviour of cement during setting, by means of the microscope, has been able to trace the recrystallisation and formation of colloids during that process. The cement was placed as a very thin layer on slides, which were moistened, covered as usual, and kept under bell-jars containing water to prevent drying of the cement. During the first few days the individual particles of the cement were seen to become surrounded by a large number of exceedingly fine needles and hexagonal plates, the latter being easily mistaken for the former owing to their more or less oblique position.

A good light is required to see the needles. Both needles and plates show negative double refraction. After a few days a third kind of crystal was developed, also consisting of hexagonal plates showing double negative refraction, but with a diameter of up to about 0·5 mm. These plates may enclose whole groups of cement particles. If the slides were not protected from air, a fourth kind of "biscuit-shaped" crystals, consisting of calcium carbonate, was also formed. These crystals eventually changed into rhomboids of calcspar. Finally, after some time the fine needles and plates, as well as unchanged particles of cement, became covered with a transparent colloidal envelope, which at first appeared in the form of minute drops, and later coalesced until it completely surrounded the crystals and particles.

Mr. Muth has carried out experiments to

Expansion on Boiling, Showing Results after Aeration for the Periods Tabulated.

	Fresh.		Seven Days.		Fourteen Days.		Twenty-one Days.		Twenty-eight Days.	
	Rotary.	Ordinary.	Rotary.	Ordinary.	Rotary.	Ordinary.	Rotary.	Ordinary.	Rotary.	Ordinary.
The bulk cement	2·0	3·5	1·5	2·0	1·5	2·5	1·5	2·25	1·25	3·5
Residue on 180 by 180 mesh	25·25	23·75	22·5	20·25	23·5	21·25	24·0	21·5	21·5	27·0
Cement through 180 by 180 mesh	4·5	2·75	3·75	2·25	2·0	1·00	1·75	2·5	3·0	1·0
Grit from flourometer	38·75	21·0	43·5	20·00	41·0	18·5	39·0	12·5	37·5	9·0
Flour from flourometer	2·25	1·0	1·5	1·50	1·25	1·0	2·5	1·75	1·75	2·75

Digitized by Google

elucidate the decomposition of Portland cement. Cement was treated with varying proportions of water—from 2½ to 800 times by weight—and prevented from setting by shaking continually at first. The phenomena which occurred are described in detail in the *Thoninder Zeitung*, and practically confirm Ambronn's observations in the preceding note. When a large excess of water is used, needle-shaped crystals are produced first, accompanied by a large increase in the volume occupied by the cement; later on a small quantity of a colloid is also formed. As the quantity of water used is decreased, the quantity of these crystals produced diminishes, as also does the increase in volume, whilst at the same time the quantity of colloid formed increases. Mr. Muth concludes that only the colloid plays a part in the setting of cement, and that the formation of crystals of calcium hydroxide and of the needle-shaped crystals observed, can be of importance only as regards the final hardening of the cement.

Herr W. Michaelis, sen., has recently expressed his views as to the setting of calcareous hydraulic cements as follows:—

The hardening is due entirely to the formation of colloidal compounds practically insoluble in water. Of these compounds calcium silicate is by far the most important, calcium aluminate and ferrite playing similar but very subsidiary functions.

On gauging Portland cement with water, a saturated solution of calcium hydroxide, aluminate, ferrite, and sulphate is obtained almost at once, from which needle-shaped crystals are soon deposited, as the water necessary for solution is taken up by adjacent particles of the cement. So far the process is analogous to the setting of plaster of Paris, and if the hardening of cement consisted solely in this, the resulting mass of crystals, consisting of the compounds mentioned above, to which calcium carbonate and calcium sulpho-aluminate are added later, would be as little resistant to the prolonged action of water as plaster is. The cement particles, however, which have become deprived of lime, and made richer in acid substances by this process, soon begin to take up lime and water again from the strong solution of calcium hydroxide surrounding them, with formation of hydrated colloidal calcium silicate, aluminate and ferrite. The water is given up again by these hydrated colloids to fresh particles of cement; the lime remains absorbed. As more lime is taken up, whilst water is lost, the hydrated colloids set to firm and hard colloids, and this process constitutes the true hardening of hydraulic cements. The whole process can be watched under the microscope, as described by Le Chatelier, Ambronn (see *ante*), and others. A number of direct experiments are adduced in support of the above theory. Thus Portland cement treated with a large quantity of water and prevented from setting by shaking loses lime until approximately monocalcium compounds of silica, etc., are left. If this leached cement is then shaken with a saturated solution of lime-water, a small quantity of lime is taken up, and the particles swell enormously in size. If, on the other hand, the leached cement is cautiously covered with the saturated lime-water, so as not to disturb the particles, lime is also taken up, a marked change in colour from brown to white takes place, but, instead of swelling, the particles become firm and set together. Magnesia has a solubility in water of 1 in 55,000 parts, a proportion too small to allow of the formation of a solution sufficiently basic to enable the silica to withdraw it from solution, and so to form colloidal magnesium silicate. Magnesia is thus almost an inert substance in Portland cement. Alkalies in general delay the setting, as they tend to form soluble silicates, and their carbonates do the same thing by precipitating inert calcium carbonate as fast as the lime goes into solution, and thus delaying the formation of the strong solution of calcium hydroxide necessary. The action of other substances is explained on the same lines.

M. Merkulow has tested the effect of a silicofluoride in increasing the resistance to compression of Portland cement. Cubes of 7 centimetres side (2¾ in.) of normal Portland cement mixed with different proportions of sand were allowed to harden for two to three days, and then repeatedly immersed for two to five hours in zinc "fluate," which is a solution of zinc silicofluoride. After drying for at least twenty-four hours, the treated cubes were kept in air or water for different periods, or repeatedly frozen, and the compression tests obtained compared with those furnished by similar cubes not treated with the silicofluoride solution. The results obtained are given in the table as kilogrammes per square centimetre, each one of which is equivalent to 14·2 lb. per square inch.

Cubes of the 1 to 3 mixture, treated with the zinc "fluate," and untreated, were also allowed to harden in air for fourteen days, and then tested by Bauschinger's abrasion method, the disc making 200 revolutions. Three treated cubes, with an initial weight of 768 to 777 grammes, lost 27 to 42 grammes by abrasion; three similar untreated cubes, weighing initially 740 to 763 grammes, lost 318 to 321 grammes. It is evident from these figures that the resistance to compression and the hardness of the cubes were increased very considerably by the treatment with the silicofluoride.

Mr. H. S. Spackman, in the *Journal* of the Franklin Institute, has set forth his investigations into the effect of calcium aluminate on mortars and natural cements.

Calcium aluminate was found to have a decided accelerating effect on the setting time, and to increase the ultimate strength of lime mortars and natural cements. Clay and shale which were devoid of binding properties when used by themselves developed cementitious and hydraulic properties when mixed with calcium aluminate. Practically any desired setting time could be obtained by proportioning the amounts of calcium aluminate, used as accelerator, and of calcium sulphate, used as retarding agent. The strength of mortars made with such mixtures could be increased above the strength of Portland cement at the earlier periods of setting, by using a sufficient quantity of the accelerator. The addition of small proportions of calcium aluminate to hydrated lime alone gave valuable wall plaster compositions having quick hardening and increased spreading properties. Larger proportions of aluminate gave strongly hydraulic compositions of great strength. The author publishes the results of a large number of tests made with mortars containing calcium aluminate, of which the most striking is a comparison of the tensile strengths of two series of natural cement mortars at various periods. The one series (a) had as basis natural cement containing 10 per cent. of added aluminate; and the other (b) untreated cement. The tensile strengths in pounds per square inch after twenty-four hours, seven days, twenty-eight days, and three months respectively, were:—For (a) 155, 229, 329, and 437; and for (b) 43, 88, 173, and 237 respectively. The author concludes that judicious mixtures of natural cement clinker, with calcium aluminate and calcium sulphate, may yield slow-setting and quick-hardening cements, which, by reason of their low cost and ease of manufacture, may compete seriously with Portland cement.

Mr. H. Urbach has experimented to discover the cause of the efflorescence which sometimes appears on cement mortar. This unsightly formation of calcium carbonate appears on the surface of many Portland cements after hardening, and he has tried the addition of trass for the purpose of preventing this appearance of these objectionable white calcium salts. A cement known to give a large efflorescence was taken and made into pats, 2 parts by volume to 5 parts of building sand. After setting the pats were laid in a room the atmosphere of which was nearly saturated with moisture, and once a day the whole surfaces of the pats were moistened with water from a small syringe, but little pools of water were not allowed to form in any depressions, these conducing very much to the deposition of salts. On the fifth day a slight trace of salt appeared on the pats without any addition of trass, and increased from day to day, although the pats were washed with water every second day. This was discontinued on the twentieth day, and then a uniform mildew-like skin formed. The pats to which trass had been added showed a slight layer on the twelfth day, which after careful washing did not recur, and after ninety days no change was observed, except a general change in colour. The pats just mentioned containing trass were mixed 2 volumes of cement, 4 of sand, and 1 of trass; but other pats which contained 0·4 to 2·0 volumes of trass to the cement and sand stated gave similar results, but some pats to which trass of a different origin was added did not give quite such satisfactory results. It may be that in these latter experiments the alkalies played an important part as conditioning agents, but were modified in their action by the silicic acid, or that the trass employed was not suitable for the purpose on account of its composition. The essential factor needs to be definitely ascertained, as trass is of very variable character. It is a tufaceous alluvium which occupies wide areas in the region of the Rhine. Its basis consists almost entirely of pumice, in which are included fragments of basalts and other lavas, pieces of burnt shale, slate, sandstone, and even parts of trees.

Cement to Sand.....	One to One.		One to Two.		One to Three.		One to Four.	
Treatment	Treated.	Untreated.	Treated	Untreated.	Treated.	Untreated.	Treated.	Untreated.
7 days in air	147	132	133	114	103	59	54	25
14 days in air	151	139	135	120	121	61	55	31
28 days in air	151	142	134	122	130	65	56	34
7 days in water	232	173	171	134	125	81	78	48
14 days in water.....	237	173	175	136	120	85	80	49
28 days in water	236	172	169	139	120	87	81	50
7 times frozen	204	133	166	121	94	67	43	22

GENERAL VIEW, LEICESTER'S HOSPITAL WARWICK.

THE exterior view of Leicester's Hospital, with its detached chapel poised high above the arch of the old gateway, is one of the most picturesque to be found in the old town of Warwick. The composition may possess but little real architectural character, but the many gables, steep-tiled roofs, clusters of chimney-shafts, projecting windows, and overhanging upper stories succeed in producing a mass of broken and unexpected lines that captivate the mind by the quality of what, for the want of a better word, is called the picturesque.

The small chapel of St. James is built above the old West Gate of the town, and is appropriated to the use of the hospital brethren. The embattled tower dates from the XIVth century, when it was erected by Thomas Beauchamp. The whole edifice was restored in 1863, when the flying buttresses were added to give stability to the south wall. Inside, the chapel is divided

Digitized by Google

into two portions by a beautiful Perpendicular oak screen, within which are old oak stalls for the use of the master and brethren. In the space outside the screen a few chairs are provided for any strangers who may care to attend the service held daily at ten o'clock. It is a matter for regret that the large clock has been placed so as to hide the tracery of the tower window on both sides, and the same thing is to be seen at Henley-in-Arden, and in a large number of Midland towns and villages. It is somewhat rare to find an old town gate with a church still standing above it, but here at Warwick we find not only the example already mentioned, but the old East Gate is still standing intact, and this also with a church perched on top. This building of church and gate one above the other may have arisen in consequence of the limited amount of space available within the restricted boundaries of a mediæval walled town. Be this as it may, the custom was not an uncommon one, for at Canterbury the Church of the Holy Cross stood originally above the well-known West Gate of that city until 1380, when it was rebuilt on its present site, just within the walls, by Archbishop Sudbury. A page of sketches and a short account of Leicester's Hospital appeared in the *Builder* of August 29, 1908.

SIDNEY HEATH.

THE TRANSVAAL ARCHITECTS AND REGISTRATION.

THE *Journal* of the Society of Architects prints the text of the Bill promoted by the Transvaal Society of Architects to establish Registration of Architects in the Transvaal. It is described as "A Private Act to provide for the Registration of Architects in the Transvaal," and was we believe obtained by private negotiation and by the official act of the Transvaal Society as a body. It received assent on July 7, and is to come into operation in six months (from that date, apparently).

A Provisional Committee has been appointed to deal with the subject *pro tem.* The following are the conditions under which architects are eligible for registration:—

"*Persons Entitled to be Registered by the Provisional Council.*

6. The provisional council shall forthwith open a register in which any person shall be entitled to be registered as an architect, in pursuance of this Act, who proves to the satisfaction of the provisional council within six

Digitized by Google

months next after the coming into operation of this Act that at the date of the coming into operation of this Act he was resident in British South Africa, and

(*a*) was a member of the Transvaal Institute of Architects or of any other institute or society of architects of equal standing; or
(*b*) was publicly and *bonâ fide* practising as an architect in the Transvaal; or
(*c*) was at such aforesaid time, or prior to the coming into operation of this Act, engaged as an assistant to an architect in the Transvaal and has had at least seven years' professional experience; or
(*d*) that he is possessed of qualifications and experience which may be declared by the Governor-in-Council, by proclamation to be equal to those in one or other of the foregoing instances.

Persons Entitled to be Registered by the Council.

7. Upon the expiration of six months from the date of the coming into operation of this Act, no person shall be entitled to be registered in the said register as an architect unless he shall prove to the satisfaction of the majority of the whole council hereinafter mentioned that at the date of his application for registration he is resident in British South Africa, and has attained the age of twenty-one years; and

(*a*) has passed the examination for associateship of the Royal Institute of British Architects or the examination for membership of the Society of Architects of London or the examination or examinations conducted by the Council and prescribed by the by-laws of the Association or some other examination which may be declared by the Governor-in-Council by proclamation to be equivalent to one or any of these examinations, and has in addition had at least four years' professional and practical experience as an assistant to an architect; or
(*b*) that prior to, or at any time of, the coming into operation of this Act he was registered as an Associate or Fellow of the Royal Institute of British Architects or as a member of the Society of Architects of London or the Transvaal Institute of Architects or of some other society or institute of architects which the Governor-in-Council may by proclamation declare to be of a standing equal to that of one of the said institutions."

We may quote also the list of offences for which an architect shall be liable to be suspended from practice or have his name removed from the register. There is a wholesome thoroughness about them:—

"*Offences.*

15. The following acts and practices, whether of commission or omission, upon the part of any architect shall be offences under the provisions of this Act, and if found guilty by the Supreme Court of having committed or engaged in any one or more of such acts or practices, such architect shall be liable to be suspended from practice for any period that may be decided on by the said court, or to have his name removed from the register as hereinafter provided; that is to say—

(*a*) allowing any person except a registered architect in partnership with himself to practise in his name as an architect;
(*b*) directly or indirectly sharing his professional remuneration with any person, not being a registered architect in partnership with him, or directly or indirectly accepting any share of the professional remuneration of such person or any commission or bonus thereon;
(*c*) signing accounts, statements, reports, specifications, plans, or other documents purporting to represent any architectural work performed by himself which work shall not have been performed under his personal supervision or direction;
(*d*) directly or indirectly paying a person a commission for bringing him work, giving any person monetary or other consideration as a remuneration for bringing him work, or for inducing other persons to give him work;
(*e*) touting or otherwise improperly obtaining or attempting to obtain work;
(*f*) performing any architectural work in connexion with any matter which is the subject of dispute or litigation upon condition that only in the event of the said dispute or litigation ending favourably for the party for whom the work is performed shall payment be made for such work;
(*g*) conducting himself unprofessionally or dishonourably in connexion with any work performed by him as an architect;
(*h*) wilfully disobeying, refusing, or neglecting to carry out and perform any by-law or order lawfully adopted and established by the Association regarding any point of professional practice;
(*i*) engaging in any practices or performing any acts similar to those acts and practices prohibited in the aforegoing sections."

EXTENSION OF THE LIVERSEDGE SEWAGE WORKS.—Extensions have been made to the Liversedge sewage works at a total cost of about 16,000*l*. The engineers have been Messrs. Charles Gott & Sons, Bradford, and the contractors Messrs. Abraham Graham & Sons, Huddersfield.

THE ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

A MEETING of the Selection Committee was held at the Bureau Offices, 24, Hart-street, Bloomsbury, W.C., on September 24. Mr. H. D. Searles-Wood was in the Chair, and there were present Sir Chas. Nicholson, Bart., and Messrs. Louis Ambler, A. W. S. Cross, Wm. Flockhart, and T. Warwick.

A number of manufacturers submitted specialities for the approval of the Committee, amongst which may be mentioned the following:—

New patent ventilating flue blocks constructed to bond into brick walls and providing enlarged areas for the flues without increasing the thickness of the walls.

Various sections of metal casements guaranteed to be watertight in any position.

Patent ventilating radiators.

Patent ventilating chimney.

Patent fireproof doors constructed of pressed steel plates filled with a special fire-resisting material.

Designs in lead light glazing and in electric light fittings, also patent electro copper prism glazing, greatly increasing the light of rooms, etc.

Various new sanitary fittings, including a siphonic water-closet.

Also red facing bricks, tiles, artificial stone, and patent window fittings.

Any manufacturers desiring to come before the next committee meeting, which will be held shortly, should communicate with the Secretary, 24, Hart-street, Bloomsbury, W.C.

NOTES ON DISINFECTANTS.

THE annual report for 1908 of the Medical Officer of Health for the Borough of Poplar, Dr. F. W. Alexander, contains an account of the use over a considerable period of an electrolytic disinfectant. The plant for the manufacture of this disinfecting liquid, which contains hypochlorite of magnesium, has now been in operation for three years. It is capable of turning out each eight hours 185 gallons of solution containing 4½ to 5 grammes of available chlorine per litre, or about 350 grains per gallon. During the year 1908 the cost of repairs, renewals, and improvements for the whole installation was about 45*l*. Of the solution, 28,280 gallons were manufactured at the following costs, which omits labour:—Electricity, 4,543 units at 1½d. equals 28*l*. 7s. 10d.; magnesium chloride, 5,358 lb., 10*l*. 9s. 3d.; salt, 6 tons, 9*l*. 18s.; caustic soda, 5*l*. 17s. 4d.; water, 1*l*. 10s.; total, 56*l*. 2s. 5d., or 0·476d. per gallon. In the past three years 60,000 gallons of the solution have been made at a cost of about 120*l*. for materials and electricity, and 2*l*. for the replacing of twelve zinc electrodes. A sample of the solution which on March 27, 1906, contained 4·818 grammes of available chlorine per litre, retained thereof 3·785 grammes up to October 29, 1908. Upon the authority of the bacteriologist, Klein, it is stated that 1 oz. of the fluid to 150 oz. of water will kill the cholera germ in two and a half minutes, and will also kill the typhoid bacillus. As to the financial results during the three years of the working of the plant, it is reported that the capital cost thereof, and also that of the depôt where it is installed, have been recouped, and has also resulted in a saving to the Borough of over 1,200*l*.

In the *Journal of Hygiene* for 1908 Messrs. H. Chick and C. J. Martin have stated the principles involved in standardising disinfectants, and the influence of organic matter on their germicidal value.

They find that the efficiency of a disinfectant with regard to organisms varies as much as ten times, according to the organism tested. For spores, metallic salts are the most effective germicides, whilst the action of phenol (carbolic acid) and emulsified disinfectants thereupon is too feeble to be worthy of practical consideration. A virulent type of any particular species of bacillus is, as a rule, more difficult to kill than a non-virulent type thereof. With the metallic salt disinfectant, mercuric chloride, the reduction caused by blood serum is much greater than with phenol. The presence of finely-divided organic matter, such as animal charcoal, dust, fæces, bacteria, etc., affects the germicidal value of emulsified disinfectants containing tar acids (cresylic acid and its homologues) in a much greater degree than that of solutions of carbolic acid. The tar acid can be removed by the addition of any of the finely-divided forms of organic matter just referred to. Finely-divided powder of dried fæces in suspension, to the extent of 3 per cent., had the effect of reducing the efficiency of commercial cresols from about 30 to 50 per cent., and of phenol to the extent of about 10 per cent.

Herr E. Prior gives an account of "Keramyl," a disinfectant that he has examined chemically and bacteriologically. It consists of a solution in water of commercial hydrofluosilicic acid, the sample tested containing 26 per cent. of the acid and small proportions of silicic and sulphuric acids, ferric oxide, alumina, lime, and alkalis.

Keramyl in a solution of 2 per cent. strength exerts a vigorous solvent action on zinc and iron, and a less but appreciable action on tin; but it does not attack copper or brass. Experiments upon the following bacilli—Sacch. Frohberg, Mycoderma cereavisiæ, Bacterium aceti, Bacterium fluorescens liquefans, Oidium lactis, and Penicillium glaucum show that a 1 per cent. solution of keramyl destroys them in twelve hours; whilst, with a 2 per cent. solution, four hours is sufficient to kill the same organisms. Rubber hose and filtering material which had become strongly infected were disinfected in four hours by a 2 per cent. solution of keramyl.

ANCIENT ARCHITECTURE.

MR. BANISTER FLETCHER gave the introductory lecture of a course of twenty-four University Extension Lectures on "Ancient Architecture" at the British Museum on Tuesday afternoon. He first dealt with the nature of the lectures to be given during the coming winter, saying that he would trace the evolution of ancient architecture in Egypt, Assyria, Greece, Rome, and Byzantium on broad lines from a popular point of view. Architecture was the visible exponent of civilisation, embracing the other arts, and all design of the present day was founded upon old art suited to modern needs. The study of architecture was thus necessary to architects, craftsmen, and art students, and, further, it would be difficult to find anyone to whom a knowledge of it would not be beneficial. The author, journalist, photographer, and antiquary required a knowledge of the evolution of the successive periods of architecture in order to enable them to take an intelligent interest in their work. The teaching profession are also endeavouring to make history interesting by referring to the dwellings and temples people constructed to suit their social and political requirements. A knowledge of architectural history also added much to the enjoyment and benefit of travel, which is so popular in these days of quick and easy transit, for it would enable travellers to take an intelligent interest in the buildings and monuments from which the history of the past could be gleaned. By a study of the most beautiful buildings which had been erected in past ages an improvement in the architecture of our own country would assuredly result. The lectures are to be illustrated by some 1,200 views, the object being to transport students, as it were, to the actual sites, and so familiarise them with the principal buildings, and during the twenty-four hours so spent they would be enabled to study what would require in actual travel at least as many months.

Mr. Fletcher next gave a short illustrated

Digitized by Google

review of "Ancient Architecture," in order to show the various types of buildings erected during the period. This course of lectures is the first illustrated by lantern slides given in the British Museum, and should be of special value to the student, as at the Museum he was in the midst of the world's richest collection of ancient fragments of art, of which the lectures form an explanation. Indeed, it should make the Museum much more useful and enhance its value to the public which justifies its existence. The trustees are, therefore, to be heartily congratulated on this new departure.

The lectures are given on Tuesday afternoons at 4.30 in the Assyrian Saloon. The subject of the next lecture will be "Egyptian Architecture," and all particulars can be obtained from Miss Gaudet, Hon. Secretary of the Course, 120, Cheyne-walk, Chelsea, S.W.

Archæological Societies.

SUSSEX ARCHÆOLOGICAL SOCIETY'S VISIT TO WEST SUSSEX.

On Saturday, the 25th ult., the Sussex Archæological Society held a meeting on the site of Tortington Priory, near Arundel, where extensive excavations have brought to light numerous things of interest. There was a morning gathering at North Stoke, where the ancient church is now restored; Mr. P. M. Johnston, F.S.A., F.R.I.B.A., explained the features of this ancient building. When he made his first examination of the church he was not inclined to judge that there was anything there of earlier date than the beginning of the XIIIth century. The careful investigation made since has compelled considerable recasting of dates; thus much work in the nave is now ascribed to the period *circa* 1080. Two niches on either side of the chancel arch have been discovered, as well as some rudely-executed wall paintings, probably the work of a mediæval village artist. One of them, about the chancel arch, displays the symbolic grapes. The precious fragments of ancient glass—among the oldest in Sussex—have been cleaned. The largest fragment is in the east window, and has for its subject the Coronation of the Blessed Virgin. The proceedings of the afternoon began in Tortington Church, of which Mr. Johnston described the features to a gathering which quite filled the little building. He called special attention to the Norman beak head moulding of the chancel arch, with its grotesque faces. There is only one other arch with this moulding in the county, at New Shoreham. The roof of the church was of very early date, and the speaker remarked that in some cases he had very little doubt in assuming that we had the early Saxon timbers remaining. Here the XIIIth century roof still covered the walls. Afterwards the company moved to the site of Tortington Priory. The excavations here, as Mr. Johnston pointed out, have proved beyond doubt that the priory was not the poor and mean foundation which it has been the fashion to represent it. The choir was of about the date 1180; the nave of from 1260 to 1280. The width of the choir was 69 ft., and its length 80 ft. One of the most interesting discoveries made during the excavations was of the lead coffins, richly ornamented. Lead coffins were common, said Mr. Johnston, but coffins ornamented in this manner were rare. Afterwards the company moved across the site of what was probably the cloister-garth to the excavations which have been made on the site of the domestic buildings of the priory, and which seem to indicate kitchen, refectory, cellarage, cellarer's parlour, prior's lodging, dormitory, and necessarium. A move was made from the priory to Arundel Parish Church, where the mural paintings in the nave, representing the seven capital sins and the seven corporal works of mercy, were inspected. Tea at the Norfolk Hotel brought the afternoon to a close.

WINDOW, PYECOMBE PARISH CHURCH, SUSSEX.

THIS simple window was designed for a little village church hidden away on the Sussex Downs.

It is a companion to two other windows which Mr. Orr exhibited some years ago at the Academy and the Arts and Crafts, and which were illustrated in our pages.

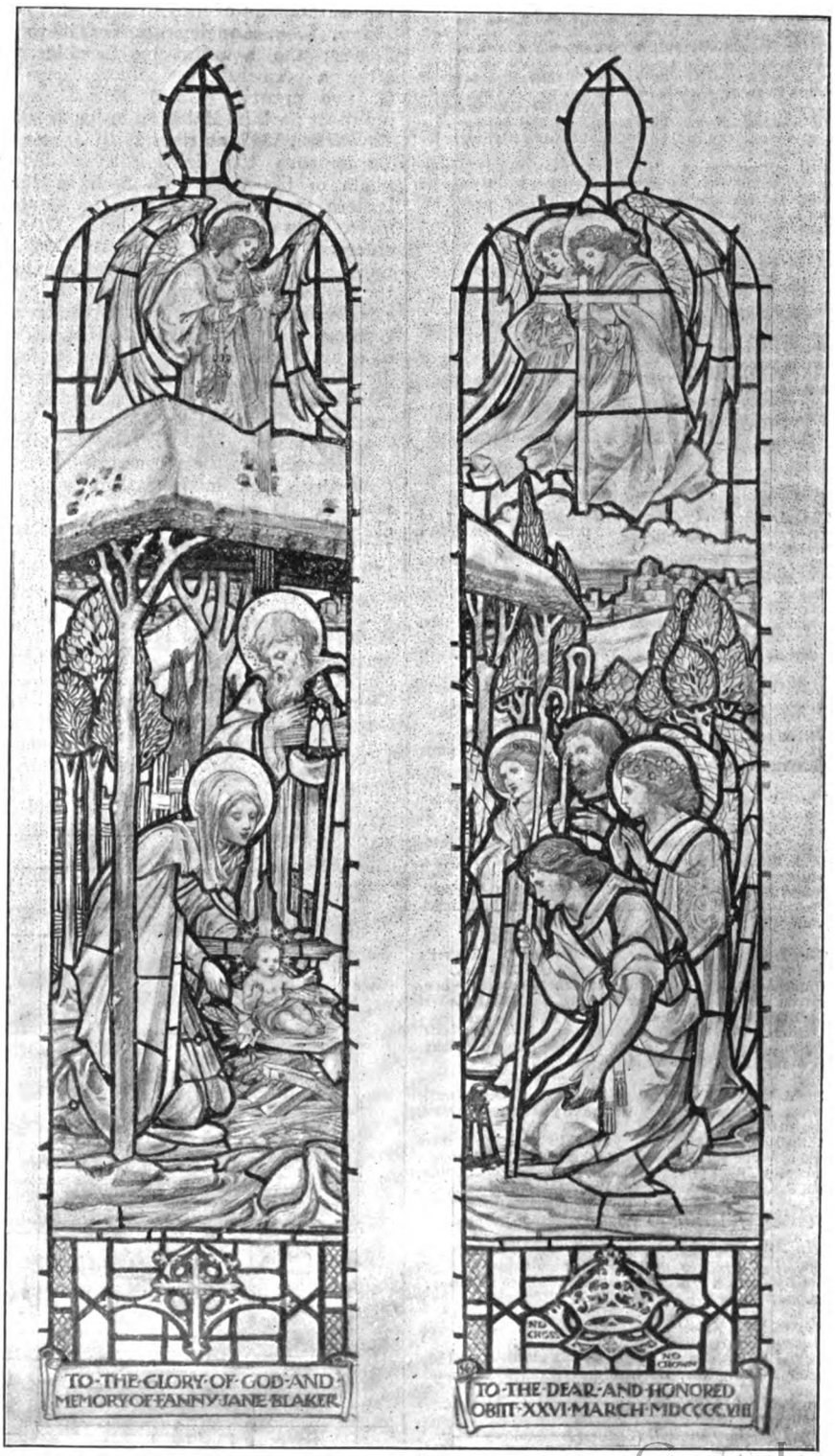
The subject is the Adoration of the Shepherds led to the Crib by Angels. The general effect of the glass in a rich massing of pale and dark rubies and blues upon green foliage with a background of snowfields bordered by the grey blue buildings of Bethlehem which merge into the palest silver slabs on which are placed white angels with pale white and ruby wings.

In the left-hand light St. Joseph is robed in a pale ruby outer robe, with ruby on blue, almost black in parts, under robe. The Madonna also has robes of one colour, pale blue cobalt outer robe, with dark indigo picked out with emerald green spots of colour for an under robe.

The same scheme of rubies and blues with browns and greens with whites is carried out in the right-hand light.

The window was designed and drawn by Mr. Arthur A. Orr, of Harrow, and was carried out under his supervision in the studios of Mr. Arthur J. Dix, of Gower-street.

NEW BATHS, HARROGATE.—A new suite of baths is in course of erection on a site close to the Royal Baths, Harrogate. The premises are estimated to cost 10,000*l.*, and have been designed by Mr. Byker, Architect to the Corporation. The contractors are:—Brickwork and masonry, Messrs. Charles Dawson & Son; joiners, Messrs. Rhodes Brothers, Shipley; plumbers, Messrs. H. Braithwaite & Co.; plasterers, Mr. A. Calverley; slater, Mr. T. Rayner; decorators, the Decorative Supply Company.



Window, Pyecombe Church, Sussex. Designed by Mr Arthur A. Orr

Digitized by Google

THE BUILDER

OCTOBER 9, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 15s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, OCTOBER 8.

The Architectural Association.—Opening meeting of the new session. Distribution of prizes and President's Address. 7.30 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. G. F. McCleary on "Elementary Statistics." 7 p.m.

Glasgow Architectural Craftsmen's Society.—The first meeting of the fourteenth session will be held in Room No. 315, College-buildings, George-street, when Mr. James Flett, President, will deliver an address on "The Surveyor's Level, its Use and Adjustment." 8 p.m.

SATURDAY, OCTOBER 9.

Incorporated Association of Municipal and County Engineers.—Home District meeting to be held at Winchester.

Northern Architectural Association.—Visit to Scotswood Council Schools (Messrs. Fenwicke, Watson, & Curry, Architects), and Denton Hall.

MONDAY, OCTOBER 11.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. F. S. Russell on "Heating." 8.15 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Science: Physics, Chemistry"—I. 7 p.m.

Bristol Society of Architects (At the Fine Arts Academy, Clifton).—Mr. Raymond Unwin on "Town Planning." 8 p.m.

TUESDAY, OCTOBER 12.

The Institute of Builders.—Dinner in De Keyser's Royal Hotel, Victoria-embankment, E.C. 6.30 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. II.—"Egyptian Architecture." 4.30 p.m.

Institute of Sanitary Engineers, Ltd. (Students' Lecture).—Mr. G. W. Chilvers on "Building Construction so far as it Relates to Sanitation." 7 p.m.

WEDNESDAY, OCTOBER 13.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Science: Physics, Chemistry"—II. 7 p.m.

Manchester Society of Architects.—First Sessional Papers Meeting at the Society's Rooms, 16, St. Mary's Parsonage, Manchester. 6.30 p.m. President, Mr. P. S. Worthington, M.A., F.R.I.B.A., will read his Presidential Address.

THURSDAY, OCTOBER 14.

Institute of Metals.—Autumn meeting, Manchester. 10 a.m.

Carpenters' Company, Carpenters' Hall, London-wall (Lectures on Sanitary Building Construction).—Mr. H. D. Searles-Wood on "Selection of Site for a Building." 7.30 p.m.

FRIDAY, OCTOBER 15.

Architectural Association Debating Society.—Debate on "Competitions, Open *v.* Limited." 7.15 p.m.

Junior Institution of Engineers.—Visit to the Model Engineer Exhibition, Horticultural Hall, Westminster. 7 p.m.

Institute of Metals.—Autumn meeting, Manchester (concluded). 10 a.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Science: Physics, Chemistry"—III. 7 p.m.

Institution of Mechanical Engineers.—Professor W. E. Dalby on "Heat Transmission." 8 p.m.

SATURDAY, OCTOBER 16.

Institution of Municipal Engineers.—Visit to Works of the Associated Portland Cement Manufacturers (1900), Ltd., at Northfleet.

Incorporated Association of Municipal and County Engineers.—South Wales District Meeting, to be held at Cardiff.

Illustrations.

CHURCH OF ST. BOTOLPH, BISHOPSGATE WITHOUT.

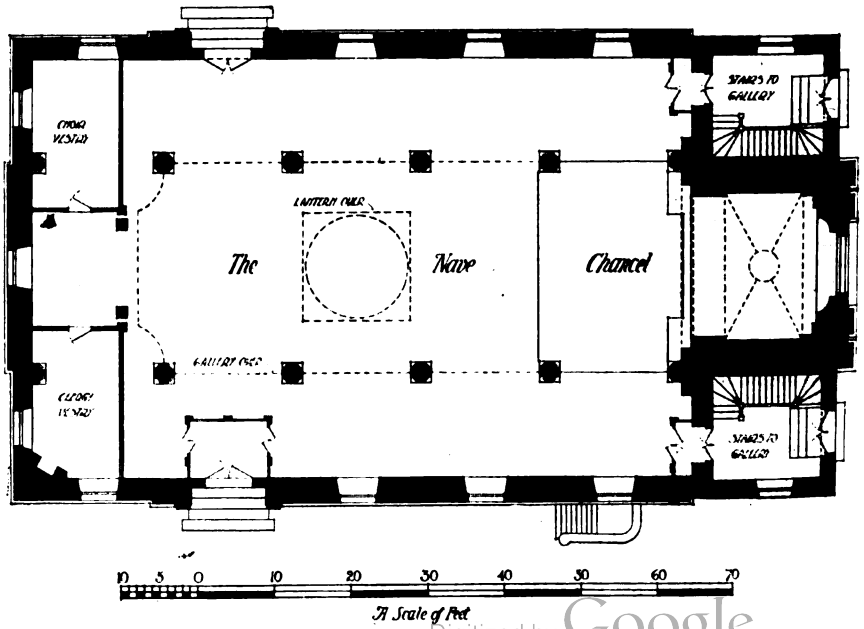
THIS is one of the three existing churches—the fourth stood in Billingsgate—which were erected in London just outside gates in the City walls, and were dedicated to the saint, a Cornishman, a patron of travellers. It was built in 1725-9 in pursuance of an Act, 10 Geo. I., c. 5, obtained by the parishioners for rebuilding the church which had escaped from the Great Fire. The Act limited the cost to 8,000*l.*, and names James Gold as the appointed architect. There is, however, some discrepancy as to the authorship of the design. In *London Prices*, 1750, Langley ascribes it to John James; the aquatint by Hawkins, 1802, after a drawing by Moore, says that G. (we presume Giles) Dance was the architect; whilst Malcolm, in his *Londinium Redivivum*, 1803, ascribes it to James Gold. To improve the lighting a window was made in the west wall, and, in 1820, a lantern was inserted in the roof over the nave. The organ, by Byfield, 1750, was enlarged by Gray & Davison, 1867, and removed from before the west window to the east end. Twenty years ago the exterior stone work, which had greatly decayed, was repaired by Messrs. Higgs & Hill, at a cost of some 2,000*l.*, under the superintendence of Mr. Bentley, who designed the memorial tablet, with profile portrait, erected to the memory of the late Reverend William Rogers, rector, 1863-96. St. Botolph's is the church of the Honourable Artillery Company, who, in 1893-4, presented two stained-glass windows, and a stand of their old colours. The churchyard was enlarged in 1615-7, and again in 1760, when the Court of Common Council granted the site of some houses which faced the street, and the passage into Broad-street was made. The watch-house, rebuilt in 1771 at the south-east corner, has since been converted into two shops. In the graveyard is the tomb, 1626, with an inscription in Persian characters, of Coya Shauwsware, Secretary to the Persian embassy; in the church is the monument, 1650, of the famous merchant, Sir Paul Pindar, ambassador *temp.* James I. to Turkey, a patron of architecture, and donor of 10,000*l.* for the screen and south transept, for Inigo Jones's work at St. Paul's, who lived and died in the house, not far distant, the front whereof the Great Eastern Railway Company gave to the Museum at South Kensington in 1890. The registers record the baptism, 1566, of Edward Alleyn, founder of Dulwich College, and, 18 December, 1795, of Keats; the marriage, 1609, of Archibald, seventh Earl of Argyll, and Anne Cornwallis; and the burial, 1570, of Edward Alleyn, of the Pye inn, porter to the Queen, and, 1628, of William, second Earl of Devonshire, whose town-house gave a name to the adjacent Devonshire-square, and, 1691, of John Riley, painter. The school-chapel and parsonage-house were erected on the site of All Saints' Church, Skinner-street, 1869-70.

St. Botolph's is an excellent example of the less pretentious churches of its age. The principal frontage being the eastern, suggested the placing of the tower over the chancel, entrances being at the same time secured to the galleries and the body of the church by lobbies placed on either side, thus reversing the more usual type, where these lobbies are situated at the west end. The vestries project into the body of the nave; crude as this looks on plan, in reality it is far from objectionable; inasmuch as the gallery and organ-case overhead render the expedient less immediately obvious. The divisions of nave and aisle are marked by composite columns; semicircular ceiling, broken by the later addition of the lantern, covers the nave. The tower and front walls are of stone, the rest of brick with stone coigns. The view shows the main features of the tower and east front. The nearness of the point of view hides part of the crowning ogival cupola. The caps of the pilaster-like projections on the stage of the tower, immediately above the pediment, are of unusual design, consisting of a broad flat console, on the face of which is sculptured in high relief a cherub's head and wings. The composition of this east front and tower has an air of dignity which is very satisfying; its comparative stumpiness is, we think, rather a merit than a defect.

THE FRONT OF ST. PETER'S, WITH BERNINI'S CAMPANILI.

THIS is a drawing made by Mr. J. Tavenor-Perry, who contributes a long article on the subject on another page of this issue.

It is probably little known, even among architects, that Maderno, who added the lengthened nave to St. Peter's (thereby spoiling the balance of Michelangelo's design) intended his front to have a campanile at each end, though it would appear that the actual design for these was made by Bernini, and



St. Botolph's, Bishopsgate. Ground Plan.

Digitized by Google

that one of them, at least, was built, under his direction, and pulled down only three or four years after it was built.

There must be some curious little bit of history behind this; it is difficult to understand why, having gone to the expense of building it, the church authorities should have so soon acquiesced in its removal. If, however, it was because it was thought that the campanili were badly designed and were out of scale with the building, the judgment does them credit, for they were certainly in the right. St. Peter's wants some such addition, at the extremities of the long horizontal façade, very much; but these are too high, and in every sense monstrous finials are in the worst taste.

Nevertheless, it is not impossible that something in these campanili suggested to Wren, who had made Bernini's acquaintance in Paris, the idea of the campanili to St. Paul's, which he treated with such far superior grace and harmony of proportion. If that be so, it is perhaps the best result that can be credited to Bernini's design.

CORNWALL COUNTY COUNCIL OFFICES:

FIRST PREMIATED DESIGN.

THIS drawing was exhibited at the Royal Academy Exhibition. The elevation is quiet and unpretending, and, we should say, well suited to its surroundings. The architects, Messrs. Silcock & Reay, of Bath, sent us the plan too late for publication. The total cost of the building was estimated at 19,861*l*. The several departments are grouped on distinct floors and in blocks; special attention was paid to the arrangement of the Council-chamber and the surrounding committee-rooms; the caretaker's rooms are complete and self-contained. Local materials are used; the basement being of Cornish granite, the walls of local stone, and the roof covered with Cornish slates.

NEW CATHOLIC CHURCH, WARRINGTON.

WE illustrate to-day a new church and presbytery in the Byzantine style, to be erected at Warrington. The church will accommodate 810 people.

The exterior will be executed in small red bricks with terra-cotta dressings; the sloping roofs will be covered with red pantiles and the flat roof with asphalt.

The interior will be finished with white plaster with a plain semicircular plastered vault over the nave, and a flat, panelled wood ceiling to the aisles. The piers and arches will be finished in Portland cement, and the whole of the plaster work will be left for future coloured decoration.

The presbytery is divided on each floor into two portions, clergy and domestic, each with a separate stair.

An attempt has been made to mask the yard between the presbytery and sacristies.

The drawings were hung in this year's Royal Academy Exhibition. Mr. Matthew Honan, of Liverpool, is the architect.

We have already noticed, in our review of the Royal Academy architectural drawings, the interesting and original treatment of the exterior in this design. The interior looks rather bald in its present state, but it affords, as appears to be the intention, a large field for coloured decoration. The architect has kept in view the desire, in Catholic churches, to make the altar and sanctuary prominent in the architectural treatment.

NEW PREMISES, EUSTON.—New premises are being build by the Amalgamated Society of Railway Servants on a site in the Euston-road. With the exception of the two frontages—the chief one in Euston-road and the other in Gower-street—the building has not been let out by contract, the work being done by labour employed direct by the society. Mr. J. Newcombe, Southampton-street, Camberwell, is the architect for the work.

Architectural Societies.

ARCHITECTURAL ASSOCIATION DEBATING SOCIETY.

The first meeting of the session 1909-10 was held at 18, Tufton-street, S.W., on Friday, October 1, when Mr. J. Nixon Horsfield moved "That registration would be of no advantage to the profession." He said that the movement in favour of registration had failed, and all the good that could be hoped from it would be obtained under the new charter of the Royal Institute of British Architects. It was a fallacy to regard architecture as strictly a profession; it was an art, and must be served as such. Registration would exclude certain good men, such as those who from nervous temperament were unable to pass examinations, and on the other hand include a class of men to whom it was undesirable to give any professional status.—Mr. G. A. T. Middleton, in opposing the resolution, said it was twenty-five years since he wrote suggesting that registration was a subject the Society of Architects might take up. He was then one of a small minority, but now the proportion in favour of registration was eight to one, as revealed by the plebiscite recently taken by the *Builder*. The Royal Institute of British Architects did not prevent unqualified men practising as architects and dragging the name down.—A vote of thanks was moved by Mr. A. E. Bullock and seconded by Mr. A. D. Foster. Other members taking part in the discussion were Messrs. Allan Potter, T. L. Dale, Louis Jacob, and E. Gunn. Mr. Gilbert H. Jenkins was in the chair.—The next meeting of the Society will be held on Friday, October 15 at 7.15 p.m., when the subject for debate will be "Competitions—Open *v.* Limited."

Engineering Societies.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

At a meeting of the Council of the Institution, held at 39, Victoria-street, Westminster, on Wednesday, September 22, twelve applications for membership and seven for studentship were considered. Of the former nine were accepted, of the latter six. The roll of the Institution now stands at 612 members and 82 students, making a total of 694. A design for students' certificate was approved, and the Secretary was instructed to put the matter in hand. It was decided that three Council meetings during the present financial year should be held on a Saturday at 2 o'clock. Notice of the following motion was given: "That the existing classification of members be reconsidered on a wider basis."

SOCIETY OF ENGINEERS.

The following is an abstract of a paper on "The Status of the Engineering Profession," by Mr. G. Allan Thomas, read on Monday, October 4.—"In depicting the difficulties which the professional engineer has to contend with, the author remarks that although the science of engineering enters very largely into modern civilisation, the position of engineers at the present day is far from satisfactory, and will not improve until definite steps are taken to secure for them that recognition which is accorded to members of other professions. The term 'engineer' is too loosely applied, and is often used by those who have no proper claim to be so described. Every branch of the profession, civil, mechanical, and electrical, is equally concerned, and they should unite to overcome the obstacles by which they are handicapped; some of these difficulties being stated as follows:—

Overcrowding of the Profession.—This is due to the constant influx of men lacking sufficient scientific training, who have no great love for their work, but are apparently tempted by the ease with which a footing may be gained.

Misuse of the term Engineer.—This word is seen tacked on to almost every industry, and unfortunately it has gone on for so long that the only remedy will be to find a new word with which to designate members of the profession, unless means can be devised for restraining the use of the old title by unauthorised persons.

Multiplication of Societies.—The tendency of the present day is all towards an increase in the number of engineering societies, but, although such associations do good work, it is a mistaken policy to allow members to use the initials of societies other than the three principal institutions as a distinguishing mark.

Advertisement.—Engineering businesses cannot refrain from advertising, but no professional man should be allowed to do so, whether he be a consulting engineer or the manager of a business concern.

General.—In the absence of any legal status it is difficult to establish a scale of fees, and so to prevent cutting of prices. Consultants are also unfairly hampered by manufacturers who give advice, naturally biassed, on engineering matters, and prepare estimates and drawings free of charge, in order to secure work for the firms with which they are connected.

Having sketched the chief hindrances to the advancement of the profession, the author proceeds to outline a scheme for their removal. In the first place, he advocates the election of a 'Central Organising Body,' from members of the three most important Institutions, those of the Civil, Mechanical and Electrical Engineers respectively. Such a body should be equally representative of each Institution, and for this purpose each should be placed on the same footing, since as far as the scientific training of their members is concerned there is no material difference. The 'Central Body,' when complete, should endeavour to obtain recognition as a legalised corporation by Act of Parliament, and should have supreme organising and judicial powers in all matters relating to the profession. They should also have power to appoint committees to deal with special subjects. The points to which they should first apply their energies should be (i.) Registration, (ii.) Education, (iii.) Minimum fees, (iv.) Organising funds to aid invention and research. An effort should then be made to formulate schemes for the establishment of an Information Bureau for Engineers and the institution of a Benevolent Fund.

In conclusion, it is remarked that every effort should be made to arouse interest in this important question of reform, because delay will only tend to make the problem more complex."

The author of this essay has been awarded the Status Prize for 1909, offered by the Society of Engineers for the best paper submitted on the above subject. It should be noted that this prize is open for competition during the next four years, full particulars being obtainable from the Secretary.

Competition News.

WARRINGTON ELEMENTARY SCHOOL.

The Competitions Committee of the Royal Institute of British Architects are corresponding with the Warrington authorities with a view to the amendment of the conditions in this competition.

NEW CROSS GATE BRANCH LIBRARY.

At the meeting of Deptford Borough Council on October 5 the Public Libraries Committee reported having received a communication from Mr. J. S. Gibson, who was appointed to adjudicate upon the designs submitted in the competition for the New Cross Gate Library. He recommended the premiums be awarded as follows:—First, No. 20 design (50 guineas, to merge); second (25 guineas), No. 21 design; third (10 guineas), No. 27 design. He expressed the opinion that there would be no difficulty in carrying out design No. 20 for the stipulated amount of 4,500*l*., and he recommended the

Digitized by Google

Council to employ the author as architect for the buildings. Resolutions were passed that the award of Mr. Gibson be adopted, that the library be erected in accordance with the first premiated design, and that the author of such design be employed as the architect for the building at a commission of 5 per cent. on the outlay in respect of the work actually carried out under his supervision. The Mayor then opened the sealed envelopes containing the names of the authors of the designs, and the results were announced as follows:—(1) Messrs. Castle & Warren, Talbot House, Arundel-street; (2) Messrs. W. F. Young & H. W. Horsley, Norfolk-street, Strand, W.C.; (3) Messrs. Wills & Anderson, Bloomsbury-square, W.C.

FOREST HALL AND WHITLEY SOUTH COUNCIL SCHOOLS.

At their meeting on the 30th ult. the Education Committee for Northumberland considered a report from Mr. W. H. Knowles, architect, who had been appointed assessor to advise the Committee on the competitive plans for the new Council schools at Forest Hall and Whitley South. It was found on opening the sealed envelopes that the successful architects were:—Messrs. Hope & Tasker, Trinity-buildings, New Bridge-street, Newcastle, for Forest Hall, and Messrs. Marshall & Tweedy, 17, Eldon-square, Newcastle, for Whitley South. There were thirty-six designs submitted for the former, and thirty-eight designs for the latter.

NATIONAL MUSEUM, CARDIFF.

At a meeting of the Building Committee of the Welsh National Museum, held at the City Hall, Cardiff, on October 2, Mr. T. Harry Riches presiding, it was stated that copies of the conditions and instructions to competing architects were now in the hands of 138 competitors. The Committee met in private, and the time was taken up in considering 150 questions submitted by the various competitors regarding details of the conditions. Replies were drafted, and will be forwarded to the competitors as soon as possible.

NEW COUNCIL SCHOOL, WALTON-ON-NAZE.

In the recent competition for designs for this school the plans submitted by Messrs. Tomkins, Homer, & Ley, of Frinton-on-Sea, and 54 and 55, Bishopsgate-street Without, E.C., have been awarded first place and selected for adoption by the Essex Education Committee. The building will consist of a mixed school to accommodate 352 scholars, with a cookery centre attached.

ARCHITECTURAL DRAWING COMPETITION.

The London County Council announces its intention to award three prizes, one of 10*l.* and two of 5*l.* each, for drawings of buildings, churches, or artistic objects in museums. Drawings intended for the competition must be submitted by November 20. The competition is open to candidates who fulfil the residence qualification, or are students at art schools or technical institutes maintained or aided by the Council. The regulations as to drawings are:—They may be in pencil, ink, or colour, and the subjects may be selected from one or more classes of work, such as architecture, goldsmiths' work, furniture, stained glass, pottery, ironwork, fine textiles, embroidery, etc. They must have been executed since Easter, and must not have been utilised for the purpose of any other competition. They should be either of imperial size, or mounted on sheets of that size two or more together. They should represent objects as faithfully and carefully as possible. Students are recommended to select objects in the classes of work in which they are most interested, and from Gothic or Eastern examples as much as or more than from those of Renaissance style.

Trade Catalogues.

MESSRS. A. OAKDEN & SONS have sent us their new catalogue of fittings for the use of cabinet-makers, upholsterers, builders, shopfitters, and others. It is a well-produced book of 170 pages, and is divided into sections on furnishing brass foundry, general brass foundry, locks and keys, general ironmongery, and tools. The first section contains illustrations of wood and metal curtain rods and fittings, stair rods and treads, blind rollers, curtain and picture hooks, etc. Shop-window fittings, cabinet handles, drawer pulls, hat-and-coat rails and hooks, sash fittings, casement stays, and many other goods are shown in the general brass foundry section. The lock and key section includes examples of locks in great variety, thumb latches, etc., and the other sections are also fully illustrated. It is a very useful catalogue.

Messrs. G. A. Harvey & Co. have sent us a copy of their new catalogue, dealing with their manufactures in zinc, sheet iron and steel, copper, and other metals. It is a well-bound book of 1,020 pages, and its comprehensive character is shown by the fact that the index occupies seventy-two columns and contains more than 3,000 references. Upwards of 500 illustrations of sheet-metal chimney-tops are given in the first section, and if among all these a cure for a smoky chimney cannot be found, it may be inferred that that particular chimney smokes in consequence of some defect which no cowl can rectify. Another section of the book deals with zinc roofing, weather-vanes, and architectural embellishments of various kinds. Examples of flat roofs, domes, turrets, straight and curved verandah roofs, zinc and copper dormers, finials, weather-vanes, etc., are given in great variety, the constructional details of the roofing being clearly shown. Many examples of zinc eaves gutters and rainwater pipes are included, and in this connexion attention may be drawn to Harvey's patent gutter-bracket, which is made in two pieces so that the gutter can be taken down and refixed without disturbing any other part of the building. The next section deals with flower-boxes for windows, fern-cases, meat-safes, zinc and steel casements and sashes, skylights for corrugated-iron and slated roofs, hopper windows, zinc snow-guards, etc. The section on ventilation contains numerous illustrations of inlet and outlet ventilators, and in a later section dealing with the ventilation of factories and workshops, the application of mechanical systems of ventilation to buildings of various kinds is shown. An intermediate section contains examples of ornamental zinc mouldings and friezes, stencils, zinc figures, tubing, glazing bars, ridging, etc. Galvanised iron and steel goods occupy about seventy pages, and include corn-bins, dust-bins, flour-bins, drinking troughs, mangers, buckets and baskets, coal bunkers, and other fittings. Furnace-pans and portable coppers are also shown. Lockers made of sheet-steel are followed by illustrations of poultry houses and runs, rabbit hutches, dovecots, kennels, feeding troughs, portable corrugated-iron buildings, street orderly bins, and farmyard fittings. The section on tanks, cisterns, and cylinders is very useful, a special feature being that in many cases cisterns of a given capacity can be obtained from stock in four different shapes. The cylinders are of galvanised iron or steel, or of copper. Special corrugated cisterns for rainwater are shown, and other fittings too numerous to mention. We may add that among the sanitary fittings are galvanised steel sinks and baths of plate zinc, tinned steel, and tinned copper. Water-taps of many different kinds are shown, including some fitted with a hinged lever and padlock. The section on perforated zinc and other metals contains illustrations of more than 1,500 patterns. We have not by any means exhausted the contents of this important catalogue, but we have said enough to show that it is a very useful work of reference for all interested in the metal trades.

BOOKS RECEIVED.

THE ANNUAL OF THE BRITISH SCHOOL AT ATHENS. No. XIV.: Session 1907-1908. Pp. 463 and Plates. (Macmillan & Co. 25s.)

THE ROMANCE OF SYMBOLISM. By Sidney Heath. Pp. 224. (Francis Griffiths. 7s. 6d.)

SKETCHES AND STUDIES. By David Bles. 48 Plates. (Alexander Moring, Ltd. 2s. 6d.)

CONSTRUCTION, EQUIPMENT, AND MANAGEMENT OF A GENERAL HOSPITAL. By Donald J. Mackintosh, M.B. Pp. 145 and Plans. (Edinburgh; W. Hodge & Co. 10s. 6d.)

WINDOWS: A BOOK ABOUT STAINED AND PAINTED GLASS. By Lewis F. Day. Third Edition. Pp. 403. (B. T. Batsford. 21s.)

ELEMENTARY PRINCIPLES OF GRAPHIC STATICS. By Edward Hardy. Pp. 200. (B. T. Batsford. 3s.)

THE COLOUR OF ROME, HISTORIC, PERSONAL, AND LOCAL. By Olave Muriel Potter. With illustrations by Yoskio Markino, an introduction by Douglas Sladen, and an essay by the artist. (London: Chatto & Windus. Pp. 261.)

ENGLISH FURNITURE AND DECORATION, 1680 1800. By G. M. Ellwood. (London: B. T. Batsford. 25s. net.)

THE "MECHANICAL WORLD" POCKET DIARY AND YEAR BOOK FOR 1910. (Manchester: Emmott & Co., Ltd. 6d. net.)

NEW POST-OFFICE PREMISES, BANCHORY.—The Banchory Town Council have passed plans for a building in High-street to give accommodation for a new post-office. The building has been designed and is to be carried out under the supervision of Messrs. Sutherland & George, architects, Aberdeen, and the building operations are expected to be commenced shortly.

Correspondence.

THE NATIONAL INSTITUTION OF APPRENTICESHIP.

SIR,—Will you allow me through your columns to call attention to the valuable work which is being done by the National Institution of Apprenticeship, 39, York-place, Baker-street, in apprenticing boys and girls to trades in which skill is required, and to appeal to the public for contributions to enable the Council to continue to carry on and extend that important National work? Its value cannot be easily over-estimated, especially as it tends to diminish the number of the unemployed, who are nearly all unskilled. The Institution is philanthropic and unsectarian, and is under the patronage of Her Royal Highness the Princess Christian and His Grace the Duke of Devonshire, and is administered by a Council and several committees.

The Council's report for 1908 shows that the Institution has great experience, and exercises a careful discrimination in the selection of trades and in the general management. The effective manner in which the arrangements for apprenticeships are conducted, and the excellent results achieved, were demonstrated at the largely-attended meeting recently held at the Mansion House, at which I presided, when about 500 apprentices under the charge of the Institution were present, and 172 of them received prizes and certificates, which were distributed by Lord Avebury.

The Institution has indentured over 630 apprentices to good masters carrying on skilled trades, and those apprenticeships are supervised by the Council.

The number of boys and girls applying to be apprenticed is continually increasing, and now exceeds sixty per week, and at the present time a large number of boys who have served satisfactorily their probation are compelled to wait until the money is forthcoming to pay the premiums. For such purpose it is estimated that a sum of £13,000 will be required during the next twelve months, and the audited accounts show that the funds are now practically exhausted.

I shall be pleased to receive contributions on behalf of this excellent Institution, or they may be sent to the Treasurer, the Right Hon. Lord Avebury, at 17, Lombard-street, London, E.C., or to the Hon. Sec., Mr. J. S. Ballin, 5, Clarence-terrace, Regent's Park, N.W. G. WYATT TRUSCOTT, Lord Mayor.

Mansion House, September 30.

*** In connexion with the Lord Mayor's letter, we extract the following statement of the objects of the Institution from their Council's Report for 1908:—

"The Institution is philanthropic and supported by voluntary contributions; it brings about the apprenticeship of boys and girls in a large variety of trades and handicrafts in which skill is required and in which good wages may be earned, the object being to effect apprenticeship only on such conditions as will benefit to the utmost the boys and girls in their future careers.

Members of the staff are regularly employed in calling on masters in such trades with a view of inducing them to take apprentices. Every effort is made in negotiating terms to arrange a suitable length of apprenticeship, the payment of good wages, and a premium reduced to the lowest figure, or waived altogether. Care is taken to apprentice only to masters who (1) can carry out their contracts to teach, (2) have sanitary workshops, and (3) do not employ an undue proportion of apprentices to skilled workmen.

The only qualifications required of applicants are respectability and fitness for apprenticeship. No question of creed is raised by the Institution. . . . The intended apprentice is required to serve the proposed master on probation one month, and in some cases longer, after which, if all the parties concerned have expressed their satisfaction with the arrangements, the indentures are prepared and signed.

Special forms of indentures have been drawn up, providing as far as possible for any contingencies that might arise, and empowering the Institution to supervise the apprenticeship

Digitized by Google

so as to ensure, as far as practicable, that the apprentice is properly taught the trade and does his or her duty to the master."

THE BUDGET AND PRIVATE ENCLOSED GARDENS.

SIR,—Though apparently the Government has withdrawn its proposals to tax enclosed private gardens, it still seems advisable that the attention of the public should be drawn to the dangers it has so narrowly escaped from such ill-considered propaganda.

The Budget proposed to doubly tax private enclosed grounds attached to squares, gardens, crescents, and similar collections of houses. It claimed the right to do so because these sanitary, health-giving local lungs are withheld from the greedy speculations of the speculative jerry builder, and that these quiet, peaceful, picturesque areas are not available to the public.

Unfortunately, till quite recently town-planning was neglected by our short-sighted municipal authorities. Indeed, throughout the United Kingdom the intelligent enterprise of far-seeing private individuals alone prevented local overcrowding and overbuilding by the costly creation—at their own expense—of numerous private enclosed gardens, managed and supported by local residents paying enhanced rates and taxes because of the privilege of having sole access to these grounds.

Hence, to again tax these houses a second time by taxing their private enclosed gardens would be unjustifiable. It comes to this, that it has been suggested to put an additional tax on picturesque town-planning, tree-planning, hedges, grass, lawns, shrubs and flowers because these embellishments have been provided by private enterprise.

If the taxation of private garden enclosures were granted, then would it not follow that the taxation of houses bordering upon lakes, rivers, and the sea would also be retaxed because of their adjoining aquatic air spaces? Such taxes on air spaces would be even more injurious to public health than the old tax on windows, which were guilty of admitting sunlight, warmth, and air.

To avoid noise and vibrations created by tubes, trams, trains, traffic, and motor-cars, I have long resided in a secluded, sheltered square in Brighton, which, in addition to extensive elegant enclosed private gardens and sea-terraces sloping down to the beach below, has a unique financial history that has hitherto escaped publicity.

These Sussex-square-gardens, constituting the Kemp Town Enclosures, are a model miniature marine garden city, being Brighton's chiefest adornment.

Early in the XIXth century Thomas Read Kemp (1781 to 1844) converted his Black Rock Farm and adjacent property into a magnificent estate named, after him, Kemp Town, the attraction and adornment of which are the enclosed picturesque Sussex-square-gardens, covering some 10 acres, with their sea-terraces and grass-covered slopes extending to upwards of half a mile along the beach.

The park was planned by Sir Joseph Paxton, including beneath the main road or sea front a tunnel connecting the gardens with the marine terraces below. Under the highway on each side of the tunnel is a cleverly-concealed cottage (like a cave dwelling), its roof being underneath the public footpath above.

The top of the square is nearly 120 ft. above the sea's level.

Sheltered from northerly winds by an ivy-clad wall some 35 ft. high, the upper and lower marine terraces contain a dozen capacious arches providing excellent shelter and summer-houses.

This domain is only accessible to the residents in the 103 houses constituting this enclosed estate, the quiet and privacy of which pleased the King in 1908 when staying at the Duke of Fife's residence at the corner of Sussex-square.

By 1837 Kemp's magnificent town planning punished him with a loss exceeding 500,000*l.* He died in comparative poverty in Paris in 1844.

For nearly a century these enclosures have been and are maintained by subscriptions from 103 owners and occupiers of houses on the estate. Their residents have paid extra local rates and taxes for access to the grounds, which yield neither income nor financial profit.

Of course, this site can never be developed for building purposes, and to treat and tax it as land withheld from the market with a view to increase rent is absurd.

Indeed, already upwards of 40,000*l.* for wages and materials have been distributed for the upkeep of this park by the owners and occupiers of houses upon this estate, where empty untenanted houses also pay annual subscriptions for the maintenance of the gardens.

J. LAURENCE-HAMILTON, M.R.C.S.
Brighton.

THE EDISON CONCRETE HOUSE.

SIR,—In your issue of the 25th ult. a short article appears upon Mr. Edison's promised new departure in concrete construction, and in which it is noticed the general scepticism of the Britisher prevails. Perhaps, indeed, such doubts as have been so generally expressed on the success of Mr. Edison's scheme are warranted, in the absence of a practical example of his methods, but in the case of those who have had an opportunity of closely investigating Mr. Edison's claims and results, it would appear that his idea of concrete house construction is not so much in the air as one is led to suppose from the criticisms which the scheme has brought forth from many quarters.

The writer recently had a lengthy conversation with Mr. Edison at his laboratories in Orange, New Jersey, and he was then good enough to explain and exhibit the results of his progress in concrete castings from sections of moulds which will be employed in the erection of dwelling-houses by casting the whole fabric in a single operation. The results already obtained are undoubtedly surprisingly successful.

The obvious difficulties in satisfactorily carrying out Mr. Edison's idea are extremely numerous to the average cement user, and those not in possession of the knowledge of Mr. Edison's capabilities and experience in the work which he has set out to do; but there is no doubt that from the results already obtained and the further information which was kindly given to the writer by Mr. Edison his claims in inventing a special variety of concrete capable of withstanding the influence of gravity, and thereby of maintaining an almost perfectly uniform composition throughout the construction, have already been justified in practice. In other words, the properties of Edison's concrete are shown by him to be all that is claimed, and satisfactory proofs innumerable are freely given by Mr. Edison to those who have the opportunity and felicity of personally meeting one of the greatest living inventors of the age.

It will be seen, therefore, the fears expressed that failure would result through the separation of the cement from the aggregate are not well founded, and if the financial and other results are as satisfactory and undoubted as the scientific part of Mr. Edison's scheme for concrete house construction, the general effect of his idea will be as instructive and unique as are the personal associations of meeting so brilliant an inventor.

Mr. Edison proposes at once to erect his first house at Orange, N.J., with the moulds which have already been completed, and beyond some minor details all arrangements are complete for the concrete construction work to proceed.

THE SAXON PORTLAND CEMENT COMPANY, LTD.
A. C. DAVIS,
Managing Director.

*** In the article mentioned we expressed our perfect readiness to be convinced as to the practical validity of the claims made on behalf of the new variety of concrete invented by Mr. Edison. Of course, we fully accept the statements made by Mr. Davis on this point, and after the moulding of the proposed structure at Orange, we hope to have exact data as to the behaviour of the concrete in actual construction.—ED.

INSECTS IN TIMBER ROOF.

SIR,—In referring to your issue of September 18, 1909, I noticed a letter under this heading from a correspondent. A short time ago I was consulted regarding some timber work which was infested with a small ant. I advised the use of "carbolineum." If the timber roof is painted or varnished, this must be removed so as to allow the hot "carbolineum" to penetrate into the timber, and when dry can be varnished. It gives the timber a pleasant walnut colour. All timber treated with "carbolineum" is protected against vermin and insects. Your correspondent will find this a certain remedy, as I have in several cases found it to be. If he would like further particulars I shall be pleased to supply him with same. I am surprised that the use of "carbolineum" is so little known in this country. In Germany it has been known and largely used for over fifty years as a wood preservative, also against dry rot, fungi, vermin, and insects, etc.

"Carbolineum" I have found to be better and cheaper than "creosot," and is now extensively used for all waterwork, railway sleepers, wood-paving, etc., with the most satisfactory results.

HENRY H. B. LANG.

LONDON AND PROVINCIAL BUILDERS' INFORMATION BUREAU.

ON lines somewhat similar to those in existence in America and on the Continent an Information Bureau for builders has now been established in this country. The rapid progress that has been made during recent years in building matters calls for some such central organisation where inquiries upon all matters connected with the building trade can be concentrated.

Few businesses present such varying conditions and ramifications as that of a builder, rendering him liable to loss on many items of his transactions, which would be obviated by greater facilities for obtaining information.

Clearly no individual builder can comprehensively collect and tabulate the mass of builder's information, keep it thoroughly up to date and immediately available for reference, which would in itself require the maintenance of a large and experienced staff. To have access, however, to such a living centre for information must be acceptable to every builder, even though his opportunities are exceptional, and a large and influential membership to the Bureau is, therefore, anticipated.

Times without number a builder is called upon to supply something that he has never heard of, or that has been wrongly named or described, or perhaps does not even exist, and then a kind of campaign of inquiries is set on foot. The existence of the Bureau will be fully appreciated on these occasions. Some new device or invention comes into existence almost daily, as will be seen from the files at the Patent Office, and many of these are substitutes, and excellent ones too, for some of the more expensive materials in daily use. These are undoubtedly freely advertised, but not as they should be through the trade press, but by a method that defeats itself, viz., flooding the country with circulars and pamphlets, many of which do not reach the proper quarter.

Many builders are left in entire ignorance, therefore, through no fault of their own, of much valuable information which membership of the Bureau would obviate.

To sum up the advantages of membership, the Bureau affords the following facilities:—

(*a*) For obtaining the name and address of the manufacturer of any speciality of material (with cost if required).

(*b*) The names of the firms who are able to supply goods to a certain detailed description or dimensions, or at a certain cost or thereabouts.

(*c*) Ditto who have the desired article in stock and can deliver immediately.

(*d*) For obtaining particulars of new or patent materials which may be economical substitutes for existing goods, together with the experience of those who have used them.

(*e*) For obtaining a number of competitive estimates for sub-contractors' work or otherwise.

(*f*) Respecting expert advice on special building methods and questions of heating and ventilation, sanitation, sewage disposal, lighting installation, fireproof construction, reinforced concrete, etc.

(*g*) Opportunities for testing materials at reduced rates.

(*h*) Information as to local materials, carmen, masons, slaters, tilers, iron founders, plumbers, builders' merchants, etc.

Digitized by Google

(*k*) Expert advice on matter relating to local authorities, by-laws, light and air, contracts, party walls, etc., and the many technical difficulties that arise out of a builder's business.

The services of the Bureau should bring about a welcome saving in a builder's office expenditure, principally in postage and duplication of correspondence amongst manufacturers, for one inquiry to the Bureau places a number of manufacturers or merchants who can fulfil the requirements in touch with the builder applying for information.

Further particulars as to annual subscription and detailed prospectus can be had on application to the Secretary, the London and Provincial Builders' Information Bureau, Technical-buildings, 24 and 25, Hart-street, Bloomsbury.

LONDON AND DISTRICT BOROUGH COUNCILS.

Bermondsey.—The General Purposes Committee have received particulars from twenty-four Metropolitan Boroughs of their charges for use of tools and plant in connexion with private work undertaken by the Councils. Fourteen of the boroughs charged 10 per cent., and the remainder as follows:—Bermondsey, 15 per cent.; Fulham, 15 per cent.; Camberwell, 9 per cent.; Woolwich, 8 per cent; Lambeth, 7 per cent.; Deptford, 6 per cent.; Battersea, 5 per cent.; Finsbury, 5 per cent.; Hackney, 5 per cent.; Stoke Newington, 5 per cent. Four Borough Councils do not do this class of work. Alice-street is to be asphalted at an estimated cost of 440*l.*, while the Railway-approach is to be repaved with Newry pitchings at an estimated cost of 200*l.* The following plans have been passed:—Messrs. H. J. Williams, Ltd., builders, 11-17, Bermondsey-street, S.E., new factory, Major-road; Messrs. G. Parker & Sons, builders, 124, Sumner-road, Peckham, S.E., new factory, Wright's-buildings; Messrs. J. E. Whiter & Co., builders, 13, Railway-approach, London Bridge, S.E., additions, Bacon's Schools, Grange-road.

Hendon.—The Rural District Council have passed plans for six semi-detached villas for Messrs. Smallwood & Cumber, Pinner-road, Pinner.

Hornsey.—The Council have approved the following plans:—Alterations and additions to High School, Albany-road, Stroud Green, for Mr. C. R. Baker King, Westminster; two blocks of maisonettes, Rathcoole-gardens, for Mr. J. C. Hill; hall at St. Martin's School, Page's-lane, Muswell Hill, for Messrs. George Smith & Son; three houses in View-road, Highgate, for Mr. E. H. Slatford; motor garage, 6, Grand-avenue, Muswell Hill, for Mr. T. B. Lever, Whitehall Park; six houses, Cranley-gardens, Crouch End, for Mr. J. W. Pain, Walthamstow; four houses in Montenotte-road, Crouch End, for Mr. John Farrer. Plans for the laying-out of the Elm House and the Norman House estates, Tottenham-lane and Middle-lane, Hornsey, submitted by Messrs. Francis Chambers & Son, 11A, College-hill, Cannon-street, E.C., will be approved after an agreement containing certain stipulations has been entered into by the owners. The following plans have been lodged:—Pavilion, skating-rink, and six lock-up shops in Stroud Green-road, for the Finsbury Park Pavilion and Rink Company, 82, Victoria-street, Westminster; conversion of flats at 7, Priory-road, Hornsey, for Mr. C. W. Boswell, High-street; motor-house, Wesleyan Methodist Church, Jackson's-lane, Highgate, for Mr. J. H. Hibbert. The Education Committee has accepted the tender of Mr. J. Stewart, of Tottenham, at 20,553*l.*, for the erection of a school at Crowland-road.

Hounslow.—Tenders are to be invited for making up several roads. Plans have been passed as follows:—Swift Polish Company, boiler-house, at Hospital-road; Mr. A. Emmett, three houses, Albert-road; Messrs. Hodgkinson & Son, vicarage, at Bulstrode-road.

Islington.—A sewer in Quadrant-road is to be reconstructed, at a cost of 255*l.* Tenders are being invited for the painting of the Town Hall.

Lewisham.—Plans by the Borough Surveyor for paving and forming Chalcroft-road, at an estimated cost of 991*l.*, have been passed. Plans have been passed as follows:—Mr. J. Laird, eight houses, Blythe-vale; Mr. A. J. Roddis, eleven houses, Manwood-road; Mr. James Watt, six houses, Bromley-road; Mr. T. A. Boughton, six houses, Thornsbeach-road; Messrs. E. A. Roome & Co., rebuilding the Prince Arthur beerhouse, High-road, Lee.

Marylebone.—Up to September 25 1,760 of the 1,964 street gas-lamps the Council resolved to light with electricity had been converted. As a considerable saving in expenditure will be effected by the extension of the system, 165 more lamps are to be similarly dealt with, and others are to be taken over by the Electric Supply Committee as more extensions of mains are carried out. The site of Usher's Wiltshire Brewery has been acquired for 1,500*l.* for the purpose of a new depôt.

St. Pancras.—Crosthwaite firebars are to be installed at King-street and Prince of Wales's-road Baths, as they have proved a success at Whitfield-street Baths. On behalf of the Hampstead General Hospital, Kentish Town-road, plans have been lodged for the erection of a new out-patients' department in Bayham-street.

Stepney.—The Borough Council has passed plans lodged by Messrs. Pearson & Milburn for the re-erection of buildings in Glasshouse-fields, Ratcliffe; also plans by Mr. J. J. Johnson, for a warehouse in Ratcliffe-square.

Sutton (Surrey).—Plans have been approved by the Council for Mr. T. Wall for additions to the Adult School, Benhill-avenue.

Wandsworth. — Part of Headworth-road, Springfield, is to be paved by Messrs. S. Lane & Co., the contract price being 323*l.* The following plans have been passed:—Mr. F. H. Whitaker, three houses, Copley-park, Streatham; Messrs. Hayes & Co., four houses, Hill-down-road, Streatham; Messrs. J. W. Falkner & Son, additions to Baptist chapel, Ramsden-road, Balham.

Watford.—The Rural District Council have approved plans for a new sanatorium at Letchmore Heath, for the Governors of Aldenham Grammar School; also plans for two villas near Glen Chess, Chorleywood, for the Glen Estate Company.

Woolwich.—Messrs. J. R. White & Co. are to supply Norwegian kerb granite for Sherard-road, Eltham, the contract price being 386*l.* The following plans have been passed:—For Mr. A. C. Corbett, per Mr. J. J. Bassett, 121, Earlshall-road, Eltham, four houses, Glenlyon-road, and six houses, Dumbreck-road, Eltham; for Mr. A. C. Corbett, per Mr. Jas. Watt, Sangley Estate Office, Catford, S.E., six shops with dwelling accommodation, Westmount-road, Eltham; for Mr. H. W. Eastwood, per Mr. W. Harris, steam joinery works, North Woolwich, four houses, Fernhill-street, North Woolwich; for Messrs. J. James & Co., Ltd., per Mr. J. Randall Vinning, Roll's-chambers, 89, Chancery-lane, W.C., shirt factory, Wood-street, Woolwich; for the vicar and churchwardens, Holy Trinity Church, Eltham, per Messrs. J. Dorey & Co., Ltd., Brentford, Middlesex, alterations and additions, Holy Trinity Church.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDEEN.—Church, Great Western-road; Mr. J. Milne, architect, Aberdeen.

Abertysswg.—Cottage hospital (2,000*l.*); Mr. T. Mathew, architect, Abertysswg.

Annfield Plain.—Warehouses, Clowes-terrace, for Mr. F. W. Pigford. Church; Mr. A. T. Kell, architect, Front-street, Chester-le-Street.

Arbroath (N.B.).—Rink, Russell-street, for the Arbroath Rink Company, Ltd.

Ashburton.—School; Mr. P. Morris, architect, 1, Richmond-road, Exeter.

Ashington.—Rink; Messrs. White & Stephenson, architects, 59, Grey-street, Newcastle-on-Tyne.

Aylesbury.—Additions, Church of England school; Mr. Reilly, architect, Aylesbury.

Ayr.—Block of houses, Monument-road; Messrs. J. & D. Meikle, Ayr.

Berkeley (Glos.).—School (3,300*l.*); Mr. C. Griffiths, builder, Lye.

Birmingham.—Fire-station; Mr. F. Harrison, architect, 109, Colmore-row, Birmingham. Police-station; Mr. T. Smith, architect, Mosley-road, Birmingham.

Bishop Auckland.—Twenty-five houses; Mr. C. Johnson, architect, Victoria-street, Bishop Auckland.

Blaydon.—Mortuary; the Surveyor.

Bristol.—Club premises; Mr. H. Smith, architect, 23, Clare-street, Bristol. Extensions to Clifton College (14,000*l.*): Messrs. Cowlin & Son, builders, Stratton-street, Bristol. Warehouse, Redcliffe-street, for the Bristol Distillery Company, Ltd., Bristol.

Dudley.—The Town Council has passed the following plans:—Additions to schools, Cinderbank and Nelson-street, for the Corporation. Three houses, Rollason-road; Messrs. Jones Brothers.

Dunfermline.—Block of tenement houses, Woodmill-street; Mr. J. Sutherland, architect, Dunfermline. Printing works; Messrs. Romans & Son, architects, New-row, Dunfermline.

Eastbourne.—Alterations to station and erection of new offices for the London, Brighton, and South Coast Railway Company, London. Extension to destructor works, also proposed extension of depôt; Mr. A. Prescott, Surveyor, Town Council. The following plans have been passed:—Three shops and houses, Ocklynge-road; Mr. A. Chandler, architect. Addition to Granville House, Granville-road, for Mrs de le Mothe; Mr. B. Stevens, builder. Addition to "Berrow," Carew-road, for Miss Gardiner; Mr. W. Hay Murray, architect. Addition to "Urmston," Blackwater-road, for Captain Morris; Messrs. M. Martin & Sons, builders. Warehouse, Terminus-road; Messrs. Mitchell & Ford, architects; Mr. M. Hookham, builder. Garage, etc., Burlington-mews; Messrs. Killick & Davies, architects. Stables, stores, and workshops, Bradford-street; Mr. C. R. Wilson, builder.

Eccles.—The Town Council has passed the following plans:—Motor garage, Victoria-road, Ellesmere Park, Mr. A. K. Goodwin; nine houses, Reginald-street, Peel Green, Mr. A. J. Eggington; five houses and two houses and shops, Station-road, Patrecroft, Mr. Arthur Lockwood.

Egham.—Isolation hospital (1,800*l.*): Surveyor to the Urban District Council, Egham.

Kearsley.—Clifton School; Mr. J. Royley, builder, Kearsley.

Keswick.—Hotel; Mr. D. Pape, architect, Keswick.

Kibblesworth. — Wesleyan chapel; the Trustees.

Kidderminster.—Motor garage; Messrs. L. Wyer & Co., Kidderminster.

Leith (N.B.).—Additions to British Oil and Cake Mills, Salamander-street, Leith, N.B.

Mellor.—Wesleyan chapel; Chairman, New Mills Circuit Committee.

Mirfield.—Co-operative premises; Secretary, Dark-lane, Mirfield.

Newburn.—Public offices; Mr. E. Cratney, architect, Wallsend-on-Tyne.

Northampton.—The following plans have been passed by the Town Council:—Four houses, Lutterworth-road, Mr. A. Wilford; six houses, Sharman-road, and two houses, Park-avenue and Ardington-road, Mr. C. F. Sharman; three houses, Angel-lane, Mrs. Fitzhugh; seven houses, Knight's-lane, Mr. W. S. Brown; additions to seven houses, Market-street, Mr. T. Wilson.

Nottingham.—Swimming and washing baths, Meadows Cricket Ground (9,000*l.*); Mr. F. B. Lewis, City Architect, Nottingham City Council. Church; the Vicar of Carrington Church, Nottingham. Extensions to Carrington School (6,450*l.*); Mr. W. J. Abel, Secretary, Education Committee, Nottingham.

Pontypool.—Additions to school; Mr. J. Bain, architect, Shire Hall, Newport.

Prestwich. — School (5,000*l.*), for the Governors of the Roman Catholic Training College, Sedgley-park.

Romford.—School, Heath-park; Mr. F. Whitmore, architect, Duke-street, Chelmsford.

St. Anne's.—School (3,500*l.*); Messrs. F. T. Salmon & Sons, builders, Cudworth.

Salford.—The following plans have been passed by the Town Council:—Building, Prospect-street, for the Ackers Trustees; alterations to Conservative Club, Robert Hall-street, Salford; operating theatre, Royal Hospital, Chapel-street; alterations to Factory Inn, and adjoining premises, Ordsall-lane.

Sandsfield.—School; Mr. D. P. Jones, architect, Charles-street, Cardiff.

Sharnbrook.—Vicarage (1,600*l.*); the Vicar, Sharnbrook.

Southend.—Rink, Warrior-square, for the Rinkeries, Ltd., Southend-on-Sea.

South Moor.—Catholic school; Father Dix, Stanley.

Southport. — Pumping-station (17,000*l.*); Messrs. Parker & Sharp, contractors, York.

South Shields.—Parish hall, Murton Colliery; Mr. J. H. Morton, architect, King-street, South Shields.

Springwell. — Additions to co-operative stores; Secretary, Springfield Co-operative Society.

Stamshaw.—Baths; Mr. P. Murch, architect, Town Hall, Portsmouth.

Stoke-on-Trent.—The Town Council has passed the following plans:—Semi-detached houses, Oakhill Hall Estate, Mr. W. Ball; additions to Temple House, Basford, Mr. W. Cowishaw; alterations and additions to premises, Victoria-street and Shelton New-road, Mr. E. J. Walley.

Warrington.—The Town Council has passed the following plans:—Extension to works off Ellesmere-street, for Messrs. T. Locker & Co., Ltd.; soap-house, Factory-lane, for Messrs. J. Crossfield & Son, Ltd.

Westbury.—Wesleyan church; the Trustees.

Westenhope.—School; Mr. C. J. Forrest, architect, Moot Hall, Newcastle.

Whitby.—Secondary school; Messrs. Thompson & Bristow, architects, Westminster-chambers, S.W.

Digitized by Google

Wolverhampton. — Salvation Army halls; Officer, 32, Dartmouth-street, Wolverhampton. Additions to school of art; Mr. Lindsey Jones, builder, Darlington-street, Wolverhampton.

York.—Laboratory at Archbishop Holgate's Grammar School; the Governors, York.

LOWER THAMES VALLEY DISTRICT SURVEYORS' ASSOCIATION.

On the 2nd inst. a visit to Chiswick was made by this Association under the presidency of Mr. J. H. Brierley. The members met at the Town Hall, and after an inspection visited the fire-station, underground convenience, tarred slag paving in Duke's-avenue, destructor plant, and sewage works. The members were shown over the new extensions to the sewage work by the resident engineer, Mr. J. H. Abbott. Tea was partaken of at the sewage disposal works, after which the party adjourned to Radnor House, Twickenham, for the annual meeting, when the following officers for the ensuing year were elected:—Mr. A. Gladwell (Slough), President; Mr. J. Stevenson (Molesey), Vice-President; Mr. Edward Willis (Chiswick), Hon. Secretary and Treasurer; Mr. R. H. Jeffes (Malden) and Mr. J. W. Croxford (Brentford), Auditors.

The By-laws Sub-Committee was reappointed, with power to add to its number.

General Building News.

CHURCH RESTORATION, DEDHAM.

Some restoration work has been carried out in the church of Dedham, under the advice and supervision of Mr. T. G. Jackson, R.A. The church is a familiar feature in many of Constable's pictures. The restoration of the chancel included the reopening of four windows which have been closed for 100 years and more. These windows have been filled with stained glass, designed and executed by Mr. Walter Tower, the successor of the late Mr. C. E. Kempe.

PRIMITIVE METHODIST CHURCH, GORLESTON.

A Primitive Methodist church is in course of erection in Nile-road, Gorleston. The dimensions of the new building will be 54 ft. long by 31 ft. wide, and the body of the church will have seating accommodation for 234 persons, and provision has also been made for a large rostrum. A vestry and classroom have also been provided. Mr. A. S. Hewitt, of Yarmouth, is the architect, Mr. B. G. Beech, of Yarmouth, the contractor, and Mr. J. T. Goffin, of Yarmouth, has been entrusted with the carpentering, glazing, and painting.

ELEMENTARY SCHOOL, RYHOPE.

A new elementary school has been built at Ryhope. The building is of two stories, and stands on a site of about 1¼ acres. Accommodation is provided for 800 children—400 boys and 400 girls. There are seven classrooms and a central hall on each floor. The classrooms open out directly from the central hall, and there are two rooms for the teachers on each floor—one for the head teacher, and the other for the assistants. A cookery centre for the use of schools in the district is also provided. The site is laid with a view to an infants' department being erected later to accommodate between 400 and 500 children. The school is warmed by hot water on the low-pressure system, and lighted by gas. The playgrounds are all asphalted. The builder is Mr. Marshall France, of Redcar, and the architect is Mr. John Eltringham, of Sunderland. The total cost of the building when completed will be about 8,000*l.*

EDINBURGH SURGEONS' HALL.

A scheme of improvement has been carried out at the Surgeons' Hall, the headquarters of the Royal College of Surgeons of Edinburgh. The old Council-room or hall formerly occupied the greater portion of the ground story. It has now been vacated as such, divided into two, one part being added to the library, and the other part forming a reception-room, and a new Council hall has been provided in the western portion of the old museum devoted to the Barclay collection. The College possesses in Hill-square, adjoining the Surgeons' Hall, certain tenement houses. By taking in this property new accommodation has been provided for the Barclay anatomical collection, and also further museum space. The architect for the alterations is Mr. A. Balfour Paul.

HIPPODROME, DERBY.

The North Midland Theatres Syndicate, Ltd., propose to erect a hippodrome and music-hall in this town. The plans, prepared by Messrs. Marshall & Tweedie, of Newcastle-on-Tyne, are at present under the consideration of the Improvement and Construction Committee of the Town Council. The scheme will involve the expenditure of 15,000*l.*

BUILDING ACTIVITY IN LANCASHIRE.

A correspondent of the *Daily Chronicle* states that the building industry in various parts of east and south-east Lancashire is now showing signs of increased activity. At Bury the Corporation are putting into operation a big housing scheme, dozens of artisans' dwellings to be erected. Local contractors are to build at an early date between 200 and 300 houses in the vicinity of Astley, where the Pilkington Colliery Company, of Clifton, near Manchester, are spending a quarter of a million sterling on new collieries. At Leigh, close by, three new cotton mills are in course of erection, besides much new house property; at Irlams-o'-th'-Height, near Manchester, a firm of estate agents are building a colony of 200 commodious houses. Other towns report similarly.

BRADFORD TOWN HALL EXTENSION.

This large addition to the Town Hall was formally opened by the Lord Mayor of Bradford, Mr. James Hill, J.P., on Tuesday, the 28th ult. The work was commenced at the end of 1904, the foundation-stone being laid in July, 1905, and the cost of the work has been about 86,000*l.* The building comprises a new Council-chamber, six committee-rooms, a large banqueting hall and luncheon-room, and a suite of rooms for the Lord Mayor, besides a second court and magistrates' room, also accommodation for the following, viz.:—Treasurers' (including collectors and overseers), gas, electricity, weights and measures, education, health, architects', and curator's departments. The elevation of the new building, drawings of which were exhibited at the Royal Academy in 1906, are faced with local stone, and designed in a phase of English Gothic to harmonise with the original structure, it being intended when further extension becomes necessary that additional stories, with new roof at the same level as the present extension, should be added to the front of the original building. The present work has been carried out from plans prepared by and under the supervision of Mr. F. E. P. Edwards, F.R.I.B.A. (formerly City Architect of Bradford, and now City Architect of Sheffield), in consultation with Mr. R. Norman Shaw, R.A., of London, the completion of the internal furnishing since the beginning of the present year having been under the supervision of R. G. Kirkby, A.R.I.B.A. F.S.I., City Architect. The principal contractors were as follows:—Masons' work, Michael Booth & Sons; concreters' work, C. Marsden & Son; plumbers' work, Atkinson & Smith; steelwork, Skipwith, Jones, & Lomax, Ltd., Manchester, and S. Parsons & Co., Ltd.; joiners' work, T. Obank & Sons; heating and ventilating, J. Jeffreys & Co., Ltd., London; painters' work, J. A. Southwart; slaters' work, T. Nelson & Son; lifts, Keighley Electrical Engineering Company, Ltd., Keighley, and Charles Bell; carving, Earp, Hobbs, & Miller, Manchester; fibrous plaster work, Leonard Stead; modelling of Council-chamber ceiling, E. W. Gimson, London. The internal fittings were supplied by E. Archer & Co.; Ashwell & Nesbit, Ltd., Leicester; the Bromsgrove Guild of Handicrafts, Birmingham; Robert Garnett & Sons; Garston Frères, Alost, Belgium; Goodall, Lamb, & Heighway, Ltd., Manchester; E. Harland & Sons; Lingards, Ltd.; Marsh, Jones, & Cribb, Ltd., Leeds; John Moulson & Sons, Ltd.; Christopher Pratt & Sons; J. W. Singer & Sons, Ltd., Frome; and Thomas Taylor & Son; and wrought ironwork, Mr. Albert Halliday, of Baildon. The bills of quantities were prepared by Mr. J. Flew. The clerks of works were the late Mr. Joseph Gledstone and Mr. Harry Fairburn Further internal alterations to the old buildings, including the construction of new entrance hall and main staircase, are shortly to be carried out, from plans prepared by Mr. R. G. Kirkby, City Architect.

NEW BUILDINGS IN GLASGOW.

The Glasgow Dean of Guild Court has granted the following linings:—The Petershill Building Company, 107, Bath-street, to erect a tenement of dwelling-houses on the east side of Bedlay-street, Springburn; Richard Henderson, architect, 116, Hope-street, to erect six tenements of shops and one and two room and kitchen houses in Cathcart-road and Carmunnock-road; and the Alexandra Park Property Company, 65, Bath-street, to erect six tenements of dwelling-houses and shops on the north side of Cumbernauld-road.

SKATING-RINK, ABERDEEN.

A roller skating-rink has been opened in Forbesfield-road, Aberdeen. The building is 260 ft. long by 115 ft. wide, with a skating area of 220 ft. by 75 ft. There is a promenade all round 10 ft. wide at the sides, and extending to 20 ft. at the ends. The plans were prepared by Mr. John Rust, City Architect, and the following were the contractors for the different works:—Mason, Mr. David Weir; carpenters, Messrs. Leslie & Hay; plumber, Mr. John Dean; painter, Mr. William Philip; ironwork, Messrs. James Abernethy & Co.; electric lighting, Messrs. Fred. Wilkins Brothers, Liverpool. The total cost of the building has been upwards of 4,000*l.*

NEW TOWN HALL AND PAVILION FOR TORQUAY.

At the meeting of the Torquay Town Council on October 5 the General Purposes Committee reported having received from Mr. Thomas Davison, Great Ormond-street, London, W.C., plans for the new Town Hall and municipal buildings. He had made a careful estimate of the cost, based on cube contents, and priced at the same rates as the Carnegie Library, and was of opinion that the work could be carried out for 29,850*l.* The Committee recommended that the plans be approved as submitted by Mr. Davison for the erection of the new Town Hall and municipal buildings at an estimated cost of 30,000*l.*; also that plans prepared by the Borough Surveyor, Mr. H. A. Garrett, for the erection of a pavilion, at an estimated cost of 15,000*l.*, be approved; that Mr. Davison and Mr. Garrett be instructed to proceed with the preparation of the necessary working drawings, specifications, and bills of quantities with a view to tenders being invited for the work. Mr. Kenny, Chairman of the Committee, said the pavilion plans were agreed to some time ago. With regard to the Town Hall plans the only objection appeared to be that the assembly-room was not quite large enough. Mr. Davison provided seating accommodation for 1,700, and for 250 more with galleries. Underneath there would be a large room suitable for a drill-hall, and which could be used for an overflow meeting in the event of a big political demonstration. If they attempted to increase the size of the hall it would mean an additional 5,000*l.* He explained that the 45,000*l.* proposed expenditure did not include the furnishing of either building. Mr. Glanfield moved as an amendment to the adoption of the report that the proposed assembly-room be increased in width by 15 ft. The amendment was negatived, and the recommendation of the Committee was carried by twenty-six votes to five.

TRADE NEWS.

Mr. Thomas Rowbotham, contractor, Birmingham, has obtained the contract for the superstructure of the Royal Military College at Sandhurst, for the War Office Department.

At a special meeting of Leith Dock Commission on the 1st inst., the contract for the construction of the new graving dock at the Imperial Dock, Leith, was fixed, Messrs. Charles Brand & Son, West Regent-street, Glasgow, being the successful contractors. The work is to include excavation, masonry, timber, and cement work. The work is expected to cost about 100,000*l.* The contract for the dock gates and pumping machinery has yet to be fixed.

The Empire Skating Rink, Warrington, is being ventilated by means of Shorland's patent exhaust roof ventilators, supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Sanitary and Engineering News.

KELSO WATERWORKS.

The Kelso Town Council have engaged Mr. Harry W. Taylor (Messrs. Taylor, Wallin, & Taylor, of Newcastle-upon-Tyne and Birmingham) as their engineer to examine and report upon the proposal to obtain water for the Burgh of Kelso by gravitation from the moorlands of the Cheviot Hills. The existing supply of water to the town is drawn from the River Tweed, but as this river has suffered severely from pollution from the towns above the Council consider the time has now arrived when a new source should be sought. Various schemes, estimated to cost between 10,000*l.* and 30,000*l.*, have been under consideration during the last ten years, including suggested supplies from the gravel beds of the river, from deep wells in the red sandstone, from springs in the neighbourhood, and from impounding reservoirs, and from the hill burns. The Council have now decided thoroughly to investigate the proposal for obtaining water from the Cheviots, and on the 28th ult. instructed Mr. Taylor to make a detailed examination and report.

SEWERAGE AND ELECTRICAL UNDERTAKINGS, MANSFIELD.

A Local Government Board inquiry was recently held by Mr. M. K. North into the application of the Mansfield Corporation to borrow 150*l.* for works of sewerage in Debdale-

Digitized by Google

lane, and 3,500*l.* for the electricity undertaking. Evidence as to the first application was given by the Borough Surveyor, and with regard to the second it was explained that the previous loan of 3,145*l.* for mains and services was now exhausted, and the present application was for 3,500*l.*, 2,000*l.* of which was for mains, and 500*l.* for meters. The present economiser was too small, and the Council decided to enlarge it at a cost of 200*l.*, whilst a water-softening plant was required at a cost of 300*l.*

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Mr. A. W. Percival, architect and surveyor (Plymouth), has removed his offices from 12, George-street, to Sun-buildings, Bedford-street, Plymouth.——The Holophane Glass Company have removed their offices from 146A, Queen Victoria-street, to 12, Carteret-street, Westminster, S.W.——We are informed that Messrs. Newton, Chambers, & Co., Ltd., have altered their London address to "Brook House," 10-12, Walbrook, London, E.C.

INTERNATIONAL ARCHITECTURAL COMPETITION IN ROME, 1911.

The object of this competition is the erection of dwelling-houses, completed and furnished, so as to give a survey of what has been done during the last thirty years in various lands by various nationalities, to realise artistic ideas in the home, and to create types of essentially modern character, which answer the æsthetic and practical requirements of the times. Three premiums are offered for this competition, 150,000, 100,000, and 50,000 lire. In order to give architects the assurance that the means at their disposal for carrying out the exhibits shall not be overstepped, the Committee binds itself to carry out the work by contract. Other conditions that deserve to be specially mentioned are:—

(1) The international competition is open solely to foreigners, whereas a special competition is opened for the Italians. (2) The choice of the architects and the type of building lies exclusively with the country competing. (3) The site reserved for foreign exhibits measures about 60,000 sq. metres; this will be apportioned as required amongst the various nationalities. (4) Only one-third of the apportioned surface may be built over, the remainder being reserved for gardens and open spaces. (5) The site is lent free of charge; the building is limited to two stories. (6) The building is to be carefully appointed and furnished, so that the destination of each apartment and its suitability to its occupants may be apparent to all. (7) The premiums will be awarded by a jury composed of a representative from each country competing, and two delegates from the Exhibition Committee. (8) Entries can be made up to December 15, 1909. The apportion of the sites will be made on December 30, 1909. (9) Inquiries *re* the international competition to be made to the "President of the International Art Exhibition of 1911, Rome."

INTERNATIONAL EXHIBITION, ALEXANDRA PALACE.

It is proposed to hold an "International Exhibition of Arts and Manufactures" at the Alexandra Palace, Wood Green, from August to November in next year. The exhibition is to include agriculture; architectural and building industries; mining work; metals, glass and ceramics; materials and processes connected with civil engineering; house furnishing and decoration; heating and ventilation; lighting; electricity; textile industries; mechanical materials and processes; safety and organisation of work; drawing; chemical industries, etc. A Committee, including a good many well-known names, has been formed. Information can be obtained from the General Commissariat, Alexandra Palace, Wood Green, N.

SCHOOL OF ART WOOD-CARVING.

The School of Art Wood-carving, 39, Thurloe-place, South Kensington, has been reopened after the usual summer vacation, and we are requested to state that some of the free studentships in the evening classes maintained by means of funds granted to the school by the London County Council, are vacant. The day classes of the school are held from 10 to 1 and 2 to 5 on five days of the week, and from 10 to 1 on Saturdays. The evening class meets on three evenings a week and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the manager.

THE BURWEN CASTLE ROMAN CAMP.

The excavations which have been carried out on the site of the Burwen Castle Roman Camp by Mr. F. Gerald Simpson and Mr. Thomas May have been concluded. The "finds" have not been numerous, pointing to a short occupation of the site by the Romans, but the coins found, and more especially the fragments of pottery, throw some light on the date of construction. Everything will be confided to the care of the Skipton Free Library Committee.

EXETER CATHEDRAL.

On behalf of the Chapter of Exeter Cathedral, Bishop Earle, the Dean, has issued a statement about the work that has yet to be done for the necessary reparation of the cathedral fabric. He points out that for various purposes, fabric, organ, stained-glass windows, electric light installation, and the like, 80,907*l.* has been spent during the last thirty-five years. A sum of nearly 7,000*l.* is now needed for the following work:—To complete the repair of the west front, 2,245*l.*; to avert the ruin of the chapter-house, 700*l.*; to carry out repairs on the roof, pinnacles, battlements, buttresses, windows, etc., 3,955*l.*

UNEMPLOYED STATISTICS (BUILDING TRADES).

In the House of Commons on October 4, Mr. Fell asked the President of the Board of Trade how many men engaged in the building trade were out of work according to the last return for England; and how this compares with the similar returns for the same period for each of the past three years.—The President of the Board of Trade (Mr. Churchill) said:—The Department has no information as to the total number of building trade operatives out of work. The percentage unemployed among trade union carpenters and plumbers at the end of August, 1909, was 10·0, the corresponding figures for 1908, 1907, and 1906 being 10·3, 5·6, and 5·5. Mr. Fell: Would that include the bricklayers, labourers, and others employed? Mr. Churchill: The figures I have quoted relate to trade union carpenters and plumbers. Mr. E. A. Goulding: Is there not a vast body of working men attached to the building trade not associated with any trade union? Mr. Churchill: I should have thought it was well known by this time that the Board of Trade unemployment figures only relate to statistics of trade unions, consequently they are not thoroughly representative, and we have never pretended they are.

PROTECTION OF STREET VIEWS IN TOWNS.

In imitation of the law for preserving the picturesqueness of certain country districts, Hanover has recently drawn up a statute for the protection of features in streets of historical or artistic importance. The statute decrees that no new buildings or alterations in specified streets shall interfere with the existing street vista, and that new buildings shall in style, material, and scale harmonise with their surroundings.

LIVERPOOL CATHEDRAL.

At a meeting of the Liverpool Cathedral Committee on Monday, designs for the chapter-house of the new cathedral were presented by Mr. Gilbert Scott, the architect, and passed by the Committee, subject to the approval of the Freemasons of the West Lancashire province, who are erecting the chapter-house at a cost of 10,000*l.* as a memorial to the late Lord Lathom. The building is of octagonal shape, and will be lighted with four large Gothic windows. The Committee also approved the detailed design of the triforium for the choir, the marble flooring of the Lady chapel, which will be carried out in green and white marble, and the design for the reredos of the Lady chapel. Excellent progress was reported as having been made with the Lady chapel, which is expected to be ready for opening next June.

ANCIENT CHURCH PANELS.

Some time ago the interior of Burntisland Church, Fifeshire, was renovated, under the direction of Sir R. Rawand Anderson, at a cost of about 600*l.* On being consulted about restoring the old panels, and bringing to light the emblems in relief which adorned them, the architect reported that the work would be arduous and expensive. There are forty-four panels, comprising the gallery front on three sides of the church, and the inscriptions on them are only dimly visible owing to the encrustations of paint and varnish during three centuries. Influential members of the congregation have since employed a local artist of archæological tastes to restore some of the old panels, and with considerable labour the quaint designs and inscriptions of six of them are now revealed. Four in the sailors' loft are emblematical of the sea, two being ships of war; one has a mariner's compass, and another a naval officer in uniform in the act of using a sextant. A panel revived in the merchants' gallery shows an antique pair of scales. It is suggested that should the work of restoration proceed there will literally be a picture-gallery encircling the church, reminiscent of the crafts and guilds of the ancient burgh.

Law Reports.

DRIVING A TRACTION ENGINE.

At the Police Summons Court, held in the Guildhall on Tuesday, before Alderman Sir William Dunn, Amos Willett, engine driver, in the employ of Messrs. Clements & Co., was summoned for driving a traction engine with three carriages attached through Fleet-street during prohibited hours.

Evidence was given in support of the summons to the effect that just after midnight on September 21 defendant drove up a heavy traction engine drawing three trailers to a building in course of demolition in Fleet-street. Loading up was carried on until a quarter to eight in the morning. Willett was informed that traction engines were not allowed in Fleet-street at any time.

The Alderman: Then all hours are prohibited?

Chief Inspector Atkins: Yes, sir.

Willett said he was unaware of the prohibition. Under these circumstances a fine of 5s. and costs was inflicted.

Patents.

APPLICATIONS PUBLISHED.*

18,681 of 1908.—August Reisch: Process of producing floors, slabs, and the like in imitation of marble.

18,968 of 1908.—Samuel Abram: Brick-making machinery.

18,974 of 1908.—Samuel Henry Adams and Colin Henry Adams: Siphonic flushing and discharge apparatus.

19,281 of 1908.—Joseph Alfred Hofmann: Building construction.

20,078 of 1908.—Robert Speedie Watson: Chimney caps, cowls, or tops.

22,309 of 1908.—John McNay: Method of and means for bending bars as used in ferro-concrete.

22,453 of 1908.—Thomas Jones: Domestic stoves and grates.

24,401 of 1908.—Cornelius John Sutton and Thomas Bramwell: Fuel-economisers for kitchen and like ranges.

24,963 of 1908.—George Albert Ure: Kitchen ranges.

25,291 of 1908.—Adolph Jäger: Automatic window-fixing device.

26,034 of 1908.—Robert William Henry Rodney: Fasteners for doors, casements, and the like.

27,936 of 1908.—George Chisholm: Waste plugs of baths, and the manufacture of the same.

28,329 of 1908.—John Pinkerton Curry: Tool for twisting wire ties.

2,871 of 1909.—Lewis Ingham and Leeds Fireclay Company, Ltd.: Urinals.

6,535 of 1909.—Lewis Ernest Curtis: Machines for expanding sheet metal.

8,312 of 1909.—Henry Howard Gardner: Moulds for cement, concrete pipes, and the like.

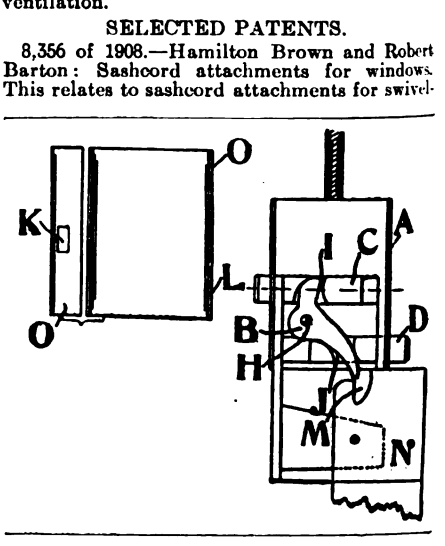
13,434 of 1909.—Nicholas Reinehr: Safety locks.

16,735 of 1909.—Wilhelm Otto: Floor cramps.

17,221 of 1909.—Thomas Hardy: Appliances applicable to windows for the purpose of ventilation.

SELECTED PATENTS.

8,356 of 1908.—Hamilton Brown and Robert Barton: Sashcord attachments for windows. This relates to sashcord attachments for swivel-



ling sliding sashes. The cord is secured to a plate A, carrying two sliding bolts C, D,

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

PATENTS.—*Continued on page 398.*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xvii.; Auction Sales, xxvi.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

OCTOBER 11.—**Hull.**—TRAINING COLLEGE.—The Hull Education Committee offer premiums of 150*l.*, 100*l.*, and 50*l.* for drawings submitted in competition for a new college. For further particulars see advertisement in our issue of July 24.

* OCTOBER 31.—**Pembrokeshire.**—FARMHOUSE, ETC.—The Pembrokeshire Small Holdings and Allotments Committee invite model plan and specification for a farmhouse and out-buildings. See advertisement in this issue for further particulars.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l.*, 30*l.*, and 20*l.* Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

* NOVEMBER 30.—**Workington.**—SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. See advertisement in this issue for further particulars.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 9.—**Darlington.**—PREMISES.—Pulling down of old premises in Blackwellgate, Darlington, and erection and finishing of new business premises. Drawings, etc., may be seen, and bills of quantities, etc., obtained, at offices of Messrs. Hoskins & Brown, architects, Court-chambers, Darlington.

OCTOBER 11.—**Barrow-in-Furness.**—SHED.—The Corporation invite tenders for the erection of a temporary tripe shed at the abattoirs. Bills of quantities may be obtained and the plans inspected on application at the office of the Borough Engineer.

OCTOBER 11.—**Cuxton, near Rochester.**—MILL.—For erection of a cattle cake mill at Cuxton, near Rochester, Kent, for Mr. W. J. Mackey. Drawings, etc., may be seen at the office of Messrs. Ruck & Smith, architects, 86, Week-street, Maidstone, and bills of quantities obtained on deposit of 1*l.* 1s.

OCTOBER 11.—**Cwmdu (Llanrhaiadr).**—SCHOOL WORK.—Tenders are invited for works of improvement and alterations to the Cwmdu Council School and for a proposed new water supply. Plans, etc., may be seen at the County Education Offices, Newtown, on written application being made to the Clerk, accompanied by a deposit of 1*l.* 1s.

OCTOBER 11.—**Dundalk.**—CLOSETS.—For erection of flushing closets; providing and fixing to kitchen boiler, water gauge, etc., and placing a metal rail around engine; erecting guard around wheels of wringer in laundry, and connecting small boiler-house with steam pipe, etc., for the Guardians, in accordance with specification prepared by Mr. Cahill, C.E., which can be seen at the Board-room.

OCTOBER 11.—**Huddersfield.**—DETACHED HOUSE, GLEDHOLT BANK.—Name and address to Mr. James H. Hall, architect and surveyor, 10, Market-street, Huddersfield.

OCTOBER 11.—**Eccleshill.**—WEAVING SHED.—Works required in the erection of a large weaving shed at the Union Mills, Eccleshill, near Bradford, for Messrs. John Pilley & Sons. Plans may be seen and quantities obtained at the offices of Messrs. Mawson & Hudson, architects, Exchange-buildings, Bradford.

OCTOBER 11.—**Elgin.**—SKATING RINK.—Carpenter, plumber, and painter and glazier work in the erection of a roller skating rink in Cumming-street, Elgin. Plans, etc., to be seen with Mr. R. B. Pratt, A.R.I.B.A., 110, High-street, Elgin.

OCTOBER 11.—**Lichfield.**—NEW CHURCH SCHOOLS.—Erection of new Christ Church mixed and infants' schools. Names and addresses to the architect, Mr. Fred T. Beck, Wulfrun-chambers, Darlington-street, Wolverhampton, enclosing a deposit of 2*l.* 2s. for quantities.

OCTOBER 11.—**Portsmouth.**—HOSPITAL.—For supplying and erecting in the grounds of the Infectious Diseases Hospital at Milton, in the borough of Portsmouth, a portable corrugated-iron isolation hospital capable of holding sixteen beds. Mr. G. Hammond Etherton, Town Clerk, the Town Hall, Portsmouth.

OCTOBER 12.—**Bury St. Edmund's.**—FOUNDATIONS.—The Sanatorium Committee invite tenders for preparing site, building foundations, laying drains, etc., for the proposed sanatorium. Plans, etc., may be examined and forms of tender obtained from Mr. Walter D. Harding, A.M.Inst.C.E., Town Hall, Bury St. Edmund's.

OCTOBER 12.—**East Ham.**—REPAIRS.—For sundry repairs and repainting of the scarlet fever block at the Isolation Hospital, Boundary-road, East Ham, for the Town Council. Form of tender, etc., to be obtained from the Borough Engineer, Mr. A. H. Campbell, M.Inst.C.E., upon application and payment of 1*l.* deposit.

OCTOBER 12.—**Malling.**—SHELTERS.—The Guardians invite tenders for supplying and fixing two revolving consumptive shelters, etc. Plan, etc., to be seen at the Workhouse, West Malling.

OCTOBER 13.—**Cobham.**—STEAM ROLLER HOUSE.—Strood R.D.C. invite tenders for the erection of a steam roller house at Cobham, for the Strood R.D.C. Copy of plan and specification can be obtained of the District Surveyor, Mr. L. Randerson, of Meopham, Gravesend, on payment of 10s. 6d.

OCTOBER 13.—**Dewsbury.**—SHOPS.—Works required in the conversion of a warehouse into shops, situation Bradford-road, Dewsbury. The plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Kirk, Sons, & Ridgway, F.R.I.B.A., architects, surveyors, and valuers, Market-place, Dewsbury.

OCTOBER 13.—**Glynneath.**—CHAPEL.—Erection of new chapel at Glynneath. Plans, etc., may be seen at Pencaerau House.

OCTOBER 13.—**King's Norton.**—SHELTER.—King's Norton and Northfield U.D.C. invite tenders for the erection of a shelter in the King's Heath Park. Copies of the bills of quantities, etc., may be obtained, and plans may be seen, at the office of the Engineer and Surveyor to the Council, Mr. Ambrose W. Cross, of No. 23, Valentine-road, King's Heath, on payment of a deposit of 1*l.* 1s.

OCTOBER 13-OCTOBER 29.—**Lye.**—SCHOOL.—Worcestershire Education Committee invite tenders for the erection of a Council elementary school in Valley-road, Lye. Applications for forms of tender and bills of quantities may be made, on or before October 13, at the County Education Office, Worcester. Applications must be accompanied by a deposit of 2*l.* 2s. The drawings may be seen at the office of the architect, Mr. Alfred B. Rowe, 30, Foregate-street, Worcester.

OCTOBER 13.—**Tofts.**—SLAUGHTER-HOUSE.—Tenders wanted for the brick, mason, joiner, slater and plaster, plumber, iron, and painter works of public slaughter-house to be erected near Tofts, Stone-house. Schedules may be obtained from Mr. Gavin Paterson, architect, Hamilton, on payment of 10s. 6d.

OCTOBER 14.—**Burghead, Hopeman, Lossiemouth.**—REPAIRS.—Alterations and repairs on the following buildings for the County Territorial Association, viz.:—(1) Drill Hall at Burghead; (2) Drill Hall at Hopeman; (3) Drill Hall at Lossiemouth. Plans, etc., may be seen with Mr. Charles C. Doig, architect, Elgin.

OCTOBER 14.—**Elgin.**—HOUSE.—Mason, carpenter, slater, plumber, plaster, painter, and glazier works of Excise officer's house to be built at the Glenlossie-Glenlivet Distillery. Plans, etc., may be seen with, and schedules of quantities obtained from, Mr. Charles C. Doig, architect, Elgin.

OCTOBER 14.—**Llwynhudol.**—RESIDENCE.—Erection of a new residence at Llwynhudol, Abereroh, Pwllheli, for Mrs. Mary Williams, Bronrhiw, Salem-crescent, Pwllheli. Plans, etc., are now open for inspection at Shop Gosh, Pwllheli.

OCTOBER 14.—**Midville.**—ALTERATIONS, ETC., TO FARMHOUSE.—Alterations and additions to a farmhouse, cottages, and farm buildings at the Midville House Farm, now in the occupation of Mr. Henry Caudwell. Written application to Messrs. Mortimer & Son, architects, Lincoln.

OCTOBER 14.—**Reading.**—ALTERATIONS, ETC., TO BOARD-ROOM.—The Guardians invite tenders for alterations and additions to their board-room and offices, 32, Thorn-street, Reading. Plans, etc., may be seen, and forms of tender obtained, on applying to the Clerk to the Guardians, 32, Thorn-street, Reading.

OCTOBER 14-30.—**Stroud.**—PROPOSED NEW CRAFT SCHOOL.—The Gloucestershire Education Committee invite tenders for the erection of a new craft school at Stroud. Bills of quantities can be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, The Cross, Gloucester, upon depositing 2*l.* 2s.

OCTOBER 15.—**Newbridge.**—HOME.—Erection of soldiers' home at Newbridge, county Kildare, for Miss Sandes. Plans, etc., may be seen at the Wolseley Soldiers' Home, Great George's-street, Dublin, and at the office of Mr. W. J. W. Roome, M.R.I.A.I., architect Kingscourt, Wellington-place, Belfast, and schedules of quantities may be obtained from Messrs. W. H. Stephens & Sons, 13, Donegall-square North, Belfast, on payment of deposit of 1*l.*

OCTOBER 15.—**Rawmarsh.**—ADDITIONS.—For additions, etc., to the Ryecroft Branch Stores, Rawmarsh, for the Masbro' Equitable Pioneers' Society, Ltd. Plans, etc., may be inspected, and further information obtained, at the office of the architect, Mr. J. Platts, High-street, Rotherham.

OCTOBER 16.—**Bradford.**—ALTERATIONS TO BATHS.—The Bradford Corporation invite tenders for alterations to Turkish and medicated baths at the Central Baths. Drawings, etc., may be seen, and bills of quantities and form of tender for bricklayer's, joiner's, and plasterer's work, also schedule of prices for plumber's work, obtained, on application to the City Architect, Whitaker-buildings, Brewery-street, Bradford.

OCTOBER 16.—**Handley.**—REPAIRS.—Dorset C.C. invite tenders for certain repairs, alterations, and additions at Thorney Down Farm, Handley. Plans, etc., may be seen at the offices of Messrs. Fletcher, Son, & Brett, Wimborne.

OCTOBER 16.—**Portumna.**—COTTAGES.—Portumna R.D.C. invite tenders for erection of thirty-nine single labourers' cottages and ten double labourers' cottages, in accordance with plan and specification to be had on application to Mr. M. Lavan, Clerk to Council, Clerk's Office, Union Workhouse, Portumna.

OCTOBER 16.—**St. Dogmaels (Cardigan).**—HALL.—For a new hall at St. Dogmaels. Plans, etc., can be seen at the office of Mr. J. Teifion Williams, architect, Napier-street, Cardigan.

OCTOBER 18.—**Finchley.**—SCHOOL RENOVATION.—Finchley U.D.C. Education Committee invite tenders for the renovation of the corridors, cloakrooms, and cookery centre, and for the provision and fixing of cloakroom fittings at the Long-lane Council School, East Finchley. Form of tender, etc., may be obtained from Mr. C. J. Jenkin, Surveyor's Department, Council Offices, Finchley, N., on deposit of 1*l.*

OCTOBER 18.—**Hopeman.**—HOUSE.—Mason, carpenter, slater, plumber, plaster, painter, and iron works of new house, motor garage, enclosing walls and railings, to be erected at Hopeman. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

OCTOBER 18.—**Pickering.**—ADDITIONS TO SCHOOLS.—Addition to the Pickering Grammar School (Lady Lumley's Grammar School Foundation). The drawings and specifications may be seen at the school on application to the Head Master, and bills of quantities may be obtained on application to the architect, Mr. John Bilson, 23, Parliament-street, Hull, on payment of 1*l.*

OCTOBER 18.—**Rotherham.**—COURT HOUSE ALTERATIONS.—The West Riding Standing Joint Committee invite tenders for Rotherham Court House alterations, etc. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

✱ OCTOBER 18. — **Southgate, N.** — COTTAGE.—The Southgate U.D.C. invite tenders for erection of a cottage at the Refuse Destructor, Barrowell Green, N. See advertisement in this issue for further particulars.

OCTOBER 19.—**Trimdon Grange, etc.**—SCHOOLS.—The C.C. of Durham invite tenders for new Council schools at Trimdon Grange and Fatfield, and extensions at Seaham Harbour Council School. Plans, etc., may be seen, and bills of quantities obtained, as follows:—(1) For Trimdon Grange School (450 scholars), at the office of Mr. W. Rushworth, Shire Hall, Durham; (2) for Fatfield School (250 scholars) and extensions at Seaham Harbour Council School (588 scholars), at the office of Mr. F. E. Coates, Shire Hall, Durham.

OCTOBER 20. — **Belfast.** — WAREHOUSE.—Building a warehouse in Grosvenor-road for Messrs. T. L. Hardy & Co. Drawings, etc., may be seen at the office of Messrs. Watt, Tulloch, & Fitzsimons, architects, 77A, Victoria-street, Belfast, and copies of the bill of quantities obtained from Mr. S. C. Hunter, Scottish Provident Buildings, Belfast.

OCTOBER 20.—**Middlesbrough.**—SCHOOL.—Erection of the Kirby Secondary School, Middlesbrough, for the Education Committee. Names to Mr. A. Forrester, architect, 141, High Albert-road, Middlesbrough. Bills of quantities will be supplied on deposit of 2*l.* 2*s.*

✱ OCTOBER 22. — **Bournemouth.** — SCHOOLS. — The Bournemouth Education Committee invite tenders for new science, art, and technical schools, Lansdowne, Bournemouth. See advertisement in this issue for further particulars.

✱ OCTOBER 22. — **Poplar, E.** — MORTUARIES. — The Poplar B.C. invite tenders for erection of mortuaries and post-mortem room. See advertisement in this issue for further particulars.

✱ OCTOBER 23.—**Crewe.**—SCHOOL.—The Crewe Education Committee invite tenders for new boys' school and additions and alterations to the Bedford-street Schools. See advertisement in this issue for further particulars.

OCTOBER 30.—**Christchurch.**—ENGINE-HOUSE AND OTHER BUILDINGS.—The T.C. invite tenders from Christchurch builders and contractors for the erection of an engine-house and other buildings upon a site near Whitehall, Christchurch, in connexion with the main drainage scheme. Drawings of the proposed buildings may be seen at the office of the Borough Surveyor (Mr. H. J. Farmer), and bills of quantities obtained on payment of a deposit of 1*l.* 1*s.* to the Engineer, Mr. C. J. Lomax, A.M.Inst.C.E., 37, Cross-street, Manchester, or from the Borough Surveyor.

NOVEMBER 1.—**Limerick.**—CENTRAL TECHNICAL INSTITUTE.—The County Borough of Limerick Technical Instruction Committee invite tenders for the erection of new Central Technical Institute, Military-road, Limerick, in accordance with the drawings, etc., prepared for same by Mr. W. P. Ryan, C.E., architect, London. Drawings, etc., can be seen, and bills of quantities and forms of tender be obtained, on application to Mr. James Comerton, B.A., Principal and Organising Secretary, 69, George-street, Limerick, or to the Quantity Surveyor, Mr. James Mackey, 58, Dame-street, Dublin, and 82, South-mall, Cork. A deposit of 1*l.* 1*s.* will be required for the bills of quantities.

NOVEMBER 2. — **Newtonmore.** — HOUSE. — Carpenter, slater, plasterer, and painter works of house to be erected at Newtonmore. Plans, etc., may be seen with the architect, Mr. Alex. Cattanach, Kingussie.

NOVEMBER 8. — **Englefield Green.** — HOSPITAL. — Egham U.D.C. invite tenders for isolation hospital to be erected upon land at Northcroft-road, Englefield Green. Forms of tender, etc., can be obtained from the architect, Mr. Walter Gray, Westwood, Egham Hill, on the deposit of 2*l.* 2*s.*

NO DATE.—**Broughton.**—CHAPEL, ETC.—Works required in the erection of a Wesleyan chapel and school at Broughton, near Salisbury. Quantities may be obtained from Messrs. W. J. Morley & Sons, architects, 10, Craven-house, Kingsway, London, W.C.

NO DATE.—**High Wycombe.**—SCHOOLROOM, ETC.—New schoolroom, classrooms, and alterations, etc., at Newland Chapel, High Wycombe. For full particulars apply to Mr. Alfred Nash, architect, Priory-avenue, High Wycombe.

NO DATE.—**Thornhill.**—ALTERATIONS.—Contractors are requested to apply to Messrs. Haller, Machell, & Garvie, civil engineers, Corporation-chambers, Dewsbury, for particulars as to alterations to the schoolmaster's house and outbuildings at Walker's Free School, Thornhill.

ENGINEERING, IRON, AND STEEL.

OCTOBER 11.—**Manchester.**—HEATING APPARATUS.—Manchester Education Committee invite tenders for providing and fixing of low-pressure heating apparatus at the Warford Special Schools, Goss Moss, near Alderley Edge, Cheshire. Plans may be seen, and a copy of quantities obtained, at the Education Offices, Deansgate, Manchester, on a deposit of 1*l.* 1*s.* Cheques to be made payable to the Accountant, Education Offices, Deansgate, Manchester.

OCTOBER 12.—**Manchester.**—ELECTRIC LIGHTING.—The Baths and Washhouses Committee invite tenders for the wiring and complete installation of electric lighting at the Cheetham Baths and Public Hall. Drawing, etc., may be obtained at the office of the City Architect, Town Hall, upon payment of 1*l.* 1*s.* Cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

OCTOBER 13. — **Belfast.** — BOILERS. — The Belfast Harbour Commissioners invite tenders for the construction, etc., of four water-tube boilers and superheaters, with main flue leading to chimney, together with all requisite steam piping, etc., at the new graving dock now being constructed at Belfast. Outline specification and form of tender, and any further information required, may be obtained from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E.

OCTOBER 13. — **Belfast.** — ENGINES, ETC. — The Belfast Harbour Commissioners invite tenders for the construction, etc., of two sets of engines and pumps, a hydraulic accumulator, etc., at the new graving dock now being constructed at Belfast. Outline specification and form of tender, and any further information required, may be obtained from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E.

OCTOBER 19. — **Manchester.** — RAILS, ETC. — The Tramways Committee of the Manchester Corporation invite tenders for the supply of (*a*) steel tie-bars for tramway rails, and (*b*) bolts and nuts for fish-plates. Specifications, etc., may be obtained on application to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

OCTOBER 21.—**Tonypandy.**—HEATING APPARATUS.—The trustees of the English Wesleyan Chapel, Tonypandy, invite tenders for the installation of a heating apparatus in the chapel. All particulars and view of the building may be obtained from Mr. Lewis Jenkins, three doors from the chapel.

OCTOBER 23.—**Birmingham.**—NEW WORKS, WASHWOOD HEATH.—The board of directors of the Midland Railway Carriage and Wagon Company invite tenders for the supply and erection of steel structural work to cover an area of 60,000 sq. yds. or thereby, to the designs of Messrs. D. & A. Home-Morton, engineers to the company. Specifications may be obtained, and drawings may be seen, at the offices of the engineers, 130, Bath-street, Glasgow, and 81, Francis-road, Edgbaston, Birmingham, on deposit of 2*l.* 2*s.* by crossed cheque.

OCTOBER 23.—**Radcliffe.**—FOOTBRIDGE OVER RIVER IRWELL.—Radcliffe U.D.C. invite tenders for the construction, erection, and completion of a footbridge over the River Irwell from Lomax-street to Cawdaw. Drawings, etc., may be obtained on application to Mr. W. L. Rothwell, the Engineer to the Council, at offices of Mr. S. Mills, Clerk to the Council, Council Offices, Radcliffe, on payment of 1*l.* 1*s.*

✱ OCTOBER 26.—**Leyton.**—ELECTRIC LIGHT AND HOT-WATER APPARATUS.—The Leyton U.D.C. invite tenders for installing the electric light and hot-water apparatus at Canterbury-road School. See advertisement in this issue for further particulars.

✱ NOVEMBER 1. — **Southampton.** — BRIDGE. — The Southampton C.C. invite tenders for erection of Timsbury Bridge. See advertisement in this issue for further particulars.

NOVEMBER 2. — **London.** — BRIDGE. — The London C.C. invite tenders for the reconstruction of the bascule bridge carrying Creek-road over the Deptford Creek, Greenwich. Persons desiring to submit tenders may inspect the drawings and obtain the specification, etc., on application to the Chief Engineer of the Council, Mr. Maurice Fitzmaurice, C.M.G., at the County Hall, Spring-gardens, S.W., upon payment to the Cashier of the Council of the sum of 3*l.*

NOVEMBER 9.—**Antwerp.**—CONSTRUCTION OF A DRY DOCK.—The College des Bourgmestre et Echevins invite tenders for the construction of a dry dock and quay wall at Quai Est (No. 61) of the Lefebvre Basin. Estimate, 4,361,000 francs. Deposit, 500,000 francs. Plans and specifications can be seen at Room 4 and at the Secretary's office, Hôtel de Ville. Price of specification, 5 francs.

NO DATE.—**Alnwick.**—TROLLEY LINE, ETC.—Tenders wanted for supplying and laying for temporary use about 200 yds. of trolley line and bogies. Messrs. Michie & Co., seed merchants and nurserymen, Market-place, Alnwick.

MISCELLANEOUS.

OCTOBER 11. — **Barrow-in-Furness.** — WATERING VAN.—The Corporation invite tenders for a tramway watering van; capacity, 2,000 gallons. Drawing, etc., may be obtained at the Borough Engineer's office, Town Hall, Barrow-in-Furness.

OCTOBER 11.—**Itchen.**—CARTING.—Itchen U.D.C. invite tenders for carting gravel. Further particulars may be had on application to Mr. T. A. Collingwood, the Council's Surveyor, at his office, Portsmouth-road, Woolston.

OCTOBER 11. — **Manchester.** — ASPHALTING.—Manchester Education Committee invite tenders for asphalting the playgrounds at the Ardwick Municipal School, Devonshire-street, Ardwick, and the City-road Municipal School, City-road, Hulme, Manchester. Bills of quantities may be obtained at the Education Offices, Deansgate, Manchester, on a deposit of 1*l.* 1*s.* Cheques to be made payable to the Accountant, Education Offices, Deansgate, Manchester.

OCTOBER 11. — **Steyning East.** — ROAD ROLLER.—The R.D.C. invite tenders for the hire of a steam road roller and scarifier. Specification, etc., can be obtained of Mr. G. W. Warr, Surveyor to the Council, Town Hall, Southwick.

OCTOBER 12.—**Stourbridge.**—RAILWAY WAGONS.—Stourbridge Gas Committee invite tenders for ten 10-ton railway wagons. Specification and all particulars on application to Mr. Charles H. Webb, Engineer and Manager, Gas Works, Stourbridge.

OCTOBER 13.—**Handsworth.**—CABLE.—Handsworth U.D.C. Electric Supply Department invite tenders for the supply of low-tension feeder and distributor cables. Specification, etc., can be obtained on application to the Generating Station, Soho-road, Handsworth.

✱ OCTOBER 14.—**West Ham.**—POISON CUPBOARDS.—The West Ham Guardians invite tenders for supply of twenty-seven poison cupboards at the Infirmary. See advertisement in this issue for further particulars.

OCTOBER 15.—**Darlington.**—FURNITURE. — Darlington Education Committee invite tenders for:—(1) School furniture; (2) disinfectant soap and fluid. Schedules and particulars may be obtained from Mr. A. C. Boyde, Secretary.

OCTOBER 15. — **Kingstown.** — FENCE, ETC. — The Kingstown U.D.C. invite tenders for (1) the supply of 210 ft. (lineal) of cast-iron fence, in accordance with plans, etc., which can be examined in the Surveyor's office, Town Hall, Kingstown; also for the supply of 300 ft. (lineal) of wrought-iron fence and for 210 ft. (lineal) of dog wire; (2) for the formation of ornamental grounds at the Victoria Beach, in accordance with drawings, etc., which can be examined in the Surveyor's office, Town Hall, Kingstown.

OCTOBER 16.—**Abergavenny.**—GLAZING.—The Corporation invite tenders for reglazing skylight of the General Market with puttyless glazing. Specification may be had of the Borough Surveyor, Abergavenny.

OCTOBER 16. — **Belfast.** — TRAMWAY POLES. — The Tramways and Electricity Committee of the Belfast Corporation invite tenders for tramway poles, bases, collars, finials, and wrought-iron work. Specification (No. I. 9), with form of tender and general conditions of contract, may be obtained from Mr. Thomas W. Bloxam, M.Inst.E.E., City Electrical Engineer, Corporation Electricity Works, East Bridge-street, Belfast, on making a deposit of 1*l.* 1*s.* Extra copies may be obtained at 10*s.* each, which is not returnable.

OCTOBER 16. — **Brumby and Frodingham.** — STREET LIGHTING, ETC.—The U.D.C. of Brumby and Frodingham invite tenders for lighting their streets by means of electricity. Specification, etc., may be obtained on payment of 10*s.* 6*d.* on application to Mr. Joe Green, Surveyor, Council Offices, Frodingham, Scunthorpe, Lincolnshire.

OCTOBER 18. — **Elgin.** — CARTING.—Tenders are wanted for carting contract for year 1909-10. Specification may be seen, and schedule obtained, at the Burgh Surveyor's Office.

OCTOBER 20. — **Hackney.** — FURNITURE, ETC. — The Guardians of the Hackney Union invite tenders for the supply of furniture, etc., for the new pavilion "D" at their infirmary, High-street, Homerton, N.E. Tender forms, with full particulars, may be obtained on written application to Mr. Frank R. Coles, Clerk to the Guardians, Hackney Union, Homerton, N.E.

OCTOBER 21.—**Wandsworth.**—BOILING PANS.—The Guardians invite tenders for the provision of two boiling pans and repairs to others at the kitchen of the workhouse, Swaffield-road, Wandsworth. The specification and form of tender may be obtained at office of Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

✱ OCTOBER 26.—**Leyton.**—SCHOOL FURNITURE, ETC.—The Leyton U.D.C. invite tenders for the school furniture and fittings required for two schools. See advertisement in this issue for further particulars.

OCTOBER 30.—**Durham.**—DESKS, ETC.—The Education Committee of the C.C. of Durham invite tenders for a two years' supply of desks and other furniture. For particulars of requirements apply to Mr. A. J. Dawson, Clerk to the Education Committee, Shire Hall, Durham.

PAINTING, etc.

OCTOBER 9. — **Ashington.** — PAINTING.—Ashington Industrial Co-operative Society require tenders for the painting of the whole of their premises at Ashington, Hirst, and Seaton Hirst; also thirty-three cottages. Mr. John Magin, Secretary.

OCTOBER 11.—**Barrow-in-Furness.** — PAINTING. — The Corporation invite tenders for painting of finger-posts, motor-car signs, and public seats. Particulars may be obtained from the Borough Engineer's office, Town Hall.

OCTOBER 11. — **Nottingham.**—EXTERNAL PAINTING, VICTORIA BATHS, SNEINTON.—The Public Baths Committee of the Nottingham Corporation invite tenders for the external cleaning and painting at the Victoria Baths, Sneinton, Nottingham. Specifications, etc., may be obtained from Mr. Frank B. Lewis, City Architect, Guildhall, on the payment of a deposit of 1*l.* 1*s.*

OCTOBER 13.—**Manchester.**—PAINTING.—The Parks Committee invite tenders for painting lodges, railing, etc., at Philips Park. Specification may be obtained at the office of the City Architect, Town Hall, upon payment of 10*s.* 6*d.* All cheques or postal orders to be made payable to the order of the "Corporation of Manchester."

OCTOBER 14. — **Bournemouth.** — PAINTING.—The Bournemouth T.C. invite tenders for painting the pavilions, cottage, and fences in parks and pleasure grounds, and other works in connexion therewith. Full particulars, forms of tender, and specification can be obtained of Mr. F. W. Lacey, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Offices, Bournemouth, provided that the sum of 1*l.* 1*s.* has been previously deposited.

OCTOBER 18. — **Harrow.** — PAINTING.—The Harrow Burial Board invite tenders for the notsige painting of the buildings at the cemetery. Particulars can be obtained from Mr. J. Saunders at the burial ground.

NO DATE.—**Liverpool.**—PLUMBING.—Plumbing required at "Renghaw"-street skating rink. Persons desiring to tender for labour and materials complete to send in to Mr. G. H. Parker, manager.

ROADS, SANITARY, AND WATER WORKS.

OCTOBER 11. — **Wickford.** — SEWER WORKS. — The R.D.C. of Billericay invite tenders for providing and laying about 750 yds. of 6-in. and 7-in. stoneware pipe sewer, with manholes in connexion therewith, at Wickford; also for the construction of a sludge-well at the sewage disposal works there. Plans, etc., can be seen at office of Mr. C. Edgar Lewis Clark to the Council, New-road, Brentwood. Quantities and form of tender can be obtained from Mr. R. J. W. Layland, Surveyor, of Southgreen, Billericay, upon payment of the deposit of 1*l.* 1*s.*

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 12.—**Tideford.**—SEWER WORKS.—The St. Germans R.D.C. invite tenders for providing and laying about 134 yds. of 6-in. stoneware sewer pipes at Tideford, St. Germans, and for providing and laying about 650 yds. of 1½-in. water pipes at Tideford. Plans, etc., may be seen at the office of Mr. Fred. Et. Cleverton, Clerk, 4, Buckland-terrace, Plymouth.

OCTOBER 13.—**Clydach-on-Tawe.**—SEWERAGE AND SEWAGE DISPOSAL WORKS.—Pontardawe R.D.C. invite tenders for the construction of about 9,700 yds. of 15-in., 12-in., and 9-in. diameter cast-iron and stoneware pipe sewers at Clydach-on-Tawe. Drawings may be seen, and specification, etc., obtained, at the office of Mr. John Morgan, Engineer to the Council, at Pontardawe, on deposit of a five-pound Bank of England note.

OCTOBER 13. — **Newport.** — STREET WORKS. — The Corporation require tenders for the carrying out of private street works in Arundel-road (part 1), Alderney-street, Wingate-street, St. Vincent-road (part 2), Carisbrooke-road (part 1), and Wolseley-street (part 2), in accordance with plans, etc., to be seen at the office of the Borough Engineer, from whom bills of quantities may be obtained upon production of the receipt of the Borough Treasurer for the sum of 1*l.* 1s. (for all or any of the above-named streets).

OCTOBER 13. — **Whiston.** — ROAD WORKS.—Whiston R.D.C. invite tenders for the works in connexion with forming, levelling, kerbing, channelling, metalling, and making good the street known as Ditton New-road. Plans, etc., may be seen, and bills of quantities obtained, on application at the office of Mr. R. J. Knapman, Surveyor to the Council, Whiston, Prescot, on the payment of a deposit of 1*l.* 1s.

OCTOBER 14.—**Lancaster.**—SEWER.—For laying of an earthenware pipe sewer from Lunecliffe-road in Stodday to Bowerham-road for the Streets Committee. Plans, etc., may be seen, and quantities, etc., obtained, at the office of Mr. John C. Mount, Borough Surveyor.

OCTOBER 14.—**Muirend, Cathcart.**—ROADS, ETC.—The directors of the Caledonian Railway Company invite tenders for the work to be executed in the formation of new roads and sewer near Muirend, Catheart. Drawings may be seen at the office of Messrs. Formans & M'Call, C.E., 160, Hope-street, Glasgow, where copies of the specification, etc., may be obtained on payment of 2*l.* 2s.

OCTOBER 14.—**Oldham.**—SEWERING, ETC.—The Surveyors Committee invite tenders for sewering, paving, and completing of roads. Plans, etc., can be seen, and quantities, etc., obtained, at the office of the Borough Surveyor.

OCTOBER 16.—**Doncaster.**—SEWERAGE FOR BENTLEY. —Doncaster R.D.C. invite tenders for the execution of an extension scheme of main sewerage for Bentley, near Doncaster. Names and addresses to Messrs. D. Balfour & Son, civil engineers, 3, St. Nicholas-buildings, Newcastle-on-Tyne, engineers for the work, accompanied by a cheque for 5*l.*

OCTOBER 16. — **Evesham.** — REINFORCED CONCRETE ROOF FOR SERVICE-WATER RESERVOIR.—The T.C. of the Borough of Evesham invite tenders for the construction of a reinforced concrete roof, supported on columns, etc., for their new open service-water reservoir (capacity two million gallons). Specifications, etc., may be seen at the Borough Surveyor's Office, Town Hall, Evesham.

OCTOBER 16. — **Teignmouth and Shaldon Bridge.**—REMETALLING.—Tenders are invited for remetalling of the bridge. For specification and particulars apply H. A. Schank, manager, Teignmouth.

OCTOBER 18.—**Chadderton.**—STREET WORKS.—For sewering Gaythorne-street and sewering, paving, etc., Taylor-street, Wood-street, and Simpson-street, for the Chadderton U.D.C. Particulars may be obtained at the Surveyor's office, Town Hall, Chadderton.

OCTOBER 18. — **Rothwell.** — STREET WORKS. — For (1) levelling, paving, etc., Cecil-street, Rothwell; (2) improvement of Cecil-street, Rothwell; (3) re-erection of fire-station. Plans may be seen, and specifications, etc., obtained, from Mr. Thomas Crowther Betts, Surveyor, Council Offices, Market House, Rothwell, on depositing 1*l.* 1s. in respect of each contract.

OCTOBER 18.—**Spennymoor.**—SEWERAGE WORKS.—Spennymoor U.D.C. invite tenders for :—(*a*) Laying of a new concrete kerbed and flagged footpath, on the east side of Catherine-street, Spennymoor; (*b*) construction of a 6-in. pipe sewer from the main sewer near Ox Close Farm to Whitworth Cottages, Spennymoor. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. C. R. Spencer, Surveyor to the Council, Spennymoor.

OCTOBER 19. — **Bushey.** — STREET WORKS. — The U.D.C. invite tenders for making up Vernon and Beechcroft roads. The plans, etc., may be inspected, and copies of the bill of quantities, etc., obtained, on application to Mr. Ernest E. Ryder, Surveyor, at the Council Offices, on payment of the sum of 2*l.* 2s.

OCTOBER 19. — **Chislehurst.** — ROAD WORKS. — For making-up of Walden-road and Queen's-road and improvements in Park-road, for the U.D.C. Forms of tender etc., can be obtained at the Council Offices, Church-row, Chislehurst, on payment of the sum of 1*l.*

OCTOBER 21.—**Abertridwr.**—ROAD, ETC.—Constructing a road, lanes, and drainage at Abertridwr. Bills of quantities may be obtained, and plans, etc., may be seen, at the offices of Mr. Illtyd Thomas, F.S.I., 17, Quay-street, Cardiff.

OCTOBER 21. — **Croydon.**—SEWER WORKS.—Croydon R.D.C. invite tenders for the construction of about 4,300 ft. of 9-in. pipe sewer in the Parish of Coulsdon, and about 12,000 ft. in the Parish of Beddington, with manholes, etc. Plans and specifications prepared by Mr. R. M. Chart, F.S.I., Surveyor, can be inspected at the Council's Offices, Katharine-street, Croydon, and copies of quantities, etc., obtained, on depositing the sum of 5*l.*

OCTOBER 25.—**Hornsey.**—ROAD WORKS.—The T.C. invite tenders for sewering, levelling, paving, metalling, kerbing, channelling, and making good Harringay Park (second section), Stanhope-gardens, and Stormont-road. Forms of tender, etc., and particulars can be obtained from Mr. E. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, Highgate.

NOVEMBER 1. — **Minehead.** — WATERWORKS.—Minehead U.D.C. invite tenders for the execution of certain extensions and alterations to their waterworks in the parishes of Minehead Without, Dunster, Carhampton, and Withycombe, in accordance with the plans, etc., prepared by their engineers, Messrs. A. P. I. Cotterell & Carr, of 26, Victoria-street, Westminster, and 28, Baldwin-street, Bristol. Plans may be seen at the offices of the Engineers, 28, Baldwin-street, Bristol, and at the office of the Surveyor to the Council, at Minehead. Copies of the specification, etc., may be obtained from the engineers on payment of the sum of 3*l.* 3s.

* NOVEMBER 5. — **Bournemouth.** — DESTRUCTOR.—The Bournemouth T.C. invite tenders for construction of six cells as additions to existing destructor at Bournemouth. See advertisement in this issue for further particulars.

NOVEMBER 15. — **Newtownards.** — SEWERAGE WORKS.—The Newtownards U.D.C. invite tenders for the construction of a complete sewerage scheme for the town of Newtownards. Plans, etc., may be seen, and a copy of the specification, etc., can be obtained, upon payment of 1*l.* 1s. (which will not be returned) at the office of the engineers, Messrs. Swiney & Croasdaile, MM.Inst.C.E., Avenue-chambers, Belfast. Also at the office of Mr. H. McCartney, Clerk of Council, Town Hall, Newtownards.

STONES, MATERIAL, AND STORES.

OCTOBER 11.—**Farnborough, Kent.**—ARTICLES.—Tenders are invited for the supply of goods and articles to the Children's Home, Farnborough, under the following heads :—(1) Furniture, (2) fireguards, (3) joinery. Forms of tender may be obtained on application at office of Mr. Edward Haslehurst, Clerk to the Bromley Guardians, Union Offices, Park House, Bromley, Kent, or by forwarding a stamped addressed foolscap envelope.

OCTOBER 11.—**Kingston-upon-Thames.**—GRANITE. —The Corporation invite tenders for the supply of about 5,000 tons, more or less, of Guernsey, Quenast, or other granite. Forms to be obtained of the Borough Surveyor, Mr. R. Hampton Clucas, at the Municipal Offices.

OCTOBER 11.—**Steyning.**—GRANITE.—Steyning East R.D.C. invite tenders for the supply of 250 tons of granite and 50 tons of granite chippings. Form of tender can be obtained on application to the Surveyor to the Council (Mr. G. W. Warr, Town Hall, Southwick).

OCTOBER 12.—**Holme Cultram.**—BROKEN STONES FOR ROAD REPAIRS.—The Holme Cultram U.D.C. invite tenders for the supply and delivery of 800 tons of macadam. Also to be let, the rolling in of road metal. Particulars and forms of tender may be had on application to Mr. Robert Stubbs, Surveyor, Abbey Town.

OCTOBER 12.—**Welshpool.**—HOSE.—The T.C. invite tenders for the supply of canvas hose, etc. Mr. C. Pryce Yearsley, Town Clerk.

OCTOBER 12.—**Woodbridge.**—FLINTS.—The Woodbridge R.D.C. invite tenders for the supply of 2,000 tons of whole chalk flints. Further information may be obtained of the District Surveyor, G. Cook, Grundisburgh.

OCTOBER 13.—**Rochdale.**—OIL OF VITRIOL.—The Gas Committee invite tenders for the supply of brown oil of vitriol. Mr. Wm. Henry Hickson, Town Clerk, Town Hall, Rochdale.

OCTOBER 14. — **West Ham.** — MOTOR SPIRIT. — The Guardians invite tenders for the supply of motor spirit for a period of twelve months, to be delivered free at the Infirmary, Whipps Cross-road, Leytonstone, N.E. Forms may be obtained on application, or will be forwarded on receipt of a stamped addressed foolscap envelope. Mr. Thomas Smith, Clerk's office, Board-room, Union-road, Leytonstone, N.E.

OCTOBER 15.—**Madras.**—CEMENT.—Tenders are invited for the supply of 1,500 tons of Portland cement for Madras Port Trust. Specification and form of tender can be obtained from Messrs. Rendel & Robertson, 8, Great George-street, Westminster, S.W., on payment of 10s., which will not be returned.

OCTOBER 16.—**Edinburgh.**—BROOMS.—Offers are invited for the supply of 3,000 dozen birch brooms for the year from November 16, 1909, to November 15, 1910. Mr. Thomas Hunter, W.S., Town Clerk, City-chambers, Edinburgh.

OCTOBER 16. — **Glasgow.** — STORES.—Glasgow and South-Western Railway Directors invite tenders for the supply of stores. Detailed schedules and specifications can be obtained on application to Mr. R. F. Harrison, Stores Superintendent, Kilmarnock.

OCTOBER 16. — **Poole.**—PIPES.—The Poole Corporation invite tenders for the supply of cast-iron pipes for the ensuing twelve months. Specification and form of tender may be obtained at the office of the Waterworks Manager, Municipal Buildings, Poole, Dorset.

OCTOBER 16. — **Swindon.**—STORES.—Great Western Railway Directors invite tenders for the supply of stores. Samples and patterns may be seen at the General Stores, Swindon. Specification, with forms of tender, may be obtained at the office of the Stores Superintendent at Swindon.

OCTOBER 16. — **Tredegar.** — ROAD MATERIALS.—The U.D.C. of Tredegar invite tenders for the supply of about 1,500 tons of limestone, 2½ in. gauge; 300 tons of limestone chippings, and 200 tons of limestone gravel. Mr. H. J. C. Shepard, Clark, Tredegar.

OCTOBER 19.—**Wealdstone.**—GRANITE.—Wealdstone U.D.C. invite tenders for the supply of 800 to 900 tons of granite, broken to 2-in. gauge, and 50 to 60 tons of granite chippings. Samples of material to be supplied must be forwarded to Mr. Herbert Walker, C.E., the Council's Surveyor, Wealdstone.

OCTOBER 26.—**Belfast.**—ARTICLES, ETC.—The Belfast Harbour Commissioners invite tenders for the supply of stores, etc., during a period extending from January 1 to December 31, 1910. Special forms may be obtained on application to the Harbour Engineer, Mr. W. Redfern Kelly.

OCTOBER 28.—**Greenwich.**—GRANITE.—Tenders are required for a cargo of about 500 tons Channel Island or genuine Guernsey granite spalls for stone-breaking, Grove Park Workhouse, Lee, S.E. Forms of tender can be obtained on application at the Clerk's Office, Woolwich-road, Greenwich.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*QUANTITY SURVEYOR'S ASSISTANT	Durham C.C.	100*l.* per annum	Oct. 13
*ASSISTANT DRAUGHTSMAN	Jamaica Public Works Dept.	See advertisement in this issue	Oct. 21

Auction Sales.

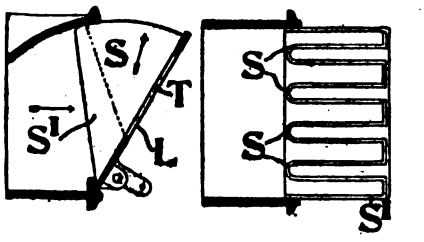
Nature and Place of Sale.	By whom Offered.	Date of Sale.
*NURSERY STOCK, SOUTH WOODFORD—On the Premises	Protheroe & Morris	Oct. 13
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	do.
*BUILDER AND CONTRACTOR'S PLANT AND MCHRY.—Palace Wharf, Crab Tree, Fulham	J. T. Skelding	do.
*FREEHOLD BUILDING PLOTS, CLAPTON COMMON, N.E.—Swan Hotel, Clapton	British Land Co., Ltd.	do.
*STK., MCHRY., PLANT, & EFFECTS OF BLDR., ETC., HOLLOWAY, N.—On the Premises	H. W. Smith	Oct. 14
*FREEHOLD PROPERTY, WALHAM GREEN—At the Mart	Debenham, Tewson, & Co.	Oct. 26
*FREEHOLD BUILDING LAND, ALDERSHOT, FARNBOROUGH, & BISLEY—At the Mart	Farebrother, Ellis, Egerton, Breach, & Co.	Nov. 11

Digitized by Google

PATENTS—*Continued from page 394.*

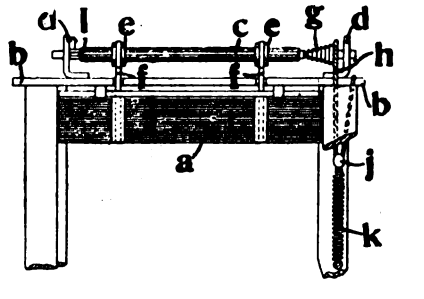
formed with curved recesses I, J, to engage with a bell-crank lever B, which is pivoted at H, and is operated by engagement with a recess M in a plate N secured to the sash. When the sash is swivelled the lever shoots the two bolts into slots K, L in flanges in a metal plate O, inserted in the pulley stile and beads.

8,741 of 1908.—Arthur Rigg: Ventilating device. This relates to a ventilating device in which a current of air passes along a duct, and is deflected upwards into the room by the lid L of an ordinary quadrant ventilator provided with side cheeks S^1. The lid L is provided with slots T, and C-shaped plates S



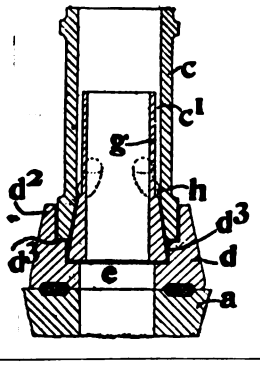
cut at the top to the same radius as the side cheeks S^1 provide passages from the slots T to the top of the ventilator. The main current induces currents up the passages from the part of the room below the ventilator; these currents mingle with the main current at the top of the ventilator, and are carried upwards towards the ceiling.

8,789 of 1908.—Frederick Charles Thompson: Venetian blinds. This relates to a Venetian blind which is adapted to be raised by the action of a spring arranged vertically at the side of the window. The ordinary lifting tapes *f* of the blind *a* are wound upon collars *e* on a roller *c* above the head-board *b*.



A fusee *g* at one end of the roller carries a cord *h*, which passes round a pulley *j* connected to the vertical spring *k*, the end of the cord being secured to the board *b*. The blind is held in any position by a pawl *l* on an end bearing *d*, and is released by slightly pulling the blind downwards and then allowing it to rise.

9,007 of 1908.—William Bartle and John Haworth: Chimney-tops. This relates to an improved form of chimney-top, in which the stack *a* is surmounted by a cap *d* having an aperture *e* and a tube *g* above each flue, and chimney-pots *c* with air-admission openings *h*



secured to the cap over the tubes *g* so as to leave annular spaces c^1 between them. The tubes *g* are either formed integral with the cap *d*, or are secured in recesses d^3 provided in the top of the cap and are tapered externally at the base. The bases of the pots are tapered internally so as to fit over the tubes *g*, and occupy a trough formed by upstanding edges d^2 around the cap. Mortar or the like is used to secure all joints, and to fill the trough flush with the top of the edges d^2. The cap is either sectional or in one piece, and may have rims vertically overhanging the stack.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 21.—By GEORGE LOVEITT & SONS (at Coventry).

Coventry.—Victoria-st., Victoria Vaults p.h., f.	£1,525
28 and 30, Weston-st., f.	335
By KNIGHT, FRANK, & RUTLEY (at Salisbury).	
Steeple Langford, etc., Wilts.—Freehold farms, holdings, cottages, etc., 5,030 a. (in lots)	59,406
September 22.—By ERNEST S. BEARD & DANIELL (at Colchester).	
Colchester.—The Avenue, Derby House and 1 r, 24 p., f.	2,000
September 23.—By MORRIS, MARSHALL, & POOLE (at Welshpool).	
Llandrinio, Montg.—Arddleen Grange, 95 a. 3 r. 25 p., f.	3,350
Arable and pasture land, 32 a. 0 r. 12 p., f.	2,160
By W. J. GRAVER (at Holsworthy).	
Poundstock, Cornwall.—Part of the Poundstock Estate, 520 a., f.	9,393
By G. E. SWORDER & SON (at Bishop's Stortford).	
Great Munden, Herts.—Hatchetts Farm, 238 a. 1 r. 1 p., f.	5,150
Standon, Herts.—Arable and pasture land, 13 a. 3 r. 23 p., f.	410
By RICHARDSON & TROTTER (at York).	
Church Fenton, Yorks.—Freehold farms, 587 a. 3 r. 33 p.	15,878
By KNIGHT, FRANK, & RUTLEY (at Devizes).	
All Cannings, Wilts.—All Cannings Estate, 2,300 a., f. (in lots)	37,968
September 24.—By KINGSTONS & HOLDSWORTH (at Long Sutton).	
Gedney, Lincs.—Freehold farm, 114 a. 0 r. 16 p.	4,090
By G. B. HILLIARD & SON (at Chelmsford).	
Great Baddow, Essex.—Wood Farm, 82 acres, f.	1,670
By WINTERTON & SONS (at Lichfield).	
Lichfield.—83 and 85, Gaia-la., f., q.r. 29*l*.	500
71 and 73, Walsall-rd., f., w.r. 28*l*. 12s.	360
31, George-la., f., w.r. 10*l*. 8s.	111
September 27.—By THORNBOROW & Co. (at Carlisle).	
St. Cuthbert's, Cumberland.—Farm and enclosures, 34 a. 3 r. 35 p., f.	2,725
Carlisle.—Freehold warehouse	125
Stanwix, Cumberland.—Bird-in-Hand Inn, f.	1,575
By FRANK LLOYD & SONS (at Wrexham).	
Worthenbury, Flintshire.—Worthenbury Manor Estate, 142 a. 2 r. 13 p., f.	9,550
September 28.—By FREDERICK WARMAN.	
Highbury.—4, Highbury-hill, u.t. 48 yrs., g.r. 10*l*., p.	600
Holloway.—44, Elthorne-rd. and factory, u.t. 65 yrs., g.r. 5*l*. 10s., gross rental 116*l*. 8s.	600
Highbury.—54, Highbury New-pk., u.t. 40 yrs., g.r. 15*l*., y.r. 80*l*.	450
By GARROD, TURNER, & SON (at Ipswich).	
Mendlesham, Suffolk. — Mendlesham Lodge Farm, 248 a., f.	3,475
Bockings or Wix's Farm, 68 a., f.	750
September 29.—By ARTHUR BARTON.	
Lee.—5, Osberton-rd., u.t. 54 yrs., g.r. 8*l*., p.	250
By DAVID BURNETT, SON, & BADDELEY.	
West Smithfield.—17, Long-la., f., e.r. 120*l*.	1,800
Homerton.—Crozier-ter., f.g. rents 39*l*., reversion in 52 yrs.	680
Battersea.—Prince of Wales-rd., l.g. rents 18*l*., u.t. 71 yrs., g.r. 10*l*.	110
By RAMSAY, WAINWRIGHT, & Co.	
Holloway.—44, Arthur-rd., u.t. 33 yrs., g.r. 6*l*. 6s., p.	195
By WAGSTAFF & SONS.	
Highbury.—2, Bryantwood-rd., u.t 54½ yrs., g.r. 6*l*. 10s., y.r. 40*l*.	325
By DOLMAN & PEARCE (at Camden Town).	
Kentish Town.—75, Marsden-st., u.t. 38 yrs., g.r. 6*l*. 6s., gross rental 45*l*.	180
83, Marsden-st. (s.), u.t. 38 yrs., g.r. 6*l*. 6s., y.r. 40*l*.	295
By NEWLAND, DAVIS, & HUNT (at Newport).	
Undy, Mon.—Cross Farm and accommodation land, 104 a. 3 r. 4 p., f.	5,555
Magor, Mon.—Pasture and garden ground, 4 a. 2 r. 20 p., f.	405
September 30.—By C. C. & T. MOORE.	
Mile End.—75 and 77, Moody-st., f. w.r. 70*l*. 4s.	480
Leyton.—16, Downsell-st., u.t. 66 yrs., g.r. 3*l*. 10s., w.r. 23*l*. 8s	105
Poplar.—Dee-st., plot of land, 2,200 ft., f.	200
7, Gray-st., f., w.r. 18*l*. 4s.	115
23, Susannah-st., f., p.	220
Upton Park.—29 and 31, Bushey-rd., f., w.r. 62*l*. 8s.	500
By WILLIAM STEVENS.	
Dalston.—Docwras Yard, building site, area 5,220 ft., f.	345
28, Colvestone-cres., u.t. 47 yrs., g.r. 7*l*., e.r. 40*l*.	200
De Beauvoir Town.—24, Tottenham-rd. (s.), u.t. 10 yrs., g.r. 5*l*., y.r. 45*l*.	165
By STIMSON & SONS.	
Tooting.—26 to 56 (even), Boscombe-rd., u.t. 95 yrs., g.r. 72*l*., w.r. 457*l*. 12s.	£2,200
Wandsworth.—29, Eglantine-rd., f., p.	670
Herne Hill.—Deronda-rd., l.g. rents 49*l*., u.t. 54 yrs., g.r. 22*l*.	465
Camberwell.—28, Daneville-rd., u.t. 53½ yrs., g.r. 5*l*. 10s., e.r. 36*l*.	250
Balham.—14, Rositer-rd., u.t. 56 yrs., g.r. 7*l*. 10s., e.r. 33*l*.	220
Woking.—Guildford-rd., Whitegates and plot of land adjoining, f.	620
Guildford-rd., The Meadow, 3 a. 1 r. 29 p., f.	760
Guildford-rd., Old Thatched Cottage, Walnut Cottage, The Ferns, Wright's Cottages, and 1 and 2, Kingfield-villas, 2 a. 2 r. 15 p., f.	1,280
Peckham.—124, Gordon-rd., f., y.r. 30*l*. (rising to 40*l*.)	350

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	6	6	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	delivered
Flettons	1	4	6	" at railway depôt.
Best Fareham Red	3	12	0	" " "
Best Red Pressed Suabon Facing	5	0	0	" " "
Best Blue Pressed Staffordshire	3	15	0	" " "
Do. Bullnose	4	0	0	" " "
Best Stourbridge Fire Bricks	3	14	0	" " "
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Best Dipped Salt Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft. average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "

	s.	d.	
Ancaster in blocks	1	10	per ft. cube deld. rly dep.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks	2	4	" "
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "

Digitized by Google

STONE (*continued*).

HARD YORK—	s.	d.	
Scappled random blocks 6 in. sawn two sides landings to sizes (under 40 ft. super.)	3	0	per ft. cube, del. rly. dep
	2	8	per ft. super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	13	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000 at rly. dep.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
3 in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft 4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Battens 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	20	0	0
3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—First white deals, 3 in. by 11 in.	14	10	0	15	10	0
" " 3 in. by 9 in.	13	10	0	14	0	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
" " 3 in. by 9 in.	12	10	0	13	10	0
Battens	10	0	0	11	0	0
Pitch-pine: deals	18	0	0	21	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak logs—Large, per ft. cube	0	3	0	0	3	9
Small " "	0	2	6	0	2	6

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £	s.	d.	£	s.	d.
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½
¼ in. do. do.	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak per load	17	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0
Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. " "	0	14	0	0	18	0
¾ in. by 7 in. white " "	0	10	0	0	11	6
1 in. by 7 in. " "	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	10	0	0
Flitch Plates	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	8	10	0

METALS.

	Per ton, in London. £	s.	d.	£	s.	d.
IRON—						
Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars"	10	10	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
" " Galvanised	17	0	0	—		

(*And upwards, according to size and gauge.)

Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0	—		
" " 24 g.	10	15	0	—		
" " 26 g.	12	5	0	—		
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	—		
Ordinary sizes to 22 g. and 24 g.	15	10	0	—		
" " 26 g.	14	10	0	—		
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0	—		
" " 22 g. and 24 g.	18	10	0	—		
" " 26 g.	20	0	0	—		
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	—		
" " 22 g. and 24 g.	14	15	0	—		
" " 26 g.	16	5	0	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	—		
" " " 26 g.	15	0	0	—		
Cut Nails, 3 in. to 6 in.	10	10	0	11	0	0

(Under 3 in., usual trade extras.)

LEAD, &c.	Per ton, in London. £	s.	d.	
LEAD—Sheet, English, 3lb. and up.	16	15	0	—
Pipe in coils	17	5	0	—
Soil pipe	19	5	0	—
Compo pipe	20	5	0	—
ZINC—Sheet—				
Vielle Montagne	27	5	0	—
Silesian	27	0	0	—
COPPER—				
Strong sheet per lb.	0	1	0	—
Thin " "	0	1	1	—
Copper nails " "	0	0	10	—
Copper wire " "	0	0	10	—
BRASS—				
Strong Sheet " "	0	0	11	—
Thin " "	0	1	0	—
TIN—English Ingots " "	0	1	4	—
SOLDER—Plumbers' " "	0	0	6½	—
Tinmen's " "	0	0	9	—
Blowpipe " "	0	0	11	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d " "
" fourths	4½d. " "
Fluted Sheet, 15 oz.	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅛ "	2⅝d. " "
¼ "	2⅝d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	3
" " in barrels	"	0	2	4
" " in drums	"	0	2	7
Boiled " in barrels	"	0	2	7
" " in drums	"	0	2	10
Turpentine in barrels	"	0	3	5
" in drums	"	0	3	7
Genuine Ground English White Lead	per ton	20	0	0
Red Lead, Dry	"	19	10	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 a.m. *on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

BARKING.—For the laying of 264 lineal yds. 9-in. diameter patent jointed stoneware pipe sewer, and 404 lineal yds. of 9-in. diameter stoneware pipe surface water drain, with manholes and catchpits in Hertford-road, within the Urban District of Barking Town, for the Urban District Council of Barking Town. Mr. C. F. Dawson, Surveyor to the Council, Public Offices, Barking:—

W. H. Hyde & Co., Norwood Junction, S.E.* £407 4 10

BARKING.—For executing private street works at Bifons-street (eastern portion), for Barking Town Urban District Council. Mr. C. F. Dawson, Surveyor to the Council, Public Offices, Barking:—

Wilson Border & Co., Vine-street, Romford* £258 13 5

BARNOLDSWICK.—For street works, Valley-road, Calf Hall-road, and Peter-street, for the Urban District Council. Mr. W. Bennett, Engineer and Surveyor, Town Hall, Barnoldswick:—

J. Johnson ..	£1,501	5 1	Ward & Tetley £1,437 19 8
T. Wade	1,445	3 3	W. Townson.. 1,363 12 7
Muff & Randell	1,444	9 3	J. Heap..... 1,311 16 0

Calf Hall-road.

J. Green & Sons £1,270 5 7

Valley-road and Peter-street.

E. Smith £1,251 15 1

BERMONDSEY.—For repaving Parish-street and portions of Great Maze Pond for the Borough Council. Mr. R. J. Angel, M.Inst.C.E., Borough Surveyor:—

	Parish-street.	Great Maze Pond.
H. Woodham & Sons	£706 3 0	£806 5 2
Complete Wood Flooring Co., Ltd.	577 4 3	682 19 7
J. Mowlem & Co., Ltd.	540 15 7	628 9 9
Acme Flooring and Paving Co., Ltd.	520 6 5	594 18 8
W. Griffiths & Co., Ltd.	499 18 5	565 12 2
R. J. Angel (Borough Surveyor)*	499 15 5	564 15 7
Improved Wood Pavement Co., Ltd.	485 3 1	538 11 0

BOWBURN.—For erecting a small Wesleyan methodist chapel, etc., at Bowburn Colliery. Mr. J. Wilson Hays, architect, Wingate, Co. Durham:—

M. R. Draper & Sons	£625 0 0	J. Ponting	£494 4 0
J. Oliver	582 13 0	F. H. Lodd & Son	496 1 8
G. W. Lazenby	560 0 0	Makepeace & Valks, Trimdon Colliery, Co. Durham‡	490 17 0
G. Wall.....	551 19 7		
Wood Bros.	521 0 0	Woods & Adams	456 0 0
T. Sanderson & Son	504 17 5		

‡ Accepted subject to amendment, £488.

CAMBRIDGE.—For additions to the Sewage Pumping Station, Riverside, for the Corporation:—

Clark & Sons, Cambridge* £588 10 0

[Accepted tender of five.]

FULWOOD.—For the works required in levelling, paving, flagging, macadamising, etc., and making good Plungington-road and Brook-street, from the Township Boundary to Lytham-road; Lytham-road, from Plungington-road to Brook-street; and Lytham-road, from Brook-street to the L. and N. W. Railway, for the Urban District Council:—

R. Bashall, Holstein-street, Preston* £2,199 0 2

DAGENHAM.—For constructing drain connexions to sewers, for Romford Rural District Council. Mr. W. J. Grant, Surveyor, Victoria-chambers, Romford:—

*H. F. White, Hornchurch, at schedule rate.

Digitized by Google

GRAYS.—For additions and alterations at Duvals, Meesons-lane, Grays, for Mr. E. W. Brooks. Mr. C. M. Shiner, 10, John-street, Adelphi, W.C., and Gate House, Grays:—

J. Lawrence	£273 15	Brown Bros., Bridge-road, Grays*	£168
G. Brown	185 0		

HARLINGTON (Beds.).—For proposed cottages, Harlington, Beds., for Mr. C. Franklin, J.P. Mr. W. B. Stonebridge, architect, Woburn Sands:—

	Tenders.	Old Material.
W. T. Sharpe	£549	—
G. Botaford	549	£10
Putman & Richardson	449	12
C. Sharp*	410	—

HASTINGS.—For alterations and repairs at the Union Offices, 11, Wellington-square, for the Guardians. Messrs. Jeffery & Son, architects, 5, Havelock-road, Hastings:—

J. Fair	£2,063 0 0	J. Hayhurst & A. E. Richford	£218 11 6
F. Thorpe	264 14 0	G. & P. J. Fryer	212 0 0
W. Goodwin	231 4 0	J. Harvey	204 6 6
F. Barter	230 0 0	Geary & Co., 159, Bexhil-road*	165 0 0
J. Lester & Son	227 0 0		
H. Burton	220 0 0		

LONDON.—For alterations and additions at the police-station at Kennington-road, S.E. Mr. J. Dixon Butler, F.R.I.B.A., architect, Surveyor to the Metropolitan Police, New Scotland-yard. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

C. Ansell	£8,080	Lathey Bros.	£7,597
Harris & Wardrop	7,823	F. C. Minter	7,590
Shurmur & Sons	7,790	F. & H. F. Higgs	7,513
Smith & Son	7,681	Sabey & Son	7,467
Higgs & Hill, Ltd.	7,644	Rice & Sons	7,272
Holloway Bros.	7,600	Mowlem & Co., Ltd.	7,122

NORTHALLERTON.—For sewage disposal works, Contract No. 1, for the Urban District Council. Messrs. Willcox & Raikes, engineers, 63, Temple-row, Birmingham:—

Forth & Co., 6, St. James-street, Derby* .. £9,433

[Twenty-two tenders.]

PONTYPRIDD.—For street works, lane at rear of Berw-road, for the Urban District Council. Mr. W. E. Lowe, Engineer and Surveyor, Municipal-buildings, Pontypridd:—

H. Murray, Wood-road, Pontypridd* £237 19

PWLLGWANN.—For street works, Seaton-street, for the Pontypridd Urban District Council. Mr. W. E. Lowe, Engineer and Surveyor, Municipal-buildings, Pontypridd:—

R. Webb, Abercynon* £507 14

PWLLGWANN.—For street works, lane at rear of Barry-terrace, for Pontypridd Urban District Council. Mr. W. E. Lowe, Engineer and Surveyor, Municipal-buildings, Pontypridd:—

A. G. Collins & Co., Cadoxton, near Barry* .. £220 16 9

ROTHERHAM.—For extention of Dalton and Thrybergh sewage works, for the Rural District Council:—

C. Bushby & Sons	£2,848	H. G. Buckley	£2,471
A. Stark & Sons	2,771	A. J. Cottle	2,439
E. E. Dickinson	2,676	Wellerman Bros.	2,353
H. Ashley	2,675	W. M. Beeden	2,336
J. Cooper	2,570	W. H. Trehern	2,317
A. Braithwaite & Co.	2,569	T. Gray & Sons, Tinsley, near Sheffield*	2,126
W. Morley & Sons	2,564		

SCUNTHORPE.—For the erection of a Primitive Methodist Institute. Mr. W. H. Buttick, P.A.S.I., architect, Scunthorpe:—

Wilson	£813 18	H. J. Thompson, Scunthorpe†	£699 0
Quible	750 0	Smith Bros.	671 11
Pallister	710 0	Crossland	595 0
Buckley	708 0		

[Architect's estimate, £750.]

SILSDEN.—For construction of additional tanks, channels, etc., at the Sewage Disposal Works, for the Urban District Council. Messrs. Chas. Gott & Sons, Engineers to the Council, 18, The Exchange, Bradford:—

A. Stark & Son	£1,585 5 9	W. Morley & Sons	£1,264 0 0
C. Bushby & Sons	1,527 17 0	A. Schofield	1,239 10 5
G. Vickers	1,442 4 8	W. Barrick	1,219 4 4
A. Graham & Sons	1,379 0 0	H. Barker	1,204 17 10
T. E. Sugden	1,320 4 8	W. Baker	1,180 5 1
Ward & Tetley	1,318 4 0	W. Brigg, Bradford*	1,178 6 0

SWADLINCOTE.—For erecting a firehose station, stores, and public urinal in High-street, Newhall, for the Urban District Council. Mr. A. J. Mason, Town Engineer and Surveyor, Council Offices, Swadlincote:—

Hibberd & Hudson, Sunnyside Newhall, near Burton-on-Trent* £153

TREHAFOD.—For private street works, Fountain-street, for Pontypridd Urban District Council. Mr. W. E. Lowe, Engineer and Surveyor, Municipal-buildings, Pontypridd:—

R. Pomeroy & Co., St. Mary-street, Cardiff* .. £435 4 10

WEST THURROCK.—For restoring the tower of St. Clement's Church, West Thurrock. Mr. Christopher M. Shiner, architect, John-street, Adelphi, and at Grays:—

Hammond & Sons	£149 0
H. J. Carter, Grays*	128 16

WOLVERHAMPTON.—For high school for girls, for the Staffordshire County Council and the County Borough of Wolverhampton. Messrs. J. Hutchings, Stafford, and Fleeming & Son, Wolverhampton, joint architects. Quantities by Messrs. Vale & Kingsford, Wolverhampton:—

Hickin	£21,600 0 0
Thompson	21,333 0 0
F. Lindsey Jonas	20,912 0 0
Wilson & Son	20,105 0 0
Bowen & Son	19,893 0 0
Whitehouse & Son	19,647 0 0
Willcock & Co.	19,643 0 0
Speake & Son	19,600 0 0
T. & S. Ham	18,980 0 0
Cave & Son	18,740 0 0
Gough & Son	18,700 0 0
H. Lovatt, Ltd., Wolverhampton*	18,521 0 0
Heating.	
Dargue, Griffiths, & Co.	1,339 0 0
Killick & Cochran	1,230 0 0
Ashwell & Nesbitt	1,170 0 0
T. Taylor	1,135 0 0
Brightside Foundry Co.	1,120 0 0
Hadan & Sons	1,070 0 0
Manley & Co., Wolverhampton*	1,016 0 0
Lighting.	
Ellis & Ward	475 5 0
Geary, Adams, & Co.	394 4 6
Dargue, Griffiths, & Co.	360 6 10
Wolverhampton Electric Co.	296 0 0
District Electric Co., Wolverhampton*	260 0 0

WOOTTON (Beds.).—For proposed cottages, Wootton Green, for Mr. W. H. Anstee. Mr. W. B. Stonebridge, architect, Woburn Sands:—

	For One Pair.	For Three Pairs.
R. Walker	£499 0	£1,490
R. Jeakings	475 10	1,416
A. J. Dawes	473 0	1,401
Jacobs & Barton	455 0	1,325
G. A. Francis	430 0	1,260
E. Jones (Kempston)	390 0	1,150

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

Grey Stone Lime,
PORTLAND CEMENT, WHITE CHALK LIME, PLASTER, SAND, SIRAPITE.
Delivered in truck loads any Railway Station, or by vans in London.
JOSEPH S. PETERS,
Address:—417, OLD KENT ROAD.
Telephone: No. 3081 Hop.
Works:—MERSTHAM, SURREY.

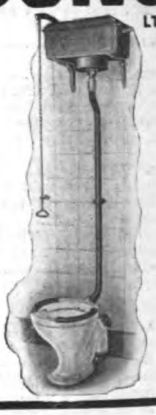
PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone Nos. 511 and 831 Deptford.

Registered Trade Mark.
Poloneeau Asphalte.

PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE,
WHITE SILICA PAVING.
SEYSSEL ASPHALTE (*Direct from the Mines*).

JOHN BOLDING & SONS LTD.
MANUFACTURERS OF
WATER CLOSETS, BATHS, LAVATORIES, etc.
IRON AND BRASS FOUNDERS.
EXTENSIVE SHOWROOMS. INSPECTION INVITED.
JUST PUBLISHED
NEW ILLUSTRATED CATALOGUE.
GROSVENOR WORKS, DAVIES STREET, LONDON, W.

No. 86.
Bolding's Fireclay Pedestal "School" Closet, with trap, inspection cap, and screw; inserted hardwood rim seat; 2 gall. C.I. "LETA" syphon flushing cistern, brackets, galvanised chain, pull and guide, and galvanised W.I. flushing pipe.



EWART'S
Cures in 19 cases out of 20.
"EMPRESS"
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
Established 1834.
Telephone: 751 North.
SMOKE CURE

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3450. OCTOBER 16, 1909.

Contents.

	PAGE
Modern Architectural Development	401
Commons and the Development Bill	402
Notes	403
The Architectural Association	405
The Institute of Builders	408
Chapel of the Pyx, Westminster Abbey	410
The London County Council	411
Architects' Technical Bureau	411
Architectural Societies	411
Meetings	412
The Gradiograph	412
Court of Common Council	412
Fifty Years Ago	412
Illustrations:—	
The New Nave, Hexham Abbey, Northumberland	412
Deptford Branch Library	413
Design for Modelled Lunette	413
Civil and Mechanical Engineers' Society	413
The Association of Municipal and County Engineers	414
Applications under the London Building Acts, 1894 to 1908	417
Competition News	417
Book Received	418
Correspondence:—	
Advertising Boards	418
London and Provincial Builders' Information Centre	418
London County Council Education Committee	418
London and District Borough Councils	418
Master Builders' Associations, etc.	418
Projected New Buildings in the Provinces	418
Metropolitan Asylums Board	419
Metropolitan Water Board	419
General Building News	419
Stained Glass and Decoration	420
Miscellaneous	420
Patents	420
List of Competitions, Contracts, etc., Open	421
Some Recent Sales	423
Prices Current	424
Tenders	425

SUPPLEMENT:—

Reviews of Books.

R. Unwin's "Town Planning in Practice: an Introduction to the Art of Designing Cities and Suburbs"; A. du Cerceau's "French Châteaux and Gardens of the XVIth Century: Reproductions of Contemporary Drawings (hitherto unpublished)"; F. Lenygon's "The Decoration and Furniture of English Mansions During the XVIIth and XVIIIth Centuries"; P. A. Wells and J. Hooper's "Modern Cabinetwork, Furniture, and Fitments"; A. L. Frothingham's "The Monuments of Christian Rome, from Constantine to the Renaissance"; F. W. Woodhouse's "The Churches of Coventry"; H. H. E. Craster's "A History of Northumberland," Vol. IX.; H. H. Statham's "The Organ and its Position in Musical Art"; C. A. Webb's "Valuation of Real Property: A Guide to the Principles of the Valuation of Land and Buildings, etc., for Various Purposes"; C. D. Holley's "The Lead and Zinc Pigments"; J. C. Smith's "Oxide of Zinc: Its Nature, Properties, and Uses"; M. F. Cahill's "The Householder's Duty Respecting Repairs."

Magazines and Reviews.

Illustrations.

New Nave, Hexham Abbey. Mr. Temple Moore, F.R.I.B.A., Architect.

Selected Design for Deptford New Branch Library. Messrs. Castle & Warren, Architects.

Design for Modelled Lunette in Art Gallery. By Mr. W. H. Wright.

Illustration in Text. PAGE

Deptford Branch Library: Alternative Plan 413

Modern Architectural Development.

THE complaint from time to time made by architects that the general public neither knows nor cares anything about the Mother of all the Arts often strikes one as being but the current cant of the profession. Yet, like all cant, the statement is hardly untrue; it is just amorphous, and stands in need of a careful process of crystallisation before it can have appreciable value.

It is well known that once upon a time architecture was one of the polite arts, and was studied by every gentleman who pretended to a liberal education; but that was in the XVIIIth century, when the general condition of society as well as that of building was very different from what it is to-day. Since that time architecture has entered an epoch of transition, the greatest and most far-reaching perhaps that has ever occurred within the range of its history. A bewildering multitude of anomalies and complexities was the inevitable result; uncertainty of taste caused a kaleidoscopic succession of changing fashions; while the exacting requirements of utility and financial economy seemed to be ever set against all æsthetic notions of architecture. Naturally such a period was beyond contemporary comprehension, and when the amateur found himself hopelessly perplexed, it was only to be assumed that his interest in the art would decline.

The transition was a result of that tidal wave of general progress for which the XIXth century is so remarkable, and whose immediate effect upon architecture lay in new conditions of planning, and in a host of purposes that demanded many new types of building quite different from any that had previously existed. Two of its important contributing forces also, the Romantic revival in literature and the advancing science of engineering, had respectively a special influence in the establishment of the Gothic revival (and the Greek revival, too, to a limited extent), and in the introduction into building of the new structural factors, iron and concrete. Altogether it may be taken that three influences came into play—utilitarian, æsthetic, and structural, as they may conveniently be termed. They of course overlap considerably, and it is often impossible exactly to define where one begins and another ends; but in the main there are certain broad developments that are characteristic of each. Utility alone, for instance, has determined the appearance of our railway stations; æsthetics have played a prominent part in the design and disposition of such a building as the Law Courts; and in the modern warehouse, with its extremely slight piers and broad windows, the influence of construction may be seen undiluted.

Roughly speaking, it may be said that the majority of the new types of architectural composition that have come into vogue are the result of sheer practical necessity. In the XVIIIth century it was otherwise. Composition was then almost entirely an external affair, following always two or three stereotyped forms, and it mattered not at all how cramped and inconvenient were the offices of a country mansion so long as its serene and self-complacent symmetry remained undisturbed. Sometimes the kitchen wing had to balance the chapel, and often recourse had to be made to the device of blank windows to overcome a difficulty in planning; but such anachronisms never offended the æsthetic conscience of the day. The utilitarian demands of the XIXth century rendered rule-of-thumb composition no longer possible. The old symmetrical manner of grouping had to go by the board; but it is interesting to observe that the new forms that have taken its place are again symmetrical. In school building, for instance, which has been carefully studied for the past half-century, and entirely from the practical point of view, the general type is that of a central hall, with classrooms arranged symmetrically about it, the whole forming a kind of group quite unlike anything that had existed before. Much the same may be said of hospital design; and here a central administrative block, with four radiating wings containing the wards, as is seen at University College Hospital, is a not uncommon type. A study of French and American railway stations, too, will reveal other new types of symmetrical composition, in which advantage is generally taken of the great station roof to form the central feature in the scheme, but unfortunately the great majority of English stations boast no pretensions to architectural merit.

During the past century the subject of architectural æsthetics has become a very difficult and intricate one, but with the first changes in taste the artistic public was well enough able to keep pace. The Palladian manner of the XVIIIth century, governed as it was by a code

Digitized by Google

of rules as exact as the formula for Augustan drama, had been well understood. After this the Greek revival presented no difficulties, and when the word "Gothic" ceased to imply all that was barbarous and bad, the study of mediæval buildings became the amateur's chief delight. But in spite of all the kindled enthusiasm for Gothic architecture it is curious to observe how persistently absent was the mediæval spirit in all buildings in the revived style. In the early part of the century buildings erected in the Gothic taste often possessed a charm all their own, but these were only so labelled by courtesy. The strictly symmetrical composition, the flat-pitched roof, and the general good proportions were the legacies of the XVIIIth century, while the detail, though by no means always bad, generally betrayed a very superficial knowledge of the work of the Middle Ages. As the century wore on this influence gradually disappeared. Dull books, like Parker's "Glossary" or Rickman's "Gothic Architecture," came to be published, and had a pernicious influence upon art, for not only were they the very negation of the freedom and fancifulness that is the life and breath of all Gothic work, but they also induced an entirely erroneous view of architecture, the one which begins by considering carved ornament and the profiles of mouldings, and often ends there, too.

About the same time (the middle of the century) buildings began much more nearly to approximate to the forms of their mediæval prototypes, but the results were almost always lifeless. The work of the man of real genius, of course, was always distinguished, and sometimes beautiful. A church like St. Mary Abbott's, Kensington, for instance, the work of Sir Gilbert Scott, is quite a fine building; but though its general form is correct enough, it is impossible to find in it the qualities that so appeal to one in the works of the Middle Ages. Ruskin indeed was almost the only man who thoroughly understood mediæval æsthetics. He was able to point out its innermost beauties, but he never seemed quite to realise how wide was the gulf that separated his time from the Middle Ages, and without intending to do so he very clearly demonstrated the impossibility of grafting the practices of XIIIth-century craftsmanship upon the vastly different social conditions of modern times. From the end of the XVIIIth century down to the present day a spirit of restlessness seems to have been undermining all the time-honoured principles of architecture. The Gothic revival meandered gradually through the whole category of architectural styles and wore itself out. By this time the wheel of fashion has completely revolved, and architectural taste is again much the same, though purged of its pedantry, as it was before the age of revivals began. Thus there has been but small definite progress in taste during a period of something more than a hundred years, and indeed the only direct step forward; and this one not without disadvantages, has been the riddance of the too dogmatic rules about design.

But while a great many of the best architects have been wrestling with æsthetics, half-conscious of something out of tune in their art, and of the need for a new style more suited to the changed conditions of life, the influence of the new method of construction with iron and concrete was slowly but surely making itself felt. Here was the real architectural problem of the age and the most important of the three factors at work in the transition. Never before had it been possible to endow buildings with bones. Never before could they have resisted enormous thrusts entirely by the tension of their sinews. The whole system of the new construction differs entirely from that of any previous method of building, and therefore all attempts to combine its full use with the correct interpretation of any historic style of architecture are almost predestined to end in artistic non-success. It is safe to say that in such buildings (and they include the great majority of those erected in towns for commercial purposes during the last sixty years), though many of them are highly meritorious and interesting works, very few will stand in the future among the masterpieces of architecture. Their great achievement is to be found entirely in the strides that have been made in the science of building construction. From the Crystal Palace, finished in 1851, to Messrs. Selfridge's shop is a far cry. During the whole of that period the new construction has been passing through an experimental stage, and though it cannot be said that the perfect type has yet been evolved, the use of iron and concrete is gradually falling into certain stereotyped channels suitable to the various kinds of building. The modern warehouse with its blunt, straightforward expression—lintel upon pier, girder upon stanchion — easily demonstrates the tendency of modern construction to do away with the wall, with continuous support, and to substitute piers; that is to say, to concentrate the support at points. In more purely architectural work, too, the same tendency can be seen. The supports of buildings are again concentrated in piers, decorated to illustrate their function, while all the architectural emphasis in the spaces between is upon the ample decoration of the windows, so that there may be as little apparently unsupported wall space as possible. Before the middle of the present century it seems not unlikely that this new construction will have been thoroughly mastered; and when architects shall have thus gained power over a new technique, a new manner of expression, they will again be able to devote all their energies to artistic creation, and a new and great school of national architecture may again arise.

No school of national art, however, can greatly flourish without the sympathy and support of the nation; and if there is to be fine architecture in England, it must not be because it pleases the fancy of a few to have it, but because it is the desire and pride of the nation. And the surest way to inculcate such a desire is through the medium of education. The value of architecture as an educational factor indeed seems entirely to be overlooked. Apart from its importance to the study of social history, a knowledge of its facts can give a mental training in clearness of thinking and directness of expression that should be of inestimable value.

COMMONS AND THE DEVELOPMENT BILL.

IN our issue of September 25 we drew attention to the necessity of some protection being afforded to commons and open spaces in the compulsory powers conferred by the Development Bill. Clause 19 of the Bill now deals with this question. Subsect. 1 in the first place provides that where any common, open space, or allotment is affected by an order made by the Development Commissioners, the order shall be provisional only, until it is confirmed by Parliament, except where the order provides for a similar area of land equally advantageous to those having rights of common or to the public being given in exchange. The Board of Agriculture and Fisheries is made the authority for determining this question of substitution, and all persons interested are to be given opportunity to raise objections.

This is so far clear, but there are provisos to this clause which involve legislation by reference, and complicate the matter. In the first place, this provision is not to apply to the acquisition of any common land for the purposes of forestry, if reasonable access is granted to the public and the land has not been dedicated to the use of the public and is not a metropolitan common within the terms of the Metropolitan Commons Act, or is not a "common" within the terms of other Acts stated in the Bill.

This provision is also not to apply to land acquired for the construction of a new road or the improvement of an existing road within a rural district, but there is a provision that none of the extra land which the Road Board has power to acquire on each side of a road shall be taken, where that land forms part of a common, open space, or allotment.

The word "common" is defined as including "any land subject to be enclosed under the Inclosure Acts, 1845-1882, and any town and village green"; the expression "open space" means "any land laid out as a public garden or used for the purposes of public recreation and any disused burial ground"; the expression "allotment" means "any allotment set out as a fuel allotment or a field garden allotment under an Inclosure Act."

We have not seen the opinion of the Commons and Footpaths Preservation Society on these clauses, but it is obvious that they necessitate legal advice.

WORCESTER GRAMMAR SCHOOL.—New buildings have been provided for the scholars at the Royal Free Grammar School, Worcester. On the ground floor the extensions provide for a special lecture classroom for physics, and a small room for fifteen boys. There is a new cloakroom having special features, and a classroom has been appropriated for an assistant master's room. Off a new staircase are two new classrooms, and in addition there is an artroom, specially designed with regard to light. Various alterations have also been made to the old buildings. Messrs. Parker & Son have been the architects for the work.

Digitized by Google

NOTES.

Standardisation.

IN the Presidential address of Professor Henry Adams to the Association of Engineers-in-Charge a general review is given of various attempts at the standardisation of measuring instruments and manufactured products employed in architecture and engineering. The valuable work recently performed by the Engineering Standards Committee naturally prompts some appreciative remarks with which we fully concur. One of the most useful specifications issued by the Committee is that on Portland cement, which, as Professor Adams remarks, appeared at a very opportune time for the benefit of those employing reinforced concrete in building construction. We are glad to notice the suggestion that the exhaustive Report on riveted joints made several years ago by a Committee of the Institution of Mechanical Engineers should be remodelled and issued in practical form for the guidance of designers. Notwithstanding the abundant material in that Report, Professor Adams has found it difficult to formulate therefrom any general standard for his own use, an avowal quite sufficient to account for the oblivion which has overtaken the record of a most elaborate investigation.

Concrete Bridges.

WITHIN recent years concrete has become a serious competitor with masonry in the construction of long-span arches. At least nine concrete arches with spans ranging from 187 ft. to 280 ft. have been built on the Continent and in America. Two other notable bridges in the same material are about to be commenced—one of these for the City of Spokane, Washington, containing an arch of 281 ft. span, and the other for the City of Pittsburg, having been designed with a 300-ft. arch. The Rocky River bridge at Cleveland, U.S.A., with the span of 280 ft., is nearing completion at the present time. Several of the structures to which we refer are reinforced to some extent by steel, others being of plain concrete. Although British engineers have not yet attempted any rivalry with their *confrères* abroad in respect of gigantic concrete arches, it must not be supposed that they have neglected the claims of that material in bridge building. Four or five reinforced concrete arches of nearly 100 ft. span have already been constructed; a fine highway bridge was completed last year at Pontypridd with a centre arch of 117 ft. span, and the new bridge commenced at Kilkenny will have the clear span of 140 ft., this being the longest arch in reinforced concrete hitherto undertaken in the United Kingdom.

Wind and Ventilation.

A PAPER by Mr. H. W. Whitten, read to the American Society of Heating and Ventilating Engineers, deals with the effect of wind on heating and ventilating installations. One noticeable effect during the prevalence of wind is the entrance of air through crevices. This is very familiar, but one more apt to be overlooked is the outflow of warmed air through apertures on the sheltered side of buildings owing to the partial vacuum there established. The author describes some typical tests made for the purpose of throwing light upon this effect. In the case of a school building cited it was found that the average loss of air velocity amounted to 477 ft. per minute. Another school building heated and ventilated by the gravity indirect system, showed an average loss of 20 per cent. velocity from the delivery ducts and an addition of 60 per cent. to the discharge velocity in rooms on the windward side, while rooms on the leeward side exhibited an increase of 30 per cent. in the supply velocity and a decrease of 62 per cent. in the discharge velocity. A still more striking demonstration was afforded by the case of a school building where, after stopping the fan and closing the supply ducts as well as all doors and windows, it was found that the volume of air passing through the discharge ducts was equal to the amount for which the fan and supply ducts had been designed to deliver.

The Sioule Gorge Bridge.

THE railway bridge opened in France this week is a remarkable structure crossing the Sioule gorge at the height of some 450 ft. above the ground. The bridge consists of a continuous girder 40 ft. deep, divided into three spans by two intermediate masonry piers 370 ft. high. After work was commenced in 1901 serious trouble arose owing to subsidence below the foundation of one of the abutments, and considerable delay ensued owing to the modifications thereby rendered necessary. The main span is 470 ft. long, each of the outer spans having the length of 380 ft. The task of constructing isolated masonry piers to the height of St. Paul's Cathedral is a sufficiently onerous undertaking apart from the work of building out the main girders and joining their ends together in mid-air. This bridge demonstrates clearly the daring and executive capacity of French engineers, and fully deserves a high place among the greatest works executed in the present age.

Alterations and Additions, Guildhall.

A SCHEME proposed by the City Lands Committee embraces the clearing and opening up of the crypt to serve as an extension of the museum, the erection of a building containing three stories over the library corridor, and the conversion of some of the vaults into strong rooms for the muniments of the Bridge House Estates. The library corridor forms a communication from the porch (1425–1430) to the City library and museum, which was erected in 1869–72, after designs by Sir Horace Jones. Buildings above and on the sides of the porch, obscuring the south elevation of the Guildhall, were added by the younger Dance. The rooms over the porch, and the upper rooms (since removed) over the corridor of the east wing, formed until 1869 an adjunct of the earlier library built in 1828 by W. Mountague, City Architect. The east crypt, one of the few examples extant of mediæval crypts in London, is coeval with the Great Hall, which was begun in 1411, and fairly completed twelve years afterwards. In its restoration, 1851, by J. B. Bunning, City Architect, an entrance was made on the north side; the staircase was constructed last year. It measures 76 ft. by 45 ft. 3 in.; the average height of the arches above the floor is 13 ft. 7 in. Six pillars, each having four clustered Purbeck half-columns, divide the area into three aisles of equal width; the bays also are equal—three from north to south and four from east to west. The vaulting of the four-centred arches has spandrils mainly of chalk and brick; the rib-bosses are richly carved. The old gateway, of about 1420, of the crypt was brought to light two months ago; it was found in good state, with the door-hinges, and traces of the original steps. A flattened doorway opens into the western crypt which, it is believed, appertained to the former Guildhall, which extended as far as Aldermanbury. The vaulting, much damaged by the Great Fire, was replaced with brick walls and vaults to sustain the floor of the hall. Shortly before his death the late Mr. E. M. Borrajo, librarian and curator, began a rearrangement of the multifarious contents stored in the basement of the museum.

St. Mary Aldermary Church, Queen Victoria-street, E.C.

THE Rector of this church appeals for at least 900*l.* wherewith to repair the parapets and other external stonework, which varies from fine sandstone to Bath and Portland. A rebuilding upon the original site was begun by Alderman Kebyll, who died in 1518; the bell-tower, which adjoins the church at the south-west angle and, with the four turrets, rises to a height of 135 ft., was erected in 1629. The tower escaped from the Great Fire; in 1711 the upper stages were reconstructed. It is said that Wren, in rebuilding the main body of the church, was constrained to follow the former Perpendicular Gothic design in terms of the bequest of 5,000*l.* for that purpose. The clustered columns of the nave arcade carry very flat arches slightly pointed; small shafts on the faces of the clearstory form the springing of the elaborate fan groining of the ceiling, which has a middle line of large and deeply indented circular panels with incongruous ornamentation; the aisle ceilings are similar, but have oval panels, whereof two in the north aisle serve for skylights. The church was entirely restored and refitted by Messrs. Tress & Innes in 1876. Some years afterwards Mr. C. Innes carried out structural repairs, and in 1899 he applied Szerelmy's stone liquid to some of the exterior surface. A demolition in 1839–40 of houses for a widening of Watling-street revealed the north side, consisting for its greater part of the original wall up to a string-course beneath the window-sills.

Weymouth and Melcombe Regis School Competition.

AN architect sends us an advertisement which has appeared in a daily paper, inviting architects within the borough concerned to "tender for the architect's work" in connexion with a new Boys' School for St. Mary's Parish, in the borough of Weymouth and Melcombe

Digitized by Google

Regis. This is not an invitation to submit competition designs, from which one is to be selected for its merits; it is a barefaced invitation to the architects to "state the percentage which the architect will charge to the committee on the cost of the buildings," and a list is given of eight separate items in the architect's supposed duties, for each of which he is to name his price! We had thought that this kind of proceeding was a thing of the past. The advertisement is signed by "The Clerk to the Committee." Our impression is that it is the result of sheer ignorance, and that having been accustomed to see tenders from builders for lowest prices, they cannot understand the difference between the position of builder and architect. But they ought to be told plainly that their advertisement is an insult to the profession, and that no architect who respects himself would have anything to say to it.

THE ARCHITECTURAL ASSOCIATION:

ANNUAL GENERAL MEETING.

THE annual general meeting of the Architectural Association was held on Friday last week at No. 18, Tufton-street, Westminster, S.W., Mr. Henry Tanner, President, in the chair. There was a large gathering of members present.

Mr. E. Gunn, Hon. Secretary, read the minutes of the last meeting, which were confirmed; and Mr. Maurice Webb, Hon. Secretary, read a list of nominations for membership. He also announced a meeting of the Debating Society on October 15, when a paper is to be read by Mr. E. Greenop on "Competition—Open *v.* Limited," at 7 p.m. He also announced an Exhibition of Sketches in connexion with the Camera and Sketching Club on October 21, at 8 p.m.

The following gentlemen were then elected as members, *i.e.*—Messrs. R. V. T. Sewell, Teignmouth; S. M. P. Sheppard, Adelphi; H. C. Hunt, Richmond; and E. C. Francis, Cheltenham.

The following reinstatements were agreed to—Messrs. Albert S. Tanner, Pelham-place, S.W.; and Vincent Jerome Esch, Calcutta.

On the motion of the President, a vote of thanks was accorded to Mr. James Williams for presenting a water-colour drawing by Girtin.

Prize Distribution.

The President then distributed the prizes and medals as follows:—

G. G. Wornum—A.A. Travelling Studentship, value 25*l.*, and medal.

C. G. Boutcher—Second prize, A.A. Travelling Studentship, value 5*l.*

H. F. Murrell—A.A. Essay prize, value 10*l.* 10s., and silver medal.

W. J. Durnford—Banister Fletcher Bursary, value 20*l.* 5s., and silver medal; book prize for first place, Advanced Physics.

L. M. Gotch—Architectural Union Company's prize, value 20*l.*

B. F. Matthews—Hon. mention, Architectural Union Company, and special prize, value 5*l.* 5s.; book prize, Fourth Year Evening School.

R. Cromie—Special prize, Saxon Snell Studentship, value 10*l.*

W. D. Cathcart—Elementary Class of Design prize, value 3*l.* 3s., and bronze medal.

Alan Snow—Advanced Class of Design prize, value 5*l.* 5s., and bronze medal.

E. L. Apperly—First Year Day School, book prize for first place in History Test Paper; book prize for first place in Construction Test Paper; prize for first place in Perspective Drawing Test.

R. C. Stevenson—First Year Day School, book prize for first place in Construction Test Paper; Studio prize for best Portfolio of drawings during session.

T. F. Ford—First Year Day School, book prize for first place in Geometry.

C. Rowntree—First Year Day School, book prize for first place in Physics.

A. E. Maxwell—First Year Day School, volume of A.A. Sketch Book for first place in Freehand Drawing Test; Special Studio prize.

F. A. Crouch—Second Year Day School, Travelling Studentship, value 15*l.*; book prize for first place in Intermediate Physics.

H. B. Chisholm—Second Year Day School, first place in "End of Session Test."

D. J. S. Dawson—Second Year Evening School, Scholarship, value 15*l.* 15s.; book prize for first place in Preparatory Physics.

H. D. Kidd—Second Year Evening School, book prize.

H. V. C. Curtis—Second Year Evening School, Master's prize.

P. D. Hepworth—Third Year Evening School, Studentship, value 15*l.*

H. E. Moss—Third Year Evening School, book prize.

H. A. Gold—Third Year Evening School, Master's prize.

C. A. Farey—Fourth Year Evening School, Travelling Studentship, value 15*l.*

R. M. Pigott—Fourth Year Evening School, Master's prize.

Norman Keep—Book prize for first place in Elementary Construction.

G. H. Inman—Book prize for first place in Geometry.

G. M. Eaton—Book prize for first place in Greek and Roman Architecture.

R. N. Jackson—Book prize for first place in Greek and Roman Architecture; book prize for first place in Renaissance Architecture.

C. W. Rogers—Book prize for first place in Early Christian and Gothic Architecture.

P. J. Adams—Book prize for first place in English Architecture; book prize for first place in Materials.

H. A. Thomerson—Book prize for first place in Drainage.

G. Flint Clarkson—Book prize for first place in Ventilation; book prize for first place in Iron and Steel Construction; book prize for first place in Advanced Construction; book prize for first place in Architectural Features; book prize for first place in Professional Practice.

The following students have been recommended by the Visitor, Mr. Ernest Newton, for the Board of Architectural Education Certificate, which entitles them to exemption from the R.I.B.A. Intermediate Examination:—

R. W. Cable.
G. F. Clarkson.
C. A. Farey.
A. V. Sutherland Græme.
G. W. Home.
G. D. Gordon Hake.
L. Kerr Hett.
T. A. Lodge.
B. F. Matthews.
C. E. Fellowes Prynne.
I. M. Pritchard.
R. M. Pigott.
A. D. Robinson.
F. H. Swindells.
E. J. Tanner.

The following students have been awarded the Association Two Years' Course Certificate:—

E. S. A. Baynes.
A. G. Butler.
J. A. Cheston.
H. B. Chisholm.
F. A. Crouch.
B. P. Gaymer.
J. O. B. Hitch.
L. D. Martyn.
E. W. Mountford.
C. W. Rogers.
S. E. Shurmur.
R. Talvalker.

President's Address.

The President then delivered his Presidential address.

After some preliminary remarks of a complimentary and personal nature, the President continued:—

"On considering the general condition of the Association, we cannot, I am afraid, be altogether satisfied at present, for although we have wiped off the building debt, our annual balance has been decreasing rapidly, and what is worse, consistently; and, indeed, so serious do we consider the position that we are proposing during this session to thoroughly investigate the finance of all our departments, and to put each section as far as possible on a more remunerative basis.

Our total membership this year shows a slight decrease, as we have had 132 resignations and losses, as against eighty-four new members, and I am very sorry to say that we have lost by death several old and very valued members—Mr. Gruning, who was so universally respected, probably his name appeared in the bulk of cases during the last few years as arbitrator or third surveyor; Mr. J. W. Penfold and Mr. Cole Adams, former Presidents, and Professor Hulme, who for a long time was a valued member of our lecturing staff—are only a few of those whose loss we have to deplore.

This decline in our membership I attribute to the very long period of depression through which we are at present passing, and which is affecting so very adversely the most important trades in this country, among others the building trade, and, of course, architecture suffers at the same time. However, the historians will tell you that history repeats itself, and we know of similar periods of depression through which we have passed which have been succeeded by a flowing tide of prosperity, which I trust will be the fortune of our country—and incidentally ourselves—in the near future.

I am afraid that, like most professions, ours is overcrowded; but, as in other walks of life, there is always room at the top, so that we must not despair, but each of us make the top our goal, and be content with nothing short of that.

I regret that I must say that there is a certain slackness creeping in among some of the men who have done with classes and lectures, the men to whom we look to support the older institutions of the Architectural Association, the students' branches being as full of life and vigour as could possibly be desired. Every session sees the creation of some new club or section, rising, I was about to say, "Phœnix-like" from the ashes of its parent, but I must retract, for the parent Architectural Association is not in ashes but just a little inclined to be soporific. The most important case in point, to my mind, is that of the attendance and discussion, or lack of them, at general meetings, which ought to be far better attended. The papers for the coming session, I feel sure you will agree, are full of interest to every one of us, and I sincerely trust that the gentlemen who spend their valuable time in writing for us will have extended to them at least the courtesy of a good attendance. I have often wished that the Debating Society's meetings could be combined with the general ones, as the members of the former are undoubtedly very proficient at debate, and it would certainly be for the good of the Architectural Association generally that they should give us the benefit of their assistance.

Sketch-Book and Classes.

The "Sketch Book" is not at all well supported. It does not even pay its way, and I feel sure that all here would be sorry to see the end of it, but that is what must happen unless a wider circulation is obtained. The illustrations are always good and well worth the guinea subscription. I should like to take this opportunity of thanking Mr. W. G. B. Lewis for the many years of strenuous work that he has devoted to the production of this valuable volume, and to express a hope that under the new *régime* recently organised it may once more obtain the sound financial status that it once attained to under his care.

The Water-colour Class, which must surely be a favourite subject with the majority of us, is languishing for lack of support, and is likely to die out like the Modelling Class a few years back. The Life Class, too, has to hunt for members, whereas the room should be really far too small to hold all the applicants; why it is not fully attended it is difficult to imagine. The younger members have their hands already full, but those who have done with the schools surely would do well to turn their attention and part of their spare time to this instructive and delightful branch of art—the study of the figure from life.

I trust, gentlemen, that you will forgive me for this little disquisition on our shortcomings, or what is more important, I hope you will consider it, and that the Architectural Association will profit by it. I do not think there is any value on an occasion like this in looking only on the bright side of things and disregarding those less satisfactory, or else those departments suffering under the shade of adversity would continue to do so; while the more favoured, basking in the sunlight of the Architectural Association favour, would continue to flourish like a green bay-tree, whose spreading leaves would only add more to the obscurity in which the others languish.

Mutual Assistance.

A propos of the bad times from which most of us are suffering at present, I should like to tell you that the Council is always ready and anxious to help our men to the best of its power, and the desire of the members is to aid rather than harass, as regards paying subscriptions, etc., those who are found to be in straitened circumstances. The register of assistants, too, is now only open to members, and we have been able thereby to find work for more Architectural Association men than before, and I believe that there is

Digitized by Google

a very material benefit derived from the alteration. We have also very carefully considered the possibility of helping assistants in other ways; for instance, by an assurance scheme in connexion with the subscription, but this unfortunately was not found to be practical, and had to be abandoned.

It has occurred to some of us that there is not enough social life in the Architectural Association; that we meet so almost entirely in working hours, and consequently so seldom in moments of leisure, that the men of various decades do not get to know one another, and we should like to see more of the men who no longer wish to come here to study, but I suppose that their absence must be ascribed to the natural reaction after the years of hard work. However that may be, we are thinking of flattering the Royal Institute in the sincerest form, *i.e.*, imitation, by copying—on a smaller scale, of course—the "At Homes" which have proved so successful with the senior body. I hope if this can be arranged that the members will give the Council their support, as it is only by the aid of mutual confidence and assistance that a body like the Architectural Association can hope to be successful, and we are now so numerically and geographically extended that it is only at such evenings as I suggest that a large number of our members could or would ever meet; we have in the Museum premises well suited for such entertainment, and this recalls the fact that we have still the Architectural Museum apart from the Architectural Association as an annual charge on us, though it was formerly supported entirely by subscription, and I hope that the public and all interested in architecture will not forget this, as we seem in danger of not being able to maintain our list of subscribers, new ones not coming forward to fill the gaps unfortunately caused by the loss of former members, in which connexion we have to deplore the death of such men as Lord Ripon and the Hon. Dudley Fortescue. The collection of casts which we possess will bear comparison with any in the country, and we have spent a large amount on the Royal Architectural Museum in order to get it properly housed and arranged, in the hope that it would prove more useful to all students of the many styles of work which are represented in it.

Education.

Of the many branches of the Architectural Association, the educational is, of course, the most important, in fact the whole organisation is being run more and more with this department in view as the main object. Since our School was started more have sprung up in every direction, and I see that one is now being started in Birmingham, and when there are enough schools to educate the majority of those seeking an architectural training, which time I trust rapidly approaches, I imagine there will be ample support to the proposition put forward in the papers a short time back, of a Diploma course in architecture, and over which there was a great amount of discussion; the different schools naturally shape their studies on varying lines, *quot homines, tot sententiæ*, and I think it ill becomes any among them to lay down the law as to which is the best; the Diploma course would attract the best men from each centre, and the various systems could be compared by results. The proof of the pudding is in the eating, and we, I am sure, have here a very good pudding, though there may be others of a different make more to the liking of the cooks who have had a hand in the mixing.

Our students' exhibition of work this year was a very good one, a general level of excellence being maintained, which always speaks well for both masters and students. Mr. Maule, Mr. Varndell, and all the other masters work most conscientiously for the welfare of the students, who in turn must, I am sure, ably second their efforts to produce some of the work we have seen, and I am confident that in our two years of day school study, and two of evening school, the students receive a very valuable and sound grounding in their work, which must be most useful to them in after life, and very different to the scrappy and haphazard fragments of architectural pabulum from which the students of even ten years ago extracted what education they could; but there is no doubt that our curriculum could with great advantage be followed up and amplified by the course of higher studies, which cannot be embraced in the short time at our disposal here.

Architectural Association Clubs.

The Camera and Sketching Club is another flourishing department of the Architectural Association, and I think that is largely owing to the energy and administrative power of Mr. Alan Potter, who has devoted a great deal of time and trouble in working up the club, backed up as he must be by a hard-working committee. Their excursions, particularly abroad, seem to me to be wonders of comprehensiveness, and of great value to the younger members, as they are, I believe, run on the cheapest lines—and bicycles. The latter method of locomotion does not perhaps recommend itself very strongly to some of us who prefer the comparatively luxurious and very complete methods of transport arranged on the Architectural Association Annual Excursion by our excellent Hon. Secretaries, Brown and Hennings. I do not intend to intimate that the excursion is run for the older men only; far from it, we welcome gladly new men and young men, and I can guarantee this, and I feel sure those who have experienced it will agree with me, that no one is ever allowed to feel lonely or apart—all are friends, and our efforts are directed to making all enjoy themselves, which is none the less possible because we have a very full week and get through a lot of work.

The photographic work of the Camera Club is becoming increasingly useful to the Architectural Association; the collection of slides, now numbering 4,000, contains examples of almost every style of architecture, and is of the utmost value to lecturers and readers of papers, and I venture to think there are very few subjects connected with our profession which could not be illustrated, to some extent, from the collection.

Our Athletic Club numbers over 200 members, an increase of fifty during the last year, and I am very glad to see it in such a flourishing condition, as personally I take a great interest in athletics, and the club is one which exercises a powerful influence for good in every one of its members. Sport improves every man's character, and teaches him to lose well, as also to win well, and the title of a "good sportsman" is one that every Englishman covets, for it does not only refer to the athletics we indulge in, but to our efforts in the serious game of life; a healthy mind flourishes best in a well-developed body, and physical fitness is the best aid to good work, and the records of the athletic men in the schools here are no exception to the general rule.

The Sports Annual Meeting is one which I should like to see better attended, and one which Mr. J. H. Squire even suggests might be made an official summer reception, and I hope next year we shall get a better attendance, although on the last occasion those who were present made up, as far as is possible, by their enthusiasm for the numerical failure. The Rifle Section, which supplies the largest contingent, encourages Imperialism in a practical form by supplying a good number of Territorials to our home defence, for which reason alone every one who is in a position to do so should subscribe to it. The Rugby Football Section, too, is one of which we have reason to be proud, as the record for this year shows a very high percentage of wins; and if sufficient support is forthcoming—and I have already several names—I hope to start a Golf Section this winter, and as the game has now become so popular, I trust we shall have no difficulty in getting together as good a side as in all the other athletic branches.

It would not be possible to review the various subsections of the Architectural Association without mentioning the Musical Society and its worthy Hon. Secretary, Mr. P. W. Lovell; it is a body which caters largely and frequently for our entertainment, and incidentally I may say I should like to see more supporters of this deserving section. It is not necessary to be a musician to join—that is not within the power of many of us, but it seems very hard that men who work so well should also have to pay out over the play when the performance is given for the benefit of the community. The last play unfortunately did not pay its way, and the burden of the debt lies heavy upon us, so that any subscription towards the deficit would be very welcome, as it is only by this means that the debt can be wiped out; this must be done before another play is produced, and it would be a great pity for this annual entertainment to be again dropped, as it seemed to be so universally appreciated.

I am afraid that you will all begin to think that my address to-night savours too much of a charity sermon, or even worse, for on such an occasion you would be asked to loosen your purse-strings for one object only, while I have asked for assistance for many; but remember it is the workers we want in all branches—art, science and recreation—even more than the subscriptions, and if each of us were to devote some small portion of his time to one only of our various branches we should be in a very satisfactory position.

Architecture and Legislation.

Among the happenings of legislative architectural interest during the last year, the Housing and Town Planning Bill is one of which we were led to expect a great deal of good, but the more recent legislation which is being framed with regard to land taxation would seem to have a malevolent influence on the maintenance of open spaces in towns, at any rate, by private people. However, it has been said that religion and politics are the Scylla and Charybdis of public speaking, so I must refrain from enlarging on this subject or I shall be drawn into the whirlpool, but I cannot help saying that it would have been much more satisfactory if the disinterested offer of help from the Institute had been received in better part by the authorities in charge of the Bill, for if there is one thing on which the heads of our profession should be consulted it is surely this, and a good architectural result might then be obtained quite compatible with sound engineering requirements and a satisfactory financial result.

The Patents Act has benefited us to some extent, owing to the factories which now have to be put up here by the foreign owners of patents registered in this country which now have to be worked here, but on the whole there is a decided tendency just now to leave building alone until some clear idea is obtained as to the final imposts which land will have to carry.

We are to have further legislation by the London County Council under this year's General Powers Bill, in which the claims of steel as a reliable building material are properly recognised, and it is proposed to allow the erection of steel-frame buildings throughout, *i.e.*, instead of the thick outer walls formerly required, we may now have thinner panelled walls with steel framing; but, on the other hand, the internal structure is now to be subjected to further supervision, this part of the building being rightly held to be an integral part of the outer shell, whereas with the brick outer shell such was not the case; but a heavy responsibility is being laid on the London County Council and the district surveyors, as they will be answerable for the stability of the new type of building, and I fear some amount of time must be lost in getting plans approved, and time is a factor on which our clients nowadays never

Digitized by Google

fail to lay the greatest stress, and I must say I am inclined to think that taking the responsibility from the architect is a mistake; it means the work being done twice over and taking a large amount of interest out of our work, as the architect should be the author of the entire building, including the structure.

Modern Conditions.

The strides made in ferro-concrete, which is recognised as a subject of future legislation in this Bill, have been prodigious, and though up till recently this type of construction has been utilised chiefly for engineering work, its influence is now being felt in our architecture, and this opens up a very wide question for consideration, for if this medium is going to be, as I think, the one utilised in our larger architectural works, we shall either have to take up the study of this form of construction with its attendant possibilities, or we shall find there will come into existence a ferro-concrete specialist who will take over the general construction of the building, and the architect will be relegated to the decoration of the interior and the design of the exterior.

This again raises a point of supreme importance which we are sometimes inclined to overlook, we must design our work to suit modern conditions. It is impossible to insist on the acceptance by the public of the type of work which was suitable even twenty or thirty years ago; we have to face the problem and accept the present conditions and endeavour to treat them architecturally, instead of attempting to make modern requirements bend the knee to preconceived ideas of architectural treatment, and surely this can be the one way to evolve a style of architecture of our own, which can only be good if suitable to the conditions of the country and the requirements of the people.

I am referring here, of course, to the large commercial buildings in our cities, as in domestic work we have a freer hand, for the habits of life in the home can never change so thoroughly and so quickly as in the world of business. Why should not good architecture be produced with modern materials and to suit modern users? The steel column and beam are accepted facts—why hide them with an arch and a dummy pier? Why should not our construction be shown in our designs instead of being hidden or obscured as much as possible? There is no doubt that we shall have to evolve a new method of treatment for the modern types of construction unless we are going to be content to let our architecture be a mere shell or screen of stone or whatever material we may elect to use, pegged or hung to the structural members, screening these from view without indicating their underlying form, as should surely be the case.

Architecture, we all know, constitutes an art and a science, and every year we live the latter component asserts itself more forcibly and will not be denied; it is becoming more closely interwoven with the artistic part of our work, and has a very material influence on the result, and we cannot shut our eyes to the fact and attempt to work only for the artistic. We can only produce an unsatisfactory result where we do not boldly tackle the problem with all the attendant difficulties; we cannot elect to deal with any question from the particular point of view which we desire, to the exclusion of the less interesting but none the less essential factors.

No one can fail to be struck by the general improvement in the attitude of the public towards town architecture of late years; planning of streets and open spaces has received much more consideration, and the relation of individual buildings in connexion with streets and adjoining work is not now so consistently disregarded. The average Britisher, to borrow a term from the other side, now takes a broader interest in architecture, and his horizon is not bounded by the particular buildings in which he lives or works; and as he educates himself the book opens, he knows the good from the bad, and begins to appreciate the former, and thereby creates a demand for that which we have to educate ourselves to supply.

With reference to domestic work, we have many men carrying on that high tradition in architecture for which England is justly famous, and I think we may congratulate ourselves on attaining a very high general standard at the present time; the public will not have the house which satisfied them a few years back, so even the speculating builder has to produce houses more consistent with the accepted canons of art than those he formerly flaunted in our architectural faces. In this connexion I should advocate the assistance, but not the entire control, of the woman in architecture, for, in spite of the risk of bringing down on my head the wrath of the suffragettes, I feel sure that the wider architectural field is not one for which the woman is particularly adapted, though in domestic work she would be a very valuable ally. How can mere man expect to know the working of a house like a woman? especially behind the scenes in the arrangement of the service and kitchen department; and very often in decoration we should many of us produce better work if we had the advantage of feminine assistance.

Registration.

Another bone of contention which I feel bound to touch upon is that of registration. I myself am in favour of it; of course no scheme of registration can elevate the art of architecture, but it seems to me that it certainly cannot do it any damage, and incidentally is sure to eliminate some of the undesirable, and might put us on a better recognised footing; but before we can be better we must be worse in such an all-embracing scheme as it must be to become law, many self-styled architects must be included in the roll, but that is or should be the end of this class except so far as the public care to trust any unqualified man when they know that qualifications are essential. Before we can get satisfactory registration we must become a united body, and the advocates of the extreme views must moderate them; but one thing is quite certain, the movement cannot be rushed as one party at the moment seem to desire, as no Bill would stand a chance of becoming law if opposed by any considerable section of the same profession as the promoters; but I venture to think that the anti-registrationists are lessening in number, and I feel sure that they, being mostly in the forefront of the profession, will not stand in the way of a movement that so many think would improve our lot, although they themselves have succeeded in spite of the present position of affairs. There is, to my mind, one most essential factor, and that is loyalty to the central body—I mean the Institute. If this point was now generally realised the advantages to the profession would be immense; until nearly, if not all, architects belong to the Institute, the Institute in turn cannot put forward its views as those of the profession at large, and those architects in favour of the movement who refrain from supporting the central body are only weakening the cause of registration, and not advancing it.

General Advice.

There are here to-night a good number of students, some successful in this instance, and some who are going to be; those who have carried off the awards I congratulate sincerely, but I would urge the others, some non-competitors and some unsuccessful ones, to press forward none the less energetically because they cannot just now see their way to the top. Remember that you are only on the lower rungs of the ladder, try again, or start to try, if lack of confidence in your own abilities has restrained you hitherto; the competition for the prizes has not been numerically strong of late, and you may find that you can do better than you think, and obtain honours here, to be repeated in the more important competitions at the Institute and again later in the field of life, where you may gain the highest honour of all—the appreciation of your fellow-workers, which nothing but the very best you are capable of will ever obtain for you.

I have often wondered lately if the brilliant draughtsmanship of the day, unless carefully guarded against by the student himself, may not have a derogatory influence on design; a too fluent pen or pencil is liable to run away with the happy possessor, though at times I admit he is wont to rise to far higher flights of fancy than the man less gifted in this way; but the product of the literary man's pen is his finished work, while the drawings of an architect are only means to an end, a step towards the building itself, and what looks well on paper, when drawn as well as some of you can, is liable to be misleading and less satisfactory in actual execution; therefore I would say, do not be satisfied with designing on paper without knowing the value in actual concrete form of the lines you put down, and the only way to know this is to take every opportunity of observing in actual work the value of different treatments, groupings or mouldings, and imagine how you would represent them on paper. I feel sure that most of our ideas, in some shape or form, have been thought out before, and in all probability executed, and are waiting somewhere for our approval or the reverse, to give us the advantage of modifying our ideas by the experience of those who have gone before.

The power of observation, when highly cultivated, is of inestimable value to us; a friend of mine remarking on it in this room, once said, "I wonder how many of the men here know the number of panels in their front door?" I was the first victim, and for a short time afterwards I went about counting door panels as an exercise. I wonder how many of you are as ignorant as I was?

I noticed recently in one of our periodicals a short article on London as seen from the trams, of which I believe there are about 400 miles, in which the author remarked what a good knowledge of our city could be obtained in this way, and what a valuable asset that knowledge was; how true this is, and how little most of us know of this big city in which we live, when you consider that you can now ride on bus or tram, from east to west or north to south, over the 117 square miles covered with buildings in the Administrative County, you can imagine what a panorama of architecture and building is spread before you—an open book seldom read through—but study every page, good, bad, and indifferent, sum up and analyse every example before you, find out why a building strikes you as good; is it mass, colour, detail, or some fresh note in composition which has been struck? Consider even the works which do not impress you favourably; there is something good in most of them, or you may, at any rate, learn to avoid some pitfall that has been the undoing of a former essay, and above all, I would say, criticise kindly, look for the good in all and not the bad, hesitate to say to yourselves how much better you would have done it; you never know the limitations, the troubles, the laws, the by-laws, the client's requirements with which the man who was responsible was hampered, and whether under similar circumstances your own work would have compared so favourably with it as you are inclined to think.

The difficulties that beset the path in actual practice, especially in large towns, are legion, quite apart from the matter of design, but these special requirements are increasing every day, and they must all be known to us before we can give of our best, for they will probably affect our designs very considerably; but if we strive earnestly to do the best that we can in every case, even though others at first seem too far ahead,

Digitized by Google

in the end the earnest worker always gets his reward. One form of genius has been described as "an infinite capacity for taking pains," and the man of that type is never far from the winning-post at the end of the race."

Mr. Walter Cave, Past-President, in proposing a vote of thanks to the President for his address, congratulated him on the honour, thoroughly deserved, which had been done him in electing him as President. There were very few members of the Association who had been more intimately connected with it than Mr. Tanner, and he had a record behind him of which he could not fail to be proud. The Association, therefore, could be congratulated on its choice, for their interests would be furthered and strengthened during the President's term of office. No one who had not written a Presidential address knew what a difficult task it was, and their President was to be complimented on his masterly effort. One part to be regretted, perhaps, was the reference to the finances of the Association. Most of them no doubt believed that the Association was rather more than paying its way, judging from the fact that during the last seven or eight years they had paid for the premises they now occupied, and many of them would be surprised to hear that some retrenchments would have to be made, with a thorough overhauling of the financial position. That was a serious matter, but no doubt, as the President had suggested, that was only a reflection of the times through which we are passing. He hoped that those who had charge of this financial overhauling would not find it necessary to reduce in any way the salary or the efficiency of the teaching staff, because the Association was really a teaching body, and their teachers were their greatest asset, and should be of the best. They had heard that there was always room at the top, but unless the teaching and the instruction were of the very best, he was afraid that the chances of students and pupils reaching the top would be much reduced. He suggested that whatever else went they should keep the best teaching staff they possibly could. They were all pleased to hear of the success of the various branches of the Association—of the Athletic Club, and so on; and he was interested to hear that keeping the Association register for Association men only had been a success, for he had been more or less responsible for the suggestion, and he was pleased it had borne fruit. The deficit on the Association play was to be regretted, but he thought there should not be a deficit, and that it was possible to have a play equally instructive to themselves and the outside public, and equally successful if it were not quite so elaborate. They would all regret it if the play they produced should be a drain on the purses of those who were responsible.

Sir Aston Webb, C.B., R.A., Past-President, who seconded the vote of thanks, said he agreed with the remarks made by Mr. Cave in reference to their President, whose long experience as to the working of the Association, and the enthusiasm with which he had supported it, marked him out as just the man to occupy the chair. The President's father and he (the speaker) were old friends, and it was very pleasing to them to see their sons taking an interest in the affairs of the Association. He had had the pleasure and advantage of having the President in his office for some time, but since then Mr. Tanner had got together a successful practice. He (the speaker) had had a long connexion with the Association, for it was about thirty years ago that he was Honorary Secretary, and twenty-five years since he was President. He did not think it would help them much to consider what they used to do in those days, and the Association certainly did better now in some respects. With regard to the prizes, he had been amazed at the great number given away, and the extraordinary number given to some of the men. And in that connexion he could specially compliment his old friend, Mr. Flint Clarkson, on the phenomenal success of his son during the year. He also noticed that the son of a Past-President, the late E. W. Mountford, was among the prize-winners; and it was very pleasing to find so many of the sons of architects, following their fathers, which looked as though architecture was not quite so bad a thing as some people believed. The President had lamented the decrease of membership of the Association, and where that occurred through death they must all do the same; but where it was from other causes he was not so sure. One of the unfortunate results of the increasing numbers of schools in the country—not only in architecture, but in painting, etc.—was that a large number of men not fitted for these professions were induced to enter because of the increasing facilities for doing so. There were a large number of painters, for instance, who were taught in the schools and who did not get much further; and it was the case with some architectural students. Though he was sorry for the Association if the number of members decreased a little, he did not view that decrease with entire regret. As the President had said, there was want of employment, and where that was so they did not want to bring in more men to increase that state of things. As to women architects, he could not agree that they would make better architects than men; and he imagined that a house designed by a woman would be all cupboards, swollen kitchen offices, and much reduced smoking and dining room. He was not in favour of women architects, nor was he in favour of registration—but that was a matter of politics, and was not to be discussed. He was sorry to hear that the "Sketch Book" was not a financial success He had given it up because it was so flourishing, and his bookshelves were so full, but after what he had heard he should subscribe again. As to the future of the Association, he had taken the greatest interest in its success for many years. He remembered the astonishment that was created when Mr. Seth-Smith suggested the establishment of a Day School, and the still greater astonishment when the Day School was started and proved such a success. He (the speaker) had always been a loyal supporter of the schools and still was, although, through an accident, he was also very much interested in other schools and had retired from the Visitorship of the Association, because he felt it was not desirable that he should occupy more than one similar position. He was not in a position to speak for the Royal Academy, but he could say he was sure that that body was desirous of working with the Association in the matter of their schools, and everything that could be done to bring those schools into co-ordination would, he was sure, meet with their sympathetic support, and would, he was also sure, be of the greatest advantage to the schools themselves. He had been through the Association and had in his time held nearly as many offices as the President; he had been through all the offices of the Royal Institute of British Architects, he thought, and had now been through a good many at the Royal Academy, and could see quite well the position which each of those bodies should hold to each other. As he saw it, while the Architectural Association remained what he hoped it would always remain, *i.e.*, a young men's body, they should be concerned in the elementary education of the architectural student. At the other end there should be the more advanced education of the Royal Academy, with the Royal Institute of British Architects as the sister of both by virtue of its examinations and the prizes it offered. It all seemed to him a perfectly simple matter, but at the present time they were not associated as they should be and as, he thought, they wanted to be. He believed the Royal Academy would be quite willing to do all they could to encourage that Association. The Academy was not anxious to have an enormous school; they gave education free and their accommodation was comparatively limited, and they did not need more pupils. But they would like to see—he should, personally—a closer connexion between the Association and the Academy Schools. That was one way in which he thought some forward movement might be taken in the Association. Another was in the matter of papers read at the ordinary general meetings. The difficulty of the poor attendances, etc., at the fortnightly meeting was the same when he was President of the Association, and the fact was that people were not particularly fond of papers. The Association got the very best papers from the best men, and still people did not come. He had often thought that if they made the discussion or debating meetings more general they would have better meetings. They did not so much want distinguished people to give papers; the papers should be given by the members themselves, who would then be free to get up and say more readily that they did not agree with the paper at all. That led to a spirited discussion, and gave the reader of the paper something to say in reply, and that, he believed, would do much for the *esprit de corps* of the Association. Young men did not mind being contradicted; later on criticism was sometimes irksome; young men liked it and replied. He thought, seeing that the Association was for young men, that perhaps they had imitated the Institute—well, he would not say too much, but a good deal. They had altered the name of their Committee to "Council," the name of the A. A. "Notes" to *Journal*, and so on. He thought of the old days when this was a student society, and they were all a jolly good lot of fellows together, and he should be sorry if the Association became a second Institute; they wanted only one of each. The President referred to steel framing and modern conditions of practice. These changes were bound to come, and it was of the greatest importance that young men should face the facts. The President mentioned that probably buildings would get put up by experts and architects would be called in merely to finish them; but was it not more likely that, while experts might put up the buildings, firms of upholsterers would finish them? If that were to happen he did not know where architects would be. They should all keep in touch with the latest methods and materials, and keep up their enthusiasm for their work. He looked back with the greatest pleasure to the time when he was working for the Association, and it gave him great pleasure to be there that night to hear his old friend as their President and to see his (the speaker's) son acting as Honorary Secretary.

Mr. W. H. Seth-Smith, Past-President, said he felt an interest historically and prospectively in the Association. He knew so well from experience what an onerous work the President had taken up, for the Association had grown to such dimensions and had so many departments and branches in which the President was expected to take an interest or leading part. The President, with his large experience of the administration as well as the deliberative part of the Association, would be able to fulfil all the duties with great success. The Association was supposed to go with the times and be progressive, and he was glad to hear the suggestions for new departures in the President's address. He was very glad to hear of the prosperous state of the social and recreative part of the work. They were bound, as young men, to keep this up. He thought there was a rather pathetic tone in the President's address, and, judging from the speeches just made, that appeared to be justifiable. The President was not pessimistic; he uttered just a warning note that, while there was so much distress and depression around, the Association must cut down expenses and wait for the better times that

Digitized by Google

were coming. People spent so much money on motor-cars now that building and architecture suffered. And architectural practice was carried to a higher place in the provinces more than it used to be, and men were as cultured and as qualified as they were in London. That was not so much the case in his younger days, All this had made a marked change on our methods of teaching and in many other ways, and especially in the demand for the services of London architects. He was very glad to hear the President's exhortation to criticise kindly and charitably; that was one of the most needed of exhortations. As to the schools, he should have liked to read a few lines of a remarkable paper printed in the Institute *Journal* last month. It was by Professor Laird, of Pennsylvania, on the reasons for the establishment of highly systematised schools, and the Professor's words should be read by all. It might be considered a commonplace to say that we needed schools, but the admirable way in which Professor Layard expressed the needs and had shown how those schools should be worked made it difficult to exaggerate the excellence of his remarks. As to the Association, it seemed to him that they were carrying out Professor Laird's principles in the very best possible way, and as one of those who carefully examined the work of the Association students, recently exhibited, there he felt he was justified in thinking that the Association School is excellent. The Association was basing its teaching on principles which were essential; and wisely neglected a lot of detail which perhaps some years ago might have been insisted on. And they carefully excluded anything like pictorial or academic pictures. There was just sufficient perspective and colour and pictorial design, if they liked to call it that, to illustrate the work being done, and the problems set to be solved. He noticed particularly that the work done was not merely small work such as farmhouses, cottages, etc., but it went on to better and larger work—more monumental work, work quite as far advanced as any student of the schools should need. As to a further departure, such as a Diploma Course, which had been talked about, he had not the slightest doubt that that would come, and would be made full use of by Association men, who would be fully qualified to deal with the problems set. Sir Aston Webb had already referred to the President's remarks on scientific construction. That was a question which the Association would need to deal with thoroughly in their schools; far more science would have to be acquired if they were to keep work within their professional limits, otherwise they would lose their position as architects. These new and rather highly specialised forms of construction were rapidly coming to the fore, and architects must be equal to dealing with them. There was no reason for pessimism as regards the Association and its work; on the contrary, they should be optimistic as to the Day and Evening Schools which had been so admirably kept up and which had been going strong. The Association were pioneers of architectural education in this country. It had by far the largest school of architects. It was formed very largely, as they had seen and heard that night, of the sons of architects who had themselves, as practising architects, run the whole thing; and they were warmly supported in the methods they pursued by the Board of Architectural Education. Therefore, he felt sure they would go forward, as they had in the past, feeling that the little depression would soon pass away and that, under the able guidance of their new President, they would be able to maintain their position.

Mr. Osborne Smith supported the vote of thanks, and congratulated the President and the Association in electing him to the chair.

Mr. Cave then put the vote of thanks to the meeting, and it was very heartily carried.

The President, in reply, said he had made perhaps a little too much about their financial position, and he certainly did not look with pessimism on the state of the Association. But he did not think it did any harm to have an occasional reminder. They had got so used to thinking that the Association could go on successfully and always would. A stitch in time saved nine, and a little thought and care now would save a lot of future trouble. He did not think he had been understood in his remarks as to women and architecture. He meant that if there was a place for women in architecture it was in dealing with domestic work and not in larger work.

The meeting then terminated.

The next meeting will be held on October 22, when Mr. F. D. Clapham will read a paper entitled "The Architectural Association Excursion to Cheltenham and District. 1909." The Council's report and balance-sheet for last session will be adopted at the same meeting.

THE INSTITUTE OF BUILDERS:

ANNUAL DINNER.

THE annual dinner of the Institute of Builders, Incorporated, was held on Tuesday, at De Keyser's Royal Hotel, Victoria-embankment, E.C., Mr. W. F. Wallis, J.P., President, in the chair. There were also present Messrs.

F. G. Rice, President London M.B.A.	C. W. Latter
Ernest J. Brown, President Nat. Fed. of Bg. Tr. Employers	C. G. Miller
E. E. Humphreys	J. A. Wallis
F. G. Wallis	W. Godson
H. E. Mathews	J. J. Jones
F. W. Ruck	A. S. Pridmore
G. E. Bond, J.P., President Society of Architects	E. H. Selby
T. J. Bailey, Architect L.C.C. Education Department	F. A. Wallis
C. W. Ferrier	B. P. Boorman
F. L. Dove, L.C.C.	R. C. Gleed
A. Stoner, Master Tylers' and Bricklayers' Company	G. Bird Godson
Henry Tanner, jun., President Architects' Association	H. J. Treadwell
Alex. R. Stenning, President Surveyors' Institution	Fleetwood Buss
Edwin T. Hall	G. B. Carvill
James S. Gibson	F. M. May
H. T. A. Chidgey, President Quantity Surveyors' Association	A. B. Yeates
Wm. Shepherd	J. W. Chessum
T. Gregory, J.P., Mayor of Reigate	Herbert H. Holt
L. J. Maton	R. B. Chessum
Jos. Randall	L. Barrett
Leonard Horner	C. H. Mabey
G. Macfarlane	Fred. Higgs
Sidney Leaning	H. P. Shepherd
C. H. Barnsley	F. Messom
T. E. Bare	R. J. Holliday
J. W. White, J.P.	L. C. Randall
S. Smethurst, J.P.	H. A. Bartlett
Ian MacAlister, Secretary R.I.B.A.	J. M. Theobald
	H. S. Greenwood
	A. B. Falkner
	Alan Neill
	R. W. Neill, J.P.
	T. Hall
	G. P. Nash
	G. H. Parker
	A. G. White
	H. P. Gordon
	A. W. Turnbull
	E. J. Strange
	G. Parker
	A. H. Ryan Tenison
	C. E. Bloomfield
	W. T. Walker
	Wr. Lawrence, jun., and T. G. Costigan, Secretary.

The loyal toasts having been proposed by the Chairman and suitably honoured,

Mr. F. G. Rice, President of the London Master Builders' Association, proposed the toast of "The Architects and Surveyors," coupled with the name of Mr. Henry Tanner, jun., President of the Architectural Association, and Mr. Alex. R. Stenning, President of the Surveyors' Institution. He said that, to quote Shakespeare:—

> "When we begin to build
> We first mark out the plot, then draw the model.
> And when we see the figure of the house,
> Then we must rate the cost of the erection."

One perhaps whose veneration for the old led him to see nothing but beauty in the ancient work could scarcely perceive that anything of to-day could compare with the work of the old masters. He would extol in eloquent diction the progress of architecture with the Assyrians and Babylonians, discourse on the noble simplicity and dignity of the Greek or the more extravagant ornament of the Roman, would enlarge on the beauties of the Norman, and be enraptured with the details of the Gothic. And, conscious that each in his way made the traditions of the art so ably represented there that evening, exclaim with Emerson:

> "The hand that rounded Peter's dome,
> And framed the aisles of Christian Rome,
> Wrought in a sad sincerity.
> Himself from God he could not free;
> He builded better than he knew;
> The conscious stone to beauty grew."

Another, perhaps, whose veneration for the old could not be gainsaid, yet believed and realised that the architects of to-day had the same zeal, the same desires and aspirations and love for their work that actuated the ancient architects and builders, would wax eloquent upon the charms and merit of the beautiful buildings which were erected in our day, and which we saw rise up in our midst. And who would say, when the history of the architecture of the present day came to be written, that the names of many present and those whom we admire and respect would not be writ large in that roll of fame as worthily maintaining the traditions of the past? While another will harrow our feelings by detailing the trials of an architect's life—how at every turn he was beset with difficulties and troubles which well-nigh overwhelmed him; how the irregularities of the site spoilt his elevation and design, how the smallness of the purse or the wishes of his client limited his aspirations; how the countless building Acts and by-laws and the stern demands of the sanitary inspectors mar his plan; and how he at times felt that every man's hand was against him, and that it was a crime to build. He yielded to none in his veneration for the good in the old; but his admiration for the work of the present was unbounded, and his sympathy for the trials and cares of the architect was very real. For all that, to his mind, architecture was one of the most fascinating and agreeable of the professions to enter. The delights attending the conception of the design, the gradual evolution of that inception until the actual completion of the building, must afford its author a constant companionship of his work which was denied to the other professions. He had often been impressed by the beautiful effect of the sky-line of the buildings in London, especially when approached from one of the bridges. He was very charmed a few mornings ago to notice what a beautiful picture it formed when seen through an early morning mist, which so often overhangs London. He was reminded of Madame de Staël's definition of architecture, which he would briefly paraphrase as "Architecture is frozen music," and it needed but little imagination to regard the pinnacles and domes as the sun-clad peaks of Nature's romantic scenery; and as the mist lifted and the sun burst forth upon the beautiful examples of the architect's art he could not but feel proud to be a citizen of dear dirty, smoky, old London, and to be connected, however remotely, with a profession that had given us such a wonderful vista. Unlike its sister art, architecture was ever present with the masses—it was there to elevate and educate. The very streets proclaimed its greatness and the squares its grandeur. He was very glad to observe that town planning was having the close attention of the architectural profession. Alas, it came too late! The only thing he envied Parisians in their city was the grouping of the buildings and arrangements of the squares. We in London had buildings equal in beauty, and squares and parks equal in grandeur, and if these could have been grouped by the old masters of bygone days London would have been the envy of the world. While we fully realised and appreciated the "seen" in the work of the architects, yet we were not unmindful of the unseen which was so abundantly supported by them. The education of the younger members of the profession was looked upon as a labour of love, and cheerfully undertaken by the ablest of its members. The watchful eye was ever on the alert on the exacting and onerous regulations which emanated from a certain quarter with recurring frequency. Especially did they wish to record their appreciation of the valiant fight made by the

Digitized by Google

Royal Institute of British Architects against the mistaken zeal and grandmotherly legislation which, although it had for its object "to facilitate building," would, had it not been for the efforts of that Institute, have had the opposite effect and retarded building; and although the Bill was not by any means ideal, it was much better for the spirited challenge of the architects. The work of the surveyor, or the surveyor with whom they as builders mostly came in contact, the quantity surveyor, was totally different from the architect, inasmuch as it was hidden and forgotten. The architect worked for posterity, the surveyor for the moment. The work of the architect was to be seen—it stood for time, and was admired or criticised according to its merits or the ability and taste of the critic. The work of the surveyor was realised by few and seen by fewer. When it had survived the criticism of the architect, who perhaps might assert that too much had been taken, or the suggestion of the builder that the work had been skinned, it was consigned to the oblivion of a brownpaper parcel. It was not his actual work that they were concerned with, not what he did, but how he did it, and it was in this respect that they desired to show their appreciation of the surveyor. He thought the day of the surveyor was fast disappearing who calmly numbered his doors and frames or had the delightfully simple and vague item, No. 1 porch roof; and although he personally should like to see a little more unanimity in the mode of preparation of the quantities to facilitate the speedy dispatch of tenders which was the horrible nightmare of the estimator; yet the surveyors were to be congratulated that the decided improvement which was initiated many years ago, encouraged and fostered, was now being stimulated by the advantages and advance of education to the ideal they all desired. If we could only get quantities for all work, then the builder would be pleased, the surveyor encouraged, and the public well served. He looked up the encyclopædia to see if he could get a definition of a quantity surveyor. He found he was not mentioned under surveyor. He found that there were only two kinds of surveyors—the land surveyor and the marine surveyor. He then looked under the heading of gentleman, peacemaker, and friend, but could not find him mentioned. But surely he was all three?

Mr. Henry Tanner, jun., President of the Architectural Association, in reply, said that the art they practised was a high art and a constructive art, and it was in the latter sphere in which they met their friends the builders largely. He said friends advisedly, for although he was, as a young architect, led to believe that the builder was a man very difficult to deal with, he now believed that builders were their friends and ready to help them achieve their ends, and from whom one could learn much. Architects' designs were but a halfway house, and without the assistance of the builder they would not see those designs realised. There was one small matter in regard to which architects frequently disagreed with builders, and that was as to price. It struck him, in regard to the quotation that Mr. Rice had made from Shakespeare, that Shakespeare had a shrewd idea as to clients, architects, and builders, for after the words quoted by Mr. Rice, *i.e.*, "Then we must rate the cost of the erection" (which was where the builder came in), he went on to say:

> "Which, if we find outweighs ability,
> What do we then but draw anew the model
> In fewer offices, or at least desist to build at all!"

What a picture of wasted effort that was! No one seemed from that to get much out of it. He had to make an admission—*i.e.*, that until recently he did not know the difference between the Builders' Institute and the Master Builders' Association, but now he knew that the Institute was the only incorporated body of builders in the country, and that it had been in existence some thirty-six years. Surely with these two bodies in London the building trade must be well organised. Architects must grant priority to builders in one respect at least, *i.e.*, because they came into existence first; but when the architect was called in to assist the builder out of some difficulty it was a very good thing for the builder, who thus got a buffer between himself and the client, for architects were useful in that way sometimes. As to the present, it was true that times were bad, but we were too apt to grumble about this. We should blame the good times, too, for they taught us luxury, and when bad times came we did not know how to throw luxury off.

Mr. A. R. Stenning said that the word "surveyor" had a very wide meaning, and the surveyors in the Institution which he represented included a good many branches of the profession; and amongst them was a Quantity Surveyors' branch, though that was not quite so numerous as some other branches. He was brought up as a surveyor in this sense, that he was an old practising architect and surveyor. In his young days there was not the division between architects and surveyors that there now is; then the architect was the surveyor, too, but now many architects did not look upon surveying as any part of their business at all, and so architects and surveyors had got rather separated, though he was both. He learnt a good deal of surveying and building from an old member of their body, *i.e.*, the late J. M. Macey, of the Strand, who was a good friend to him. They could not ignore the very difficult times they were going through now. The attacks made upon property by the Chancellor of the Exchequer had upset all one's previous calculations and experience as to what was right between man and man, and what would be the result of it all one did not know. Many of the proposals put before the country had been a great deterrent to building enterprise, for there was a want of confidence which was serious to contemplate. It was not only those who built, but the large body of men employed by builders and others who felt the present unsatisfactory state of affairs; it was the large amount of unemployment which was such a serious matter. He hoped that something would happen to restore confidence and improve the whole of the building trade. As to the London County Council, sometimes it seemed as though that body was the friend of architects, surveyors, and builders, but that had not been the case in reference to the London County Council Bill in reference to steel construction and ferro-concrete, which had to be fought. The architects, surveyors, and builders banded together and had conferences, and, loyally supported by the engineers, they were able to bring about the alterations they wanted, though not without a lot of expense and trouble. They gave their time ungrudgingly, and they had succeeded in getting a workable Bill, though it could not, he thought, do much good or harm so far as London was concerned. There was another matter. He had sat with Mr. Macfarlane on a Committee appointed by Mr. Gladstone to inquire into the question of safe scaffolding, and they spent a good deal of time in considering the matter. Every precaution should be taken to make scaffolding as good and safe as possible, so as not to waste the life of anyone; but all changes of this nature cost money, and builders had to pay for them. He did not think that anything had been done as the result of the inquiry, and he should like to know whether anything would be done.

Mr. G. E. Bond, J.P., President of the Society of Architects, then proposed the toast of "The Institute of Builders and its President." He had no hesitation in saying that, given a practical design to work to, and a practical architect to supervise the work, builders as a class might safely be relied on to exercise their exceedingly practical knowledge and experience and judgment to promote the best interests of all concerned in the work. A few centuries ago the intervention of a middleman between the person who desired a building and the craftsmen who assisted each other in its erection was superfluous, for, given a general plan to work to, and with expert craftsmen in each particular branch, possibly with the assistance of a few subordinates, he arranged and worked the material with which he was most accustomed to his own taste, and with his own hands performed all work, both heavy and light. Speaking somewhat as an artist he regretted that those days had passed never to return—days when it was the chief aim of every workman to make himself an expert in his art and craft. Since then things had greatly changed, and with the introduction of machinery and its rapid development in all directions hand labour had been reduced to a minimum, and with it had gone the security of position, the honest independence, and the due recognition of genius and skill which were among the rewards of the ordinary workman or craftsman who, as the result of persistent thought and conscientious effort, succeeded in fully appreciating and thoroughly understanding the highest capabilities of his materials, and evolving therefrom many of those beautiful designs and details which at the present time were the objects of our great admiration. But the present-day workman was not by any means an artist; modern tradition tended to reduce all to a dead level of mediocrity; each was a cog in the machine built up by a scientific age, and individuality was at a discount. The net result of this was that under modern conditions a contracting force was an absolute necessity, and to be efficient that force must be associated with an adequate amount of capital to provide the expensive but very necessary machinery and plant, to purchase material, and to pay the wages of the workmen. And as the building trade was not one which lent itself readily to co-operative effort upon the usually recognised lines that contracting force had devolved upon a set of men whose energies, foresight, and business ability were equal to that of any other class throughout the country. Under modern conditions the building contractor had justified his existence as a very necessary part of the building scheme, being the brains moving the machine which made it possible to build huge structures with dispatch and economy. The present relations between capital and labour necessitated the existence of powerful organisations on both sides. Trade disputes were seldom satisfactory, and it was necessary and desirable for both masters and men to have their organisations to protect their interests. An advance of five or ten per cent. in the workman's wages meant an increase in the cost of building, and must be ultimately paid by the client, and one of the objects of a master's association was to deal with labour organisations in such a way as to secure some degree of permanence both in conditions of labour and rates of wages.

The President, in reply, said he joined the Institute eleven years ago, and he had been on the Council some ten years, and so he had a good knowledge of its work. The Institute had the whole of the interests of the trade to represent, except as to the relations with the men. It was an incorporated society, and the only body connected with the industry that was recognised by Government. Its work might roughly be divided into four divisions—*i.e.*, Parliamentary, Municipal, Industrial, Educational. He had been looking through the agenda papers for the last ten years, and he was surprised to find how manifold the activities of the Institute were, but it worked unostentatiously and quietly. In connexion with their Parliamentary work, they had had before them such matters as Plumbers' Registration, Easement of Light, Extraordinary Traffic, Workmen's Compensation and Insurance, Census of Production, London Building Acts, Employers' Liability, Water Board, Building Court, Prevention of Corruption, Building Accidents, Labour Exchanges, and it must be remembered that of late years Parliament had been

Digitized by Google

very busy on the side of workmen, and by deputations and evidence on Committee it had been the endeavour of the Institute to put their views before the Government, and in nearly every instance they had done so with much success. The Government sitting was always ready to learn the views of the Institute on any matter affecting them. There were on the Institute men of great ability, like Mr. Shepherd, Mr. Frank May, Mr. Greenwood, Mr. Holloway, and others, all men of great experience, whose views were received by the Government with the respect they deserved. The builders of the country owed a great debt of gratitude to the Institute and its Council for their trouble and expense in connexion with Bills before Parliament. The opposition to one Bill alone cost the Institute over 200*l.*, and such opposition meant a good deal. As to municipal work, they had had a good deal of correspondence and discussion with various bodies in reference to such matters as building regulations, wayleaves, demolitions, and inspection of scaffolding. These matters were always cropping up to demand attention. The Institute had appointed witnesses for Royal Commissions on regulations for factories and buildings in course of erection, and had, it might be, prevented the formation of rules which would have been disastrous to the economical working of their businesses. Then as to their relations with architects. During the time he had been on the Council they had completed their *magnum opus*—*i.e.*, the settlement of the long-fought-for form of contract, which had now been working for some six years with great success. They had during the last session, owing to one of His Majesty's judges, been asked to amend the wording of one clause of the form, and, a form of words being agreed upon by the Council and the Royal Institute of British Architects, they believed that the difficulty had been settled. There were many matters in connexion with industrial work which they had had to deal with, such as Municipal Trading, Priced Bills of Quantities, Assimilating Practice of Surveyors, Fire Prevention, Standardisation of Material, W.O. Tenders, London Chamber of Commerce, Mersey Dock and Harbour Board, Contract and Sub-contractors' Forms, Relations with the Royal Institute of British Architects and London County Council. They had made a step in the direction of friendly relations with foreign contractors, arising out of a visit of some Belgium contractors to London, when they were entertained by the Master Builders' Association, and great cordiality was shown. He thought that there would be a strengthening of these friendly relations, to the advantage of all of them who went abroad. The Institute had by no means neglected the educational side of its work, but, seeing what was done elsewhere, that field was limited. Mr. Rice had been appointed an examiner to the Carpenters' Company. They had had lectures on American Methods, Building Contracts, Tunnelling for Tubes, Seasoning Timber, Foundations in Deep Water, Reinforced Concrete, and the Giving of Medals. It was also proposed to have an examination of builders' clerks. The work of the Institute was varied and many-sided, and he regretted that they were not better supported by builders, more especially by builders in the country. The Institute did not advertise itself, and it did not concern itself with labour disputes between masters and workmen, but it took action in many other ways on behalf of the trade, and they deserved more support than they received. They were not retrogressing, but they were not increasing their membership very rapidly, and he appealed to builders who were not members to join. In conclusion, the President referred to the great assistance which Mr. Costigan, the Secretary, rendered to him and the Institute. Their Secretary had the affairs of the Institute very much at heart.

Mr. J. S. Gibson, in proposing the toast of the "National Federation of Building Trade Employers of Great Britain and Ireland," said that they all—architects, surveyors, and builders—had to accept the conditions of building work as they found them to-day, and it was no good attempting to bring back the state of work, of design and methods which produced the great architectural triumphs of the past; those methods were gone for good, and we had to accept the present conditions relating to work and workmen, and he thought that the efforts of the National Federation should be rather concentrated upon those qualities which would tend to make good building in the future—good workmen and the success of the art of architecture, as well as the art of building. He was perfectly certain that, as far as the education of the workman was concerned, a great deal could be done, and ought to be done. It was only by producing good workmen that they could get good work, and it was no good saying that the introduction of machinery or the different methods of employment had reduced workmen down to one dead level. They must endeavour to make an effort to get some soul into the work, so that they might at some future time hand on works that would be a pride and pleasure to those who saw them afterwards. But there were other spheres open to builders, and as men of influence in political life and social and municipal life, he was certain that as opportunities arose they would take advantage of them to help architects to regain their former prestige, and to put them in that position in which their abilities would be of value to the nation. When Mr. Rice put before them so eloquently the history of the architecture of past ages he was struck with one thing, *i.e.*, that in modern times we seemed to take it as an accepted fact that works which had been pre-eminently within the domain of the architect had been taken out of his control and placed in the hands of other practitioners without any direction on the part of architects, and it was in the direction of some assistance in that way that he put the matter before them. For instance, the great bridges of the past were designed by architects; they were called engineering works now! A few years ago a Royal Commission on Traffic was appointed for London. If the designs of Sir Christopher Wren for the alignment of London had been carried out the Traffic Commission would not have been required; but the future of London from the traffic point of view was dealt with by this Commission, and the extraordinary thing was that no architect was invited to sit on that Commission or be a member of it, and, as a matter of fact, no evidence on the question of the alignment of the main arteries for the traffic of London had been placed before the Royal Institute of British Architects, and no advice asked—no opinions asked on what he ventured to think was one of the finest, grandest architectural opportunities which could arise in the history of this country. When builders got the opportunity he wanted them to impress upon the various members of Parliament they knew that it might be advisable for such projects, before everything was cut and dried and settled, that the opinion of the poor architect should be asked, and, if possible, some place found for him on such Commissions, or where he could ask questions and make observations. As to the Federation, whatever it did to help on good building, or whatever it did in the way of education, of co-ordination of modern methods of building, they would find in architects as a body encouragement and sympathy. Architects would do all they could to help on the end common to them, *i.e.*, producing works of art and good building which would be a credit both to architects and builders.

Mr. E. J. Brown, President of the National Federation, in response, said it was a great honour to wear the chain of office which was upon him, which had upon it the names of Past-Presidents. The Federation was growing in numbers and strength, but he regretted that there were many builders who stood aloof, and he hoped they would join forces. It was a matter of great regret that these builders should reap all the benefits that resulted from the work of the Federation and did nothing to assist in that work. The Federation had much the same objects as the Institute of Builders and the Master Builders' Association; it had all objects in view which could be of interest to builders. They had as much Parliamentary work to do as they could find time to carry out, and their work was growing in importance, and they were becoming a power in the land. The trade unions showed the way to organise, and masters in London were doing what they could to put their house in order. When trade was bad it was difficult to get masters to join, but trade unions were not troubled in this way; men joined and the union became of great power.

The concluding toast was "The Visitors," suitably proposed by Mr. Frederick Hills and ably acknowledged by Mr. H. J. Treadwell, F.S.I.

CHAPEL OF THE PYX, WESTMINSTER ABBEY.

THIS very interesting building, which the Commissioners of H.M.'s Office of Works opened to the public on Tuesday last, is a compartment of the substructure at the end of the south transept. It consists of two of the seven and a half bays beneath the monks' dormitory—now Westminster School—and belongs to the range erected *temp.* Edward the Confessor (see the plan in our number of January 6, 1894). The substructure, about 110 ft. in total length, is vaulted in two spans and divided with a middle line of massive round columns. The shafts are 3 ft. 6 in. in diameter and 3 ft. 4 in. (or 5 in.) high. Each abacus, a block, 7 to 8 in. deep, has an under moulding in shape of the frustrum of an inverted cone, and the bases correspond with the capitals, but nearly all have been altered, together with the columns, and enriched, in the subsequent subdivision of the original chamber. The columns support a quite plain groining, having squared transverse rib-arches without groin-ribs. The masonry shows the wide joints and marks of the employment of the hand-axe, often seen in contemporary work. The capital of the detached column in the middle of the Pyx Chapel evinces traces of a partition which stood against it; on that side the capital has been rounded off and partly carved with inclined grooves or flutings, on the other side it has been shorn with a rough canting of the angles. Beneath the strongly-barred window of the northern bay is a plain stone altar upon two steps; in the table is cut out a large circular depression. The altar, reputedly the tomb of Hugolin, chamberlain and treasurer of the Confessor, stands in a squared recess, at a corner of which is a piscina, fashioned as a column and apparently of XIIIth century workmanship. This portion of the chamber served for the King's treasure-house from a remote period until it was robbed in May, 1303, by Richard de Podlicote and his men of a vast hoard of money, plate, and jewels, which Edward I. had laid by for his wars against the Scots. The treasure-house was then rendered more secure by walling off the passage of entry on the north side and so reducing its extent to that of the later pyx-chamber. Since the time of the Restoration the Regalia has been kept in the Tower. The chapel, entered through a door in the east cloister, fitted with seven locks, has of late years been used for the storage of treaties, muniments, Exchequer tally-sticks, etc. In a chest were held the standard pieces and plates used in the periodical "trial of the pyx"; the "pyx" being the box wherein the coins to be assayed are kept at the Mint.

Digitized by Google

THE LONDON COUNTY COUNCIL.

THE first meeting of the London County Council after the summer recess was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Greenwich Borough Council 1,000*l.* for erection of stables, etc.; Lambeth Borough Council 11,000*l.* for street improvements; Poplar Guardians 1,563*l.* and 3,882*l.* for poor law purposes; Stepney Borough Council 1,200*l.* for the purposes of Part III. of the Housing Act, 1890; Woolwich Borough Council 1,398*l.* for street improvements, and 7,859*l.* for baths and washhouses. Sanction was given to Wandsworth Borough Council to borrow 1,030*l.* for street improvements, and to Westminster City Council to borrow 3,000*l.* for a street improvement.

Alteration in Designation of Contractors.—The Stores Committee reported as follows:—

"We have to report the undermentioned alterations in the designation of certain contractors for the supply of stores to the Council:—

(i.) Messrs. Macfarlane Brothers, of Roxburgh Works, Scotstoun, Glasgow, altered to Macfarlane & Robinson, Ltd.

(ii.) Messrs. A. L. Thomas & Sons, Ltd., of Dour Iron Foundry, Bridge-street, Dover, altered to the Dover Engineering Works, Ltd."

Housing of the Working Classes: Particulars of Dwellings Provided by the Council.—The Housing of the Working Classes Committee reported as follows:—

"We have had prepared tables showing the amount of accommodation, the rents charged and received, the number and occupation of the tenants, and other particulars relating to the Council's working-class dwellings and lodging-houses for the year ended March 31, 1909. Up to the end of the year 6,428 tenements in block dwellings, 1,768 cottages, and three lodging-houses, affording in all accommodation for 46,310 persons, have been provided by the Council. The interest and sinking fund charges amounted to 49·41 of the gross rent for the year, and the expenditure for the maintenance and management of the estates, including repairs, rates and taxes, water, lighting, etc., to 39·57 per cent., as compared with 38·56 per cent. during 1907-8.

During the year 2,577 tenants removed from the dwellings. This is equivalent to 31 per cent. of the total number of tenements, as compared with 34 per cent. for the year 1907-8. The usual yearly census of the Council's dwellings was taken in March, 1909, and showed that of the 22,210 rooms available for letting in block dwellings and cottages, 20,238 were occupied by 28,335 persons, or an average of 1·4 persons a room, the maximum number allowed by the Council being two persons a room. Of the 1,845 cubicles in the three lodging-houses 1,444 were occupied. The number of cases of overcrowding was twenty-five, or ·3 per cent. of the total number of tenements, and steps were immediately taken to remedy the evil, in most cases by transfer to larger tenements in the Council's dwellings.

The death rate for the year amongst the tenants, exclusive of the occupants of the three lodging-houses, was 8·6 per 1,000. During the year seventeen fires occurred in the dwellings, but the damage done in each case was slight. The expenditure for the year on repairs to the buildings has amounted to 7·71 per cent. of the gross rent."

Presentation Lecture Hall.—The Chairman announced that he had received from Mr. E. J. Horniman, M.P., a letter intimating that he had determined to complete his father's gift (referring to the Horniman Museum and Gardens at Forest Hill) by offering to build a lecture hall to seat 200. He was willing to spend 4,500*l.* on the hall. One of the conditions of the gift was that the architectural design shall be subject to his approval. The Council expressed thanks to Mr. Horniman, whose letter was referred to Committee.

Trade Scholarships.—Various recommendations concerning the scholarship system were discussed, including one to the effect that the number of trade scholarships to be awarded should be gradually increased as the accommodation of the trade schools permits until the number, in addition to those already authorised, reaches approximately 300.

Upon this Mr. Dove moved the addition of the words "without expressing any opinion as to how far the old system of apprenticeship can be revived." His contention was that though the apprenticeship system had almost died out, except in certain indoor trades, there was still a desire on the part of parents in favour of it. He did not wish to criticise the trade scholarships, but he did feel that to a great extent the cost was a waste of money. He attributed the failure of the trade scholarships largely to the fact that many of the individuals who were associated with the management of polytechnics, and who had not themselves had any trade experience, seemed to think that apprenticeship and polytechnics would not go well together. By a carefully prepared system of apprenticeship arrangements might be made whereby children could leave school to enter workshops. However efficient schools were, it was not possible for boys to acquire in them what he would term the "workshop experience." A properly graded system of apprenticeship was needed. It was not fair to expect boys, after their day's work, to attend trade schools. Good tradesmen could not be made by polytechnics alone. It would be much better to have a system of grants so that parents could apprentice their boys in the old-fashioned way.

Mr. H. R. Taylor seconded the addition, expressing agreement with Mr. Dove that it was a hardship that boys should have, after a hard day's work, to attend trade classes.

Mr. Jackson, Chairman of the Council, said he would accept the addition, and the Council acquiesced.

Ground Plan of London.—In reply to a question, Mr. Pilditch stated that the ground plan of London was now almost completed. Of the 115½ square miles which comprised the County of London, 113 had been placed on the plan. Altogether there were 34,600 landowners. Sixty square miles were owned by 187 owners, and the Crown, the County Council, the Ecclesiastical Commissioners, and the City Corporation formed one-third of these 187 owners. Of the remainder, the average ownership averaged one acre per person. A considerable portion of those owned each one house or plot only.

The Sewer Contract Difficulty.—With reference to the tenders for the construction of the southern low-level sewer from Deptford to Battersea, the Main Drainage Committee recommended that new tenders should be invited. As has been reported in the *Builder*, at the last meeting of the Council Messrs. Shellabear & Son, who submitted the lowest tender of 473,416*l.*, withdrew, explaining that this was in consequence of being unable to place the order for cast-iron at the price they anticipated.

Mr. Salmon suggested that the tenders should be for the construction of the sewer in sections.

Mr. Johnson moved an amendment that the Council should do the work by direct labour.

Mr. Smith (Deputy Chairman) seconded the amendment, the course thereby suggested being the best to adopt in view of the existing circumstances of this matter. Not only had the lowest tenderer withdrawn, but the next tenderer had also withdrawn. The Engineer's estimate was known, and under the circumstances it was not advisable to ask for fresh tenders. He would not suggest any conspiracy in this matter, but urged that the Council should decide to do the work by direct labour. They had their manager, who could easily get his staff together. That would be the best course to prevent the Council getting in the hands of a ring. The contractors should be given to understand that it was possible, when there were exceptional circumstances, to do without them.

Mr. Easton said the Committee were able to deal with any unforeseen incidents which might arise with contractors, and there was no justification to use this occurrence as a reason for reintroducing the Works Department, which in the past had been so disastrous for London. The Committee were not going to hand over the Council to the contractors.

Mr. Ward urged that the sewer should be made by direct labour.

Mr. Cohen said he had never been able to understand why the Council published the list of prices tendered by contractors.

Mr. Gilbert spoke of the good work accomplished in the past by the Works Department, which was especially able to carry out sewer work. The Progressives declared that if the Works Department were abolished the Council would fall into the contractors' rings, and this incident seemed to show the truth of that prophecy.

Mr. Taylor (Hampstead) said it was unfortunate that the Council were getting these withdrawals of tenders. He suggested that in future heavy penalties should be imposed on contractors who withdrew. That could easily be carried out by requesting those who tendered to deposit a certain amount of guarantee money with the Council.

Sir John McDougall said, when a man withdrew a tender which was 7,000*l.* below the Engineer's estimate, and the next tender was 25,000*l.* above the estimate, there was a difference of 32,000*l.*—which was a great temptation to make "some little arrangement." These things happened before the establishment of the Works Department, and were happening again now that the Works Department had been destroyed. The contractors now seemed to be taking advantage of the abolition of the Works Department. The Council of the greatest Municipality in the world should take care that there was no chance of the possibility even of gerrymandering with tenders.

Mr. White (Vice-Chairman) explained that in the case of this sewer the point to be remembered was that since the tenders were sent in there had been an excessive rise in the price of iron. There was nothing in the point about the Engineer's estimate having been published. Contractors were not foolish, and did not base their tenders on engineers' estimates, but went carefully themselves into the specifications. He would never support the reintroduction of the Works Department, which in the past had been an extravagant and wasteful department.

Mr. Hunter recalled the fact that on a previous occasion when the Council had to invite fresh tenders all the contractors again sent in prices, and all were lower than their first prices. This fact should indicate that by getting fresh tenders in the case of this sewer it was not likely that the Council would find that the contractors wanted more.

Mr. Robinson declared that nothing had been adduced to indicate that there was any ring of contractors.

Sir John Benn said when the Progressives were in power and a similar instance occurred they got the work done by the Council's own Engineer, and the cost was 66 per cent. below the contractors' prices.

Eventually it was agreed to obtain fresh tenders for the sewer, in sections.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

A MEETING of the Advisory Committee was held at the Bureau Offices on October 7.

The formation of a Colonial Architects' Bureau was discussed and decided to be proceeded with.

It is proposed shortly to hold a meeting of architects who have been in the Colonies and have special knowledge of Colonial requirements, and the Secretary will be pleased to hear from any who may be willing to attend this meeting.

It is felt that architects in the Colonies are generally very much out of touch with up-to-date building trade matters and materials and fitments, and by affording this information and also in many other ways a Colonial Architects' Bureau could be of great service.

The next meeting of the Selection Committee will be held at the Bureau Offices on Tuesday, November 2. Manufacturers desiring to submit goods to that Committee should communicate without delay with the Secretary, Technical Bureau Buildings, 24, Hart-street, Bloomsbury, W.C.

Architectural Societies.

NORTHERN ARCHITECTURAL ASSOCIATION.

An outdoor meeting of the Northern Architectural Association was held on Saturday last in the neighbourhood of Denton. There were upwards of thirty members and students present, including Mr. G. T. Brown, the President. The party assembled at Scotswood Council Schools, where Mr. Graham, the Clerk of Works to the Newcastle Education Committee, explained various matters of interest in the unavoidable absence of the architects, Messrs. Fenwicke and Watson. On leaving the schools the party proceeded to Denton Hall, which is a most interesting example of early XVIIth century domestic architecture and contains many features of particular interest to architects. On arrival at the Hall members were received by Mr. Forster Armstrong, who is now in residence at the Hall, and who gave a most cordial welcome, and explained the many features of interest in the Hall. After a careful inspection of the house and gardens the party were entertained by Mr. Armstrong, who was accorded a hearty vote of thanks.

TRINITY COLLEGE, CAMBRIDGE.—On Tuesday, October 19, will be unveiled in the ante-chapel the statue of the late Lord Tennyson which Mr. and Mrs. H. Yates Thompson have presented to the college. The sculptor of the statue is Mr. Hamo Thornycroft, R.A.

Digitized by Google

OCTOBER 16, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 12s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 13s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, OCTOBER 15.

Architectural Association Debating Society.—Debate on "Competitions, Open v. Limited." 7.15 p.m.

Junior Institution of Engineers.—Visit to the Model Engineer Exhibition, Horticultural Hall, Westminster. 7 p.m.

Institute of Metals.—Autumn meeting, Manchester (concluded). 10 a.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Science: Physics, Chemistry"—III. 7 p.m.

Institution of Mechanical Engineers.—Professor W. E. Dalby on "Heat Transmission." 8 p.m.

SATURDAY, OCTOBER 16.

Institution of Municipal Engineers.—Visit to Works of the Associated Portland Cement Manufacturers (1900), Ltd., at Northfleet.

Incorporated Association of Municipal and County Engineers.—South Wales District Meeting, to be held at Cardiff.

MONDAY, OCTOBER 18.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Science: Physics, Chemistry"—IV. 7 p.m.

Junior Institution of Engineers (Royal United Service Institution, Whitehall).—Annual general meeting at 7 p.m., followed by annual general meeting of the Benevolent Fund. At 8 p.m., a paper on "The Reinforced Concrete Construction of the new General Post Office Buildings, London," by Mr. T. A. Watson, Assoc.M.Inst.C.E.

TUESDAY, OCTOBER 19.

University of London (Carpenters' Company University Lectures on Architecture).—Mr. Halsey Ricardo will deliver the Public Inaugural Lecture of his course on "The Renaissance of Architecture in Italy." 6 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. III.—"Egyptian Temples, Obelisks, and Dwellings"—II. 4.30 p.m.

Institute of Sanitary Engineers, Ltd. (Students' Lecture).—Mr. G. W. Chilvers on "Building Construction, so far as it relates to Sanitation." 7 p.m.

WEDNESDAY, OCTOBER 20.

Builders' Foremen and Clerks of Works' Institution.—Quarterly meeting of the members. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Science: Physics, Chemistry"—V. 7 p.m.

THURSDAY, OCTOBER 21.

Carpenters' Company, London-wall (Lectures on Sanitary Building Construction).—Mr. A. Wynter Blyth on "Sanitary Arrangements of a Building." 7.30 p.m.

FRIDAY, OCTOBER 22.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. L. Watson on "The Autobiography of a Cathedral." 8 p.m.

The Architectural Association.—Mr. F. D. Clapham on "The Architectural Association Excursion to Cheltenham and District, 1909." 7.30 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "Calculation, Measurements, and Plans and Sections." 7 p.m.

SATURDAY, OCTOBER 23.

Junior Institution of Engineers (Caxton Hall, Westminster).—Conversazione, 7 p.m.

THE GRADIOGRAPH.

THIS is the name of a new instrument now being introduced by Mr. A. G. Thornton, of Manchester, for the purpose of reducing the labour involved in drainage work, road construction, and other operations involving the execution of work to a given gradient.

The instrument is essentially an adjustable spirit-level of special design and construction, by whose aid any gradient between the limits of 1 in 30 and 1 in 305 can be accurately read. It can also be applied as an ordinary level by a slight adjustment.

The gradiograph consists of a rectangular casing, 36 in. long by 3 in. wide by 1 in. thick, made of nickel aluminium, a white non-corrosive alloy combining extreme lightness with great durability. The interior of the casing is accurately machined, and fitted with a graduated steelyard working on a pivot near one end. Above the pivot and connected with the steelyard is a sensitive level similar to those attached to surveying instruments. The calibrated portion of the steelyard is provided with a gunmetal cursor, with hardened steel runner, and at the extreme end of the steelyard there is a notch permitting the instrument to be employed as a very accurate level when the cursor has been moved beyond the graduated scale.

To arrange the instrument so as to indicate any required gradient within the range of the scale it is only necessary to set the zero line of the cursor opposite the gradient in question. The bubble will then come to the centre of the tube as soon as the instrument is inclined to the predetermined slope. Having effected an adjustment such as that indicated, the cover of the casing, which slides in V-shaped grooves, can be put back into place and secured by means of a Yale lock, thus making the apparatus watertight and preventing the workman using it or any unauthorised person from tampering with the interior mechanism. Feet of case-hardened steel are fitted to the under side of the casing, and slightly curved in order that the apparatus may stand on the invert of a pipe. The bubble of the level is visible through a piece of crystal glass let into the top of the casing, the whole instrument being supplied in a mahogany box.

We have examined and tested a specimen of the gradiograph, and consequently are able to speak from personal experience upon the excellence of its manufacture and the accuracy of the readings obtained. The principal advantages claimed for the appliance in drainage and sewage work are the following:—It is applied on the invert of the pipe, thus giving an index to the gradient along the actual surface of the conduit, and it is specially suited for use in cases where pipes are laid in a heading; drains and sewers laid by its aid have exactly the same fall throughout, thereby insuring a perfectly self-cleansing conduit; any irregularities on the invert, at the spigot or socket of the pipe, can be at once detected and suitably allowed for; work can be conducted at any time instead of being interfered with during fog or darkness, as under the ordinary method of boring; sight rails and the travelling rod are entirely dispensed with, the work of adjusting and aligning the pipes being done by one man instead of three men as necessary heretofore.

The instrument is available for various other purposes coming within the province of architects, surveyors, and engineers, to whom, as well as to contracting firms, we can recommend it as a useful labour-saving appliance.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Street Paving.—Mr. Samuel Alderton moved that the Streets Committee be requested to report fully as to the recent repaving of Gresham-street. He asserted that streets were torn up before there was any necessity for it. Even if a street did not require renewal, it was, to the detriment of traders, and at great expense, torn up when the period of the contract for maintenance expired. Mr. Stopher, the Chairman of the Committee, in his reply, denied that this was so. A thoroughfare often became so full of hills and dales that efficient repair was out of the question, and complete renewal was necessary.

Leadenhall-street.—It was agreed, on the motion of Mr. Deputy Pearse Morrison, to instruct the Improvements and Finance Committee to report fully, after making exhaustive inquiries, as to the desirability or otherwise of widening Leadenhall-street at the eastern end, a portion of the roadway there being only 17 ft. wide.

Dangers of Match-boarding.—A letter was received from the City of London, relative to an inquest held concerning a fire at No. 14, London-wall, on September 17, enclosing a copy of their verdict, to the effect that the fire started in the lift, but that the cause is unknown, and that the jurors strongly recommend that all businesses of a dangerous nature should have no match-boarding to walls or lifts. The matter was referred to the Streets Committee.

Proposed Improvements at the Guildhall.—A report was brought up, but its consideration adjourned, by the City Lands Committee as to the general improvement of the accommodation at Guildhall, suggesting the erection of an addition of three stories over the library corridor on the east side of the porch, together with the opening up and clearing of the crypt (to render it suitable for use as an adjunct to the museum), and further suggesting the utilisation of certain vaults under Guildhall as Bridge House strong-rooms for the Comptroller, at an estimated cost of 3,800*l.*

Presentation to the Art Gallery.—The Library Committee reported the presentation, by Mr. Joseph Pennell, to the Art Gallery of thirty-one etchings by himself of well-known places in London.

Fifty Years Ago.

FROM THE *Builder* OF OCTOBER 15, 1859.

METROPOLITAN BOARD OF WORKS.

EMBANKMENT OF THE THAMES.

At a meeting of the Board on the 7th, Mr. Doulton, pursuant to notice, moved—

"That the consideration of the propriety of constructing a Thames embankment, in conjunction with the low-level sewer on the north side, be referred to the Main Drainage Committee, and they may be authorised to confer with her Majesty's Government and the Admiralty on the mode in which the cost of such embankment might be defrayed, and with the Thames Conservancy Board thereon."

He said that his motion would not pledge the Board to adopt the idea of the embankment of the Thames. It merely was his opinion that the Board should have full information upon the subject.

Mr. Bristow, M.P., seconded the motion. It was a most important matter for the Board to have the fullest information relating to it.

Mr. Alderman Cubitt suggested that the Admiralty should be consulted.

Mr. Alderman Humphery considered that the embankment of the Thames was altogether impracticable. However, he thought information might be usefully gleaned upon the subject.

Mr. Tite, M.P., expressed the same opinion.

After some further discussion, in which Messrs. Freeman, Taylor, Hughes, D'Iffanger, and Carpmael took part, the motion was carried unanimously.

*** This appears to have been the first public intimation of the idea of the Thames Embankment being entertained. It will be seen that one of the members declared it to be "impracticable."—ED.

Illustrations.

THE NEW NAVE, HEXHAM ABBEY, NORTHUMBERLAND.

THESE drawings were exhibited at the Royal Academy Exhibition. The work was carried out from the design of Mr. Temple Moore. The consecration took place on August 8 of last year.

In accordance with the existing remains of the nave, namely, the south and west walls, to the height of about 15 ft., with the south and west doorways, which were sufficiently sound to warrant their complete restoration, the Late Decorated style has been adopted. The plan is one-aisled, the arrangement usual in the churches of the Augustinian Canons. It will be noticed that the easternmost of the six arches which compose the nave arcade is lower than the others, as it was here necessary to pierce one of the tower buttresses. Restorations have also been carried out in the choir—which had been much damaged by injudicious restorations about forty years ago. Excavations revealed the lower courses and foundations of the apse of the earlier Saxon church, and eastward of this were discovered traces of a larger and later Norman apse; in order that these interesting remains might be seen by visitors, a shallow basement has been formed, with a trap-door entrance from the choir. The traceried panels of the wooden closed choir-screen, which would have completely isolated the nave from the choir, have been hung on hinges, so that they may be opened inward during divine service.

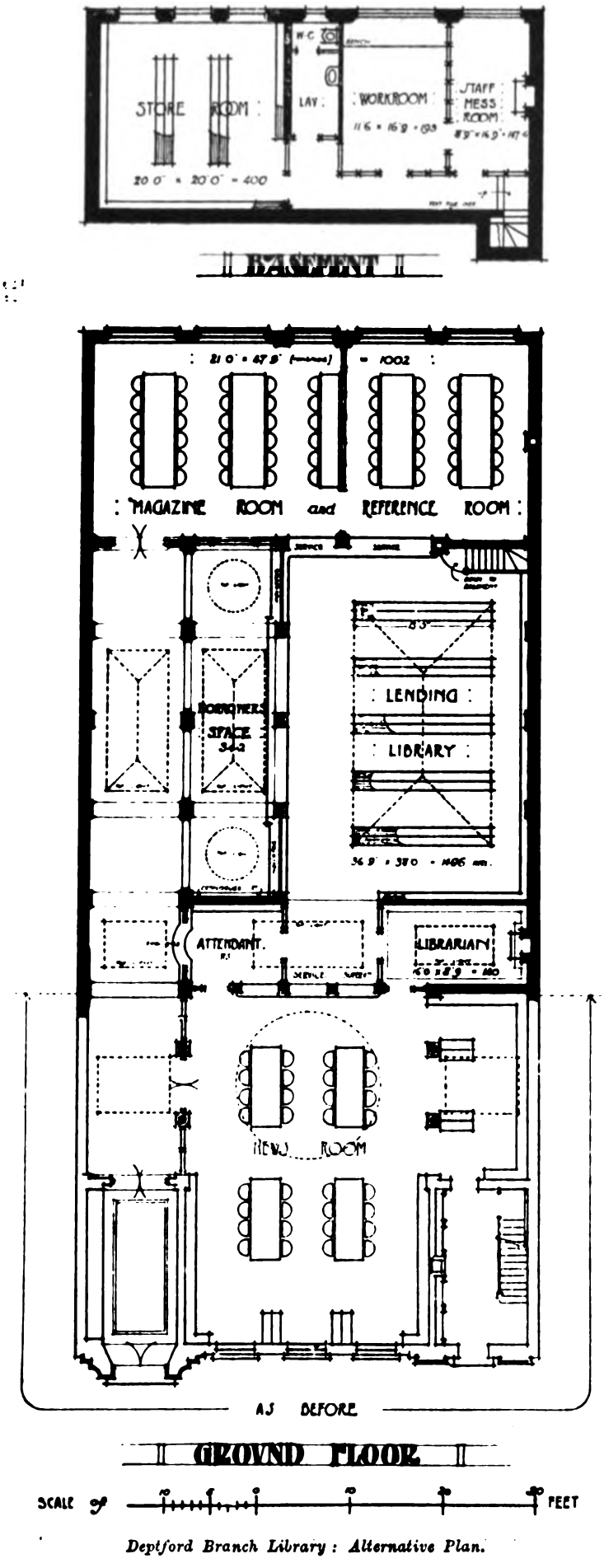
Digitized by Google

DEPTFORD BRANCH LIBRARY.

We give this week illustrations of the design by Messrs. Castle & Warren, selected in competition for the new Branch Library at Deptford.

Concerning their intention in the design, the architects write:—

"Our object, in the first plan, was to shorten the main corridor as far as possible, with a view to reducing the traffic way to a minimum, but it is possible that the alternative plan will be adopted on account of the simpler arrangement of the magazine and reference rooms The lavatories are thus placed in the basement, which is more desirable.



Deptford Branch Library: Alternative Plan.

The plan is generally based on simple lines, with a view to ease of control and supervision. The attendant is placed so as to control the hall and the news-room, with direct access to the lending library."

We understand that the architects have had an interview with the Library Committee this week, and it has been decided to commence the work without delay.

DESIGN FOR MODELLED LUNETTE.

The bas-relief for a Lunette in an Art Gallery is the work of Mr. W. H. Wright, of the Nottingham School of Art, and received a gold medal in the last National Art Competition.

The subject of the design is "Art." The size of the model is 6 ft. by 3 ft., being one the quarter the full size intended in execution. The central figure holding a model of a temple represents "Architecture." "Sculpture" and "Pottery" are represented in the groups on the left, and "Painting" and "Music" on the right. The man on the left of "Architecture," with hammer and anvil, represents metalwork.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY:

Presidential Address.

On Thursday last week, in Caxton Hall, Westminster, Mr. W. Noble Twelvetrees, M.Inst.M.E., delivered his Presidential address to the members of the Civil and Mechanical Engineers' Society. He said that the Society, which had just completed the first half of its life as a technical organisation, was in a very sound position, but in spite of that it was proposed to join forces with the Society of Engineers. The two projects were virtually one, resulting from the deliberations of the Joint Committee of the two Societies under the Chairmanship of Professor Henry Adams, and which foreshadowed the incorporation of an entirely new organisation, to be entitled the Society of Engineers (Incorporated), empowered to take over the work and property of the Society of Engineers founded in 1854 and of the Civil and Mechanical Engineers' Society founded in 1859. The incorporated Society would not arise from the ashes of two defunct bodies. It would come into existence by the voluntary union of two associations full of vitality, drawn together by similarity of aim and by the firm belief that united effort would be to the advantage of all concerned. It was the hope of the Council that the scheme of incorporation would be carried through, though they were fully prepared to continue alone with absolute confidence. He desired to express the indebtedness of the Society to the Honorary Secretary and fellow-member, Mr. A. S. E. Ackermann, for the great amount of work he had performed in preparing for consideration drafts of the rules and by-laws intended to govern the operations of the incorporated Society, and for the tactful manner in which he had acted as the official intermediary between the two organisations concerned. He (the President) had pleasure in directing attention to the valuable work done by Professor Henry Adams, a Past-President of both Societies, and by Mr. R. H. Willcocks, who had acted as our Honorary Solicitor for a long period of years. The Memorandum and Articles of Association, embodying the constitution of the new Society, were drafted, like those of the Institution of Mechanical Engineers, the Institution of Electrical Engineers, and other important institutions, in accordance with the provisions of the Companies Acts, the object gained by taking advantage of those statutes being the assured legal status of the association indicated. In the title "The Society of Engineers (Incorporated)" they had a permanent record of the fact that a new Society was about to be brought into existence.

The objects of the proposed corporation as defined in the Memorandum of Association needed no comment, for they were virtually

the same as those which had been consistently before the Society of Engineers since December, 1857, and the Civil and Mechanical Engineers' Society since May, 1859. An important point to be noted, however, was that the incorporated Society would possess legal rights never enjoyed by either of the informal associations. Turning to the Articles of Association, he might mention first that four classes of corporate members and one class of non-corporate associates were contemplated, instead of three classes as heretofore. The class of members was retained; existing associates were eligible for election into the new class of associate-members—a new class of associates being formed for those not qualified professionally or by reason of age for the privileges of corporate membership; the new class of fellows provided a mark of distinction for members qualified by adequate professional training and experience and by examination, the only exceptions contemplated being those in favour of Presidents and Past-Presidents and members of Council; the new class of honorary fellows superseded that of honorary members, and involved no change beyond a slight alteration of style. The proposed creation of fellows was one distinctly calculated to benefit the incorporated Society, because it would establish a class of members known to have complied with recognised standards of general education, technical knowledge, and personal experience. The growing recognition of engineering institutions and societies by Government departments and public authorities was certainly a strong reason for the establishment by the proposed incorporated Society of the special class of members qualified by examination as well as by engineering training and experience.

Passing next to the constitution of the Council of the incorporated Society, he was pleased to say that, owing to the large number of new members elected to the Civil and Mechanical Engineers' Society during the past two years, the Society had become entitled to a very strong representation, comprising four ordinary members of Council and two Past-Presidents—the former chosen by seniority of election to our present Council, and the latter being the two last Presidents of this Society. A further satisfactory detail was that one of the members of the present Council had been nominated by the two Councils as one of the Vice-Presidents. An additional illustration of the equitable manner in which the interests of the Society had been studied was furnished by the clauses entitling all members and associates of this Society to become corporate members of the incorporated Society without entrance fee, and during the first three years to pay lower annual subscriptions than those stated in the general schedule.

By entering into the arrangement proposed they would give up nothing but their separate existence, which also would happen to the Society of Engineers, and thereafter the members of both associations as existing to-day would be jointly the founders of the new corporation which there was every reason for believing would soon justify its right to be classed among the great institutions representing the engineering profession in this country.

He could not avoid the conclusion that if carried into effect the union of the two organisations concerned would be an unmixed blessing. It would constitute the first important step towards the alliance of engineering societies having the same objects in view—a consummation whose desirability was urged in his address of last year. The position of the engineering profession to-day was such that it would not be fully represented by any one of the existing institutions. The scope of the Institution of Civil Engineers was sufficiently catholic for the inclusion of all engineers possessing the requisite qualifications. Separate institutions representing one profession would continue their separate existence, but there was no reason why independent organisations should not enter into bonds of union one with another, for the purpose of furthering the good work conducted by all.

He took the opportunity of advocating once more the effective co-operation of engineering institutions and societies. It was very easy to suggest ideas of the kind, and very difficult to get them carried out. Such a task was immeasurably beyond the power of any one organisation. It was quite possible, however, for one energetic Society to accomplish something in the way of unification on the lines of the affiliation scheme embodied in the by-laws of the Royal Institute of British Architects, approved by the Privy Council in February, 1889. The architectural profession was excellently organised, the Royal Institute having established intimate relations with the principal local institutes and societies, which, although not creating a vast association like that of the German Society of Engineers, or the Austrian Society of Engineers and Architects, nevertheless went a long way towards securing the effective union of the organisations concerned. The only action of similar character with which he was acquainted was that which brought into existence the Institution of Mining Engineers, a body including the North of England Institute of Mining and Mechanical Engineers, the North Staffordshire Institute of Mining and Mechanical Engineers, the Midland Institute of Mining, Civil and Mechanical Engineers, the South Staffordshire and East Worcestershire Institute of Mining Engineers, and the Mining Institute of Scotland. The constitution left independent action to each institute as before, but all papers read were published in one journal, and each institute paid a capitation grant to the central body, which, comprising some 3,000 members, was able to deal with matters affecting the interests of mining engineers far more authoritatively than a number of isolated institutes each with a small membership roll.

The examples set by the Royal Institute of British Architects and the Institution of Mining Engineers might well be followed by the alliance of the many engineering societies existing in various parts of Great Britain with each other and with a central Society in the metropolis. If the Civil and Mechanical Engineers' Society should decide to abstain from the scheme of union now before the members, the work of unification to which he now alluded was one that would deserve serious consideration. But it could be attempted with greater prospects of success by the proposed Society of Engineers (Incorporated). Assuming the foundation of that organisation, he thought there should be no serious difficulty in the way of linking up all unattached provincial associations as societies allied with the Society of Engineers (Incorporated). At the present time there were probably more than thirty local bodies of the kind. Adding to these the engineering societies attached to universities and colleges, they had ample material for the creation of a combination of several thousands of members, associates, and students. If these various organisations were once allied one with another, and at the same time with the proposed incorporated Society of Engineers, a great step would have been taken towards the consolidation of the engineering profession. The commanding position of a Society embodying a large portion of the engineers of Great Britain should facilitate the ultimate alliance of the institutions representing special branches of engineering practice, and lead at last to the organisation of the profession on a scale worthy of the importance which it had justly acquired.

On the motion of Mr. E. H. G. Brewster, seconded by Mr. J. Kennedy, member of Council of the Society of Engineers, a hearty vote of thanks was accorded to the President for his address.

Subsequently some discussion took place bearing on the President's address, in which Messrs. Thomas, E. F. Etchells, A. S. E. Ackermann (Secretary), and C. Grant took part.

Mr. Etchells, referring to the President's remarks as to the allied Societies of the Royal Institute of British Architects, said he thought engineering societies should be linked up on specialist lines rather than on geographical lines. The architect stood between the artist and the engineer and linked up the two, and there was but one general branch of work for him, and that was certainly not the case in regard to the engineering profession.

The President said that the Canadian Society of Engineers was founded on those lines. It consisted of four Societies in itself, and each branch had its own meetings and papers; but the four constituted the one Society, and this Society was empowered to grant certificates to engineers, without which they could not practise as civil engineers in the provinces of Quebec and Manitoba.

Mr. Ackermann, referring to the voting of the members of the two Societies as to amalgamation, said that already over a quarter of the members of the Societies had voted, and not a single vote had been recorded against the scheme. He did not altogether agree with Mr. Etchells, as he thought that a geographical as well as a specialist linking up would be desirable, as it would be necessary to have local branches still.

Mr. Grant said they should break down the practice of manufacturing firms giving free advice to clients.

A vote of thanks having been accorded to the Secretary, Mr. Ackermann, it was announced that he would read a paper on the 4th prox., entitled "Technical Popular Fallacies."

The meeting then terminated.

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A HOME Counties District meeting of the Association of Municipal and County Engineers was held at the Guildhall, Winchester, on Saturday, October 9.

Mr. W. Nisbet Blair, St. Pancras (President), was in the chair, and there were present—Messrs. H. P. Boulnois (Local Government Board), A. E. Collins (Norwich), J. Lemon (Southampton), W. Weaver (Putney), C. H. Cooper (Wimbledon), T. W. A. Hayward (Battersea), S. H. Chambers (Hon. Secretary), T. Cole (Secretary, London), W. V. Anderson (Winchester), J. H. Blizard (Southampton), W. Butler (Fareham), R. Brown (Southall), G. F. Carter (Winchester), E. H. Crump (Hinckley), N. H. Dawson (Banbury), W. W. Cooper (Slough), F. R. Phipps (Basingstoke), F. H. Parr (Lymington), F. W. Pearce (Twickenham), J. Stevenson (East Molesey), H. Shillington (Lurgan, Ireland), W. J. Tail (Sudbury), H. C. J. Edwards (Lambeth), W. Fairley (London), P. J. Harrison (Dorchester), G. B. Hartfree (Alton), F. Harris (Tonbridge), G. Winship (Abingdon), J. W. Webster (Cowes, I.W.), P. J. Killick, J. H. Norris (Godalming), J. P. Norrington (London), C. H. Lawton (Warminster), F. J. Lobley (Chichester), S. J. Newman (Poole), members.

The Mayor (Mr. F. W. King) welcomed the members of the Association to the City.

The President briefly acknowledged the reception.

On the proposition of Mr. Cooper (Wimbledon), seconded by Mr. W. V. Anderson (Winchester), Mr. H. S. Chambers (Hampton) was re-elected Hon. Secretary for the Home Counties District.

Sewage and Waste Liquors.

Mr. J. P. Norrington (London) presented a paper on the separation of solids from sewage and waste liquors. In the Fifth Report of the Royal Commission on Sewage Disposal, he said, it was clearly demonstrated that of all the processes for the treatment of sewage which were commonly in use to-day that which cost the least in up-keep had for its preliminary process quiescent settlement without chemicals. On

Digitized by Google

the other hand, the initial cost of the tanks required was higher than all but one of the five preliminary processes compared in the Report. The area of filter required, however, to follow the preliminary quiescent settlement tanks was found, as a rule, to be considerably less than with most of the other processes; in other words, the greater the percentage of suspended solids removed the larger was the volume of sewage that could be treated on the same area of filter; in fact, throughout the Report the elimination of the suspended matter from sewage before allowing the flow to pass on to the filters or into a stream, or by way of storm-water overflows, was considered a matter of the highest importance. Any means, therefore, which could be successfully and economically adopted for the removal of the suspended matter were well worth their consideration. If at the same time they facilitated the handling of the solid matter or sludge, that would also be of advantage.

His object was to bring before their notice one or two arrangements for attaining these ends which were being successfully worked on the Continent and in this country.

The first of these, like many other good as well as indifferent things, came from Germany, and was known there as the Kessel, the name probably being derived from the boiler-like shape of the apparatus. Its main feature was a vertical cylinder with an inverted cone-shaped bottom and a cone-shaped or domed top. This was fixed on wrought-iron or brick supports above the level of the flow of sewage to be treated. The apparatus was so arranged that the flow was siphoned through this cylinder with a loss of 2 or 3 in. only in the level of the sewer.

The action of the apparatus was as follows:—The large cylinder, or Kessel, having first been filled with water, and the three chambers into which the legs of the siphons were conducted filled sufficiently to trap the legs, and the valves in the legs opened, siphonic action at once commenced, and the sewage, finding its way into the inlet chamber, passed up into the Kessel. The shape of the inlet pipe deflected the solids in suspension towards the bottom of the inverted cone, and the coarser and heavier solids at once found their way through the deposit pipe into the centre chamber; the lighter solids, on the other hand, rose to the top of the Kessel, while the liquid still carrying a large proportion of fine solids in suspension commenced to gradually rise in the Kessel. These finer solids were gradually dropped during the slow upward rise of the sewage in the large cylinder or Kessel, and before the level of the outlet connected to the long arm or discharge pipe was reached practically all the solids in suspension had been left behind, and the effluent leaving by the discharge pipe was quite free therefrom.

The heavier solids, on reaching the bottom of the Kessel, were diverted by the inverted cone-shaped bottom to the central or deposit pipe, and through this into the chamber. This latter might be extended to a size sufficient to hold any desired quantity of solids. It was a curious fact that as this chamber filled with the solids the liquid portion of the contents passed out through the same pipe by which the solids entered; consequently this chamber might be worked until the percentage of liquid left was sufficiently small to enable the solid contents to be handled with comparative ease.

The section of the suspended solids which had a less specific gravity than water accumulated on the under side of the dome cover of the Kessel, and were easily withdrawn therefrom by opening the discharge pipe for gas and fat, closing the valves in the three siphon legs, and turning on the water supply.

The liquid portion freed from solids in suspension passed off through the effluent carrier, either to filters or land. The rate of discharge through the effluent carrier was in exact proportion to the flow entering the inlet chamber. With some sewage the treatment by the Kessel was sufficient to admit of its being passed direct into a stream.

He was of opinion that it was desirable to treat in a similar manner all sewage where it was now discharged in a crude state into the sea, as it was scarcely possible to find any important seaside resort without a sewage outfall far too close to the beach set apart for bathing.

The quantity which could be treated depended upon the size of the Kessel used and the nature of the sewage, and would vary from a flow which would produce an upward motion over the whole sectional area of the Kessel of half to one millimetre per second, or, put into English measure, from 1¼ to 2½ in. per minute. A Kessel with a diameter of 8 ft. would deal with from 2,000 to 4,000 gallons per hour, a diameter of 30 ft. 25,000 to 50,000 gallons per hour. The height was, of course, limited by the atmospheric pressure as compared with specific gravity of the liquid dealt with—that was from 27 ft. to 30 ft.

With regard to the results obtained from this class of installation, analyses showed that with waste from a paper factory 75 to 90 per cent. of suspended matter was eliminated, according to the rate of flow, whereas with slaughter-house refuse as much as 99·7 of the solids in suspension and 99·6 of fat was removed.

With an ordinary domestic sewage about 70 per cent. of the solids in suspension were removed.

These results compared very favourably with those given in the Royal Commission's Report. The best examples given of results from treatment by sedementation lands showed a removal of about 50 per cent. of the suspended solids from tanks which held as much as from ten to fifteen hours' flow.

The second type of separator consisted in its essential features of a shallow grit chamber followed by a comparatively small and shallow tank, the capacity of the grit chamber being sufficient to steady the flow of sewage and admit of the grosser and heavier solids sinking and the lighter solids rising. The exit for the grit chamber to the shallow tank following it was kept well below the surface, and the flow passing forward contained only the more finely divided solids in suspension, the specific gravity of 99 per cent. of which would be found to be slightly in excess of water in almost all sewages.

In the somewhat larger area of the tank these finer solids sunk to the bottom if the outlet from the tank was arranged so as to avoid any movement in the liquid, the velocity of which was sufficient to carry the finely divided solids forward with it. To put it in other or more familiar words, there must be no movement in the tank with what they would call in a sewer "a self-cleansing velocity."

The method by which this was attained was by dividing the flow from the tank over the edges of a large number of small channels, placed on the surface, all of which were set truly level the one with the other. The flow was thus divided over what might technically be said to be a very long length of weir. The velocity of the approach to the weir was so low that even the finely divided solids were left behind if their specific gravity was the least in excess of water.

In larger plants the shallow tank was divided into sections for the better regulation of the flow through same. Both the grit chambers and the shallow tanks were fitted with floors and draw-off pipes, especially designed for the easy removal of the solids.

Some remarkable results had been obtained with a plant of this type at Dorchester, where at least 25 per cent. of the total volume of the sewage was brewery refuse. The proportion of suspended solids removed from the crude sewage in this manner was as high as 96·5 per cent., and at the same time the purification effected on the albuminoid ammonia figure was 74 per cent., and on the oxygen consumed figure 89·9 per cent., and that with filtration of any description.

Such results compared very favourably with those produced by many complete installations of tanks and filters. If equally good results could be obtained from a weak or dilute sewage, it appeared to him that subsequent filtration or treatment of any kind was superfluous.

Another very considerable advantage, especially in small town installations, was that this type of plant enabled the solids or sludge to be dealt with day by day, instead of allowing it to accumulate until the volume was so great that to deal with it entailed the employment of a considerable amount of extra labour. Taking it day by day, a single caretaker, at a small town installation, could easily do all that was necessary.

The principle involved in both these types of separators was that after the water had done its work of transporting the polluting solids from the house to the spot where they could be dealt with the sooner it was separated from the sewage solids the better. This was especially so in districts such as Winchester, where the water was from the chalk, and consequently hard. The amount of dissolved impurities taken up in solution by the water used for conveying the sewage would be very small with a plant of this sort, through which the whole flow passed in less than an hour, compared with a sedimentation or septic tank, the capacity of which varied from fifteen to thirty hours' flow.

Another point which strongly appealed to him was that the manurial value of the solids separated was correspondingly increased, as it had always appeared to him that the septic treatment of sewage had actually destroyed material that could far more usefully be used on the land.

Mr. H. P. Boulnois (Local Government Board) said he had never heard or seen the Kessel tank before, but it struck him there were merits in it. There were difficulties in ordinary tanks of being certain of the deposit of the sludge, but it was evident that given a very slow velocity of flow they were bound to deposit the sludge at the base of the tank. They would like to know the minimum velocity of flow necessary to produce this effect. There was one point that interested them more than any other, that was the cost of construction. The cost of working was practically nil, the cost of repairs was not excessive, and, therefore, the primary cost was the important matter. What had struck him was the small head they wanted between the legs of the syphon. In the construction of a thing of this kind great care would have to be exercised to prevent the introduction of air, as air would be fatal. There was always in sewage and water a considerable amount of air, and he was afraid in time air would accumulate above the siphon, and the machine would cease to work. He thought it was one of the most interesting additions to their knowledge of the sewage problem that had come to his knowledge for some time past.

Mr. A. E. Collins (Norwich), who seconded the vote of thanks, said he had never seen any suggestion of treating sewage in this way before, and it appeared to him it was an advance in tank treatment. What interested him was that not only with the Kessel, but the Commins separator, the attempt which was made to treat sewage on suitable lines, instead of storing sewage and letting it get rotten they were trying to deal with it in the freshest manner, and instead of accumulating the sewage to rot they were trying to get it out of their tanks as quickly as possible. Both these apparatus were steps in the same direction, and he thought they would lead to successful results.

Mr. J. Lemon (Southampton) said he could not help thinking after his long experience that the question of the quantity of sludge in sewage had been very much exaggerated and over-estimated. He was giving evidence before a Committee of the House of Commons on one occasion, and a country gentleman,

Digitized by Google

who did not know very much about town sewage, asked him if he could define what domestic sewage was, and he then endeavoured to do so by saying that if they had a large butt containing 120 gallons of water, and put into it the excreta of five persons, they would have town sewage. They must add the detritus which they got in a separate system from the washing of roofs and yards and roads. He thought that the heavier solid matter could be removed by the ordinary form of a shallow detritus tank. Then they came to the other matters in suspension. This is a very ingenious arrangement for dealing with that question. Then as to the size of the separator. Dealing with the other apparatus, he found on the plate that a tank 33 yds. by 18 yds. would treat 30,000 gallons an hour; that worked out at 720,000 gallons per day, practically the dry weather flow of Winchester. He questioned whether that was going to be successfully accomplished in a small apparatus 33 yds. by 18 yds. It was the endeavour of all engineers, of patentees, and designers to reduce the size of the works as small as possible to show the world what could be done in a very small space. He disputed that basis altogether. If they wanted proper filtration Mr. Boulnois hit the key of the position when he said that the velocity of the flow was the main point. All these attempts to filter water in a quick way were absolutely fallacious.

Mr. R. Brown (Southall) thought this apparatus might be useful for the treatment of waste liquors from factories. Looking at the model, he thought it required careful thought before one could say it was going to be a success or otherwise.

Mr. W. Fairley (Westminster) said it appeared an exceedingly ingenious method of carrying out the operation. At the same time he should require a little more convincing on a practical scale, for this reason—if they took an apparatus such as this and constructed on a large scale, and they had got to maintain it absolutely airtight, it was a very difficult task. Anyone who had anything to do with mechanical engineering knew how difficult it was. Minute leakages occurred at joints and other places, and there was very great difficulty. There were a great many joints going through the section of this apparatus which it was almost impossible to get made tight if the apparatus was made on a large scale. There was no question of deposit of solid matter in sewage. It was purely a matter of velocity. Was there anything different in this apparatus, given it had the cubic capacity and the velocity through it—different from any ordinary tank?

Mr. H. S. Chambers (Hampton) considered that they were indebted to Mr. Norrington for bringing before them an arrangement which had for its laudable object efficiency and economy. The most striking feature of the paper to his mind was the prominence given to the immediate removal of the suspended matter in sewage. This was indicative of the present trend of scientific thought, and probably of future practice.

Mr. P. J. Harrison (Dorchester) said as regarded the separator he was in a position to make a statement, because he happened to be at Dorchester for the last eighteen months, and the working of this particular installation had been in his particular department for that time. The separator at Dorchester was divided into four compartments, one being emptied daily, which meant that each compartment was emptied in four days. To empty that it was necessary to remove the whole of the supernascent water. To his mind that was a disadvantage. In the hydrolytic tank the sludge could be removed without disturbing the top water. He did not wish to appear too critical of this apparatus, because he recognised the good work it was doing, but he was inclined to think that the statements here made of the work it had done were rather exaggerated. The suggestion was made that after going through the separator the effluent was practically fit to go on to the filters. They found at Dorchester it was not so. The grit chambers in connexion with the separators removed 4 or 5 tons of stiff sludge a day, the separator removed a further three-quarters of a ton. He might say the population was 10,000, and the dry weather flow was 45 gallons per head, as the sewage was very diluted owing to leakages into the sewers. After it went through the separator it was heated in the old septic tank, which was used as a sedimentation tank, and a further two or three tons of sludge a day was removed in that sedimentation tank. The problem before his Council at the present time was the economical and convenient method of removing this extra amount of sludge, which was not retained by the separator, but was retained by the septic tank.

Maintenance of Rural Roads.

Mr. G. E. Carter (Engineer to the Winchester Rural District Council) presented a paper on the "Maintenance of Rural Roads in Hampshire." He said that the work of maintaining the highways of Hampshire differed considerably from other counties. The chief reasons and the difference were the nature of the subsoil and the material available from local sources for repairs. The subsoil in that district was largely of chalk, the only local material available for repairs being hand-picked flints, and in the southern portion of the district a small quantity of dug gravel. The best flints were obtained from heavy land, and if these were stacked in heaps and allowed to weather for some months their quality as a road metal was greatly improved. Among the advantages of this material was its comparative silence under traffic, and its gritty composition, which rendered it absolutely non-slipping. On the other hand, the disadvantages were many. In the winter months the surface of roads repaired with this material gave way considerably after frost, and in the summer a very short period of dry weather caused the stones to become loose, and these were quickly powdered up by the traffic. The same effect was caused by the passing of light motor-cars, the binding being extracted from between the flints by the suction of the tyres, thus causing a large addition to the dust nuisance.

Another disadvantage was the effect it had on iron. The average life of the driving wheels of a steam roller working on this material was three seasons. This compared very unfavourably with the length of service of the same wheels when working on granite, a set to his knowledge having lasted ten years.

In 1899 only 4·6 per cent. of the material used on the Hampshire roads was granite, and the district roads were repaired solely with local material. At the present time 40 per cent. of the whole material used on the main roads was made up of Rhenish basalt, English and Welsh granite, while 20 per cent. of the same materials was used on the district roads in the Winchester district alone. The change from flint to granite was rendered necessary by the great increase in the number of heavy locomotives and motor-cars using the roads. Some portions of the principal roads which were repaired with flints required coating every season. The same lengths of roads, after being coated with granite, had stood five years. The price paid for hand-picked flints delivered to the roadside depôts varied from 4s. to 6s. per cubic yard. The average price paid for breaking was 9d. per cubic yard. The cost of granite varied from 11s. to 14s. per ton, according to station, and the haulage on to the road from 6d. to 3s. per ton. Owing to the steady increase in the quantity of granite used it was becoming more and more difficult to obtain suitable binding materials, fine gravel for this purpose having in some cases to be hauled ten miles. On many of the more important roads, where the supply of hard metal available was insufficient to make good the year's wear, they had adopted the system of coating the centre of the road with granite and the sides with flints.

In the preceding year the cross-sections of any of these lengths which were considered to have too much fall and present-day traffic were brought up to the proper contour by raising the margins and filling up the low sides with gravel or flints. On those roads which carried the heavy traffic of the district it was found most economical to use Rhenish basalt or Welsh granite, broken quite cubical, and to hold well up to 2½-in. gauge, as large cubical stone certainly made less dust than flaky material, although the surface might not at first be so even as with stone broken to a smaller gauge. On the steeper gradients in the Winchester district, some of which were equal to 1 in 9, he found that Mountsorrel granite gave a good grip and presented a very even surface.

Steam rolling was usually commenced about the beginning of October, and every effort was made to complete the principal roads by the end of December, to escape the delay by frost, which was of frequent occurrence in the early months of the year, and to be ready to cope with the lengths of road which were broken up annually by the heavy traffic passing over the roads during a thaw. In the early spring of 1908 1,000 yds. of material were consumed in the Winchester district in making good the damage caused by frost.

All manual labour in the district was carried out by day workmen, and on the most important main roads each man was responsible for about four miles, which received his constant attention.

Four horse-sweeping machines were employed in the winter months; this reduced the manual labour for scraping, which was a considerable item on some of the low-lying roads.

In the summer of 1907 efforts were made to decrease the dust nuisance in the villages of King's Worthy and Twyford. Three lengths of road were coated with tarvia binder, used in conjunction with Clee Hill stone, Mountsorrel granite, and Rhenish basalt. The binder for this work was mixed at Winchester, a hot plate and tank being erected for the purpose of drying the granite chippings and heating the tarvia liquid at the old works of the Winchester Water and Gas Company. The binder was taken direct from the mixing shed and spread on the road ¾-in. thick, the granite was then spread over, and the work completed with a light roller.

The first length done had worn into holes, and would soon require attention. The other two lengths appeared to be in as good condition as when first completed. He attributed the non-success of the first portion to insufficient sweeping of the old surface, which allowed the material to creep, and to the passing of heavy military engines over the work before it was completed. In laying the second and third lengths the old road was thoroughly swept, and several small stones picked out of every square foot of road surface, this provided an excellent key for material, and although portions of it were laid on a quick slope there had been no sign whatever of creeping. These lengths of roads had been carefully watched during periods of thaw after frost, and had been found to be unaffected by the weather changes, there being no licking up of the surface at any time, and the surface was not so slippery as that of the roads painted with tar. Several lengths of road had been from time to time sprayed with various tar compounds, and he was of opinion that the life of a road constructed of good granite, broken quite cubical, could be preserved in perfect condition for some years by spraying it each summer, when the surface was bone dry, with tarvia liquid or tarvia compo. The success or otherwise of this treatment would depend largely on the manner in which the sweeping of the surface was carried out previous to the spraying. The sides of the road, where the largest deposits collected and

Digitized by Google

which retained most misture, should be thoroughly scraped and cleaned some days before the spraying was contemplated.

Mr. W. V. Anderson (Winchester) proposed a vote of thanks to the author of the paper, which was seconded by Mr. T. W. A. Hayward (Battersea), and carried.

In the afternoon visits were made to the destructor, the sewage pumping station, the cathedral, and the gasworks.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Brixton.—A building on the site of Nos. 6 and 8, Brighton-terrace, Brixton (Mr. H. P. Wyatt for Messrs. Baker & Sons).—Refused.

Finsbury, Central.—Buildings on the site of Nos. 184 to 204, even numbers (inclusive), Pentonville-road, Finsbury (Mr. C. E. Pettit for Messrs. Lilley & Skinner, Ltd.).—Consent.

Greenwich.—An addition in front of No. 72, Foyle-road, Greenwich (Mr. A. Roberts for Mr. G. W. Gordon).—Refused.

Hackney, North.—Houses on the eastern and western sides of Moundfield-road and the western side of Castlewood-road, Hackney, with the flanks of two of the houses to abut upon Ravensdale-road (Mr. P. Roche).—Consent.

Holborn.—A sign at No. 232, Tottenham Court-road, Holborn (Mr. F. R. Betenson for Messrs. J. Tylor & Sons).—Consent.

Holborn.—A projecting sign in front of No. 285, High Holborn (Mr. A. Whitelaw for the London and North-Western Railway Company).—Consent.

Holborn.—Balconies and cornices in front of a building to be erected upon a site abutting upon the western side of Kingsway and the southern side of Kemble-street (Messrs. J. S. Gibson, Skipworth, & Gordon for Messrs. L. & C. Hardtmuth, Ltd.).—Consent.

Islington, North.—A one-story building at the western end of Ingleby-road, Islington (Mr. W. F. Croot for Miss Jenkins).—Consent.

Kensington, South.—A porch and balcony in front of No. 22, Holland-park, Kensington (Messrs. Kemp & How for the Trustees of the late William Radford).—Consent.

Lewisham.—A building on the south-eastern side of Lewisham High-street, to abut upon the north-eastern side of Court Hill-road, so far as relates to the construction of a covered area in a portion of the land to be dedicated to and left open for the use of the public (Temperance Billiard Halls, Ltd.).—Consent

Marylebone, East.—A porch in front of No. 19, Avenue-road, St. Marylebone (Mr. A. F. Faulkner for Mr. W. Willett).—Consent.

Marylebone, East.—A porch in front of No. 23, Avenue-road, St. Marylebone (Mr. A. F. Faulkner for Mr. W. Willett).—Consent.

Norwood.—That the Council, on the application of Messrs. Carl Hentschel, Ltd., do extend the licence in respect of the temporary iron and glass shelter in front of No. 160, Knight's Hill-road, Norwood, for a period of three years from July 17, 1909.—Agreed.

Norwood.—A deviation from the plan approved for the erection of eight houses on the south-western side of Poplar-walk, Herne Hill, so far as relates to the erection of two chimney breasts at the flank of the north-westernmost house (Messrs. R. Ellis & Son).—Consent.

Paddington, South.—Scullery addition under the porch in front of No. 20, Lancaster Gate-terrace, Paddington (Messrs. E. Wimperis & Best).—Consent.

Paddington, South.—A wood, iron, and glass porch in front of Nos. 41 and 43, Woodfield-road, Paddington (Mr. T. J. Fox for Mr. W. Montgomery-Wilson).—Consent.

St. George, Hanover-square.—A lodge building at the entrance to "Mortimer House," Halkin-street, St. George, Hanover-square (Waring & White (1906), Ltd.).—Consent.

Wandsworth.—Houses, with projecting halls and windows, on the eastern side of Strathbrook-road, Streatham (Messrs. Hill & Tyler).—Consent.

Wandsworth.—One-story shop at No. 97, Clapham Park-road, Clapham (Mr. J. W. G. Whyte for Mr. P. Meredith).—Consent.

Wandsworth.—Bay windows and porches to six houses on the north-western side and six houses on the south-western side of Hilldown-road, Wandsworth (Mr. H. E. Davey for Mr. G. J. Philpot).—Consent.

Wandsworth.—Buildings on the eastern side of Ramsden-road, Wandsworth (Mr. J. H. Tupper).—Refused.

Wandsworth.—A building on the western side of High-road, Streatham (the Temperance Billiard Halls, Ltd.).—Refused.

Wandsworth.—A building on the north-western side of Vant-road, Tooting, to abut upon the south-western side of Totterdown-street (Mr. W. Bartholomew).—Refused.

Westminster.—Retention of an illuminated sign in front of the Albert public-house, No. 52, Victoria-street, Westminster (Mr. H. W. Ford for the Metropolitan District Railway Company).—Consent.

Woolwich.—Porches at Nos. 82, 84, 86, 88, 90 and 92, Dumbreck-road, Eltham-park (Mr. J. J. Bassett).—Consent.

Woolwich.—Bay windows to four houses on the southern side of Glenlyon-road, Woolwich (Mr. J. J. Bassett for Mr. A. Cameron Corbett).—Consent.

Width of Way.

Chelsea.—That the application of Mr. J. Kirklank, for an extension of the periods within which the erection of a projecting bathroom at the rear of No. 33, Lowndes-street, Chelsea, was required to be commenced and completed, be granted.—Consent.

Islington, North.—A one-story building at the rear of No. 100, Palmerston-road, Holloway, with a boundary fence at less than the prescribed distance from the centre of the roadway of Fonthill-mews (Mr. H. Brown for Mr. W. S. Hoare).—Consent.

Lambeth, North.—A building abutting upon the south-eastern side of Oakley-street, Lambeth, and the north-eastern side of Tanswell-street, such building to be inhabited in part by persons of the working class, to be erected at less than the prescribed distance from the centre of the roadway of Tanswell-street, and to exceed in height the width of such street (Messrs. Cayley & Rochester for Mrs. A. L. Charre).—Consent.

Limehouse.—A building on the western side of Glasshouse Fields, Limehouse (Messrs. Pearson & Milburn).—Refused.

Strand.—Buildings on the western side of Charing Cross, Strand, southward of No. 49, Charing Cross, at less than the prescribed distance from the centre of the roadway of Spring-gardens (Messrs. Hayward & Maynard for Mr. G. J. Drummond).—Refused.

Width of Way and Lines of Frontage.

Chelsea.—A building at the rear of No. 64, Sydney-street, Chelsea, to abut upon the western side of Bury-street (Mr. J. Codrington for Mr. Spears).—Refused.

Hackney, South.—A one-story shop in front of No. 24, Mare-street, Hackney (Mr. A. B. Coulsell).—Consent.

Width of Way, Line of Frontage, and Building for the Supply of Electricity.

Southwark, West.—A gangway over the public way of Pike-gardens, at the premises of the City of London Electric Lighting Company, Ltd., Bankside and Pike-gardens, Southwark (City of London Electric Lighting Company, Ltd.).—Consent.

Building for the Supply of Electricity.

Southwark, West.—An addition at the premises of the City of London Electric Lighting Company, Ltd., Bankside and Pike-gardens, Southwark (City of London Electric Lighting Company, Ltd.).—Consent.

Line of Frontage and Space at Rear.

Kensington, South.—Two houses abutting on a footway leading from Lexham-gardens to Cornwall-gardens, Kensington, with an irregular open space at the rear (Messrs. S. Barrett & Driver for the Misses Leith and Mr. J. B. Barrett).—Consent.

Line of Frontage and Construction.

Islington, South.—The retention of a wooden bookstall in front of the Angel Tube Railway Station, City-road, Islington (Messrs. Hedderwick & Denton).—Consent.

Width of Way and Construction.

Whitechapel.—A temporary wood and iron building upon a site on the southern side of Great Prescot-street, Whitechapel, to abut also upon the western side of Leman-street (Messrs. W. Whitford & Co. for the Co-operative Wholesale Society, Ltd.).—Consent.

Space at Rear.

Kensington.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of an addition at the rear of No. 47, Beaufort-gardens, Kensington (Mr. F. Stovold for Mrs. Hope-Edwards).—Consent.

Lewisham.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of a building at the corner of Ewhurst-road and Manwood-road, Lewisham, with an irregular open space at the rear (Mr. J. Nicholls).—Consent.

Lewisham.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of five houses, with a workshop at the rear, on the eastern side of Phoebeth-street, Ladywell, with an irregular open space at the rear of the northernmost house (Messrs. J. W. Heath & Sons).—Consent.

Formation of Streets.

Kensington, North.—That an order be issued to Messrs. P. & H. W. Currey, sanctioning the formation or laying out of a new street for carriage traffic in continuation north-westward of St. Mark's-road, Kensington.—Consent.

Norwood.—A deviation from the plans and sections sanctioned for the formation or laying out of new streets for carriage traffic out of the northern side of Upper Tulse-hill, Norwood, so far as relates to (i.) an alteration in the gradients of such streets, and (ii.) the rounding of the angle at the junction of streets Nos. 1 and 2 (Messrs. Douglas Young & Co.).—Consent.

Cubical Extent.

Paddington, North.—The retention of a building known as Nos. 6, 8, 10, and 12, Irongate Wharf-road, and No. 9, Harrow-road, Paddington, exceeding in extent 250,000 cubic ft., to be used only for the purposes of a wholesale milk depôt (Messrs. Forsyth & Maule for the Great Western and Metropolitan Dairies, Ltd.).—Consent.

Uniting of Buildings.

Finsbury, East.—Formation of two openings, with rolling steel shutters, at the second floor level of the premises of the Royal London Mutual Insurance Society, Ltd., at the corner of City-road and Finsbury-square, Finsbury (Mr. J. Belcher, R.A.).—Consent.

Holborn.—The uniting of No. 11A, Featherstone-buildings and No. 3, Sandland-street, Holborn (Messrs. Whitby Brothers).—Refused.

Hoxton.—The retention of openings between Nos. 211, Shoreditch High-street and Nos. 2 and 4, Great Eastern-street, Hoxton (Mr. E. Stones for the Duke of Marlborough).—Consent.

Islington, South.—The use of armoured doors in lieu of iron doors to certain openings in the division walls at Nos. 24, 26, 28, and 30, Graham-street, Islington (Messrs. Mather & Platt, Ltd., for Mr. A. F. Vigers).—Consent.

Kensington, South.—The uniting of Nos. 27 and 28, Campden House-court, Kensington (Mr. J. D. Kendall for the Right. Hon. C. Booth and the Hon. Malcombe McNaughten).—Consent.

Marylebone, East.—The uniting of Nos. 44 and 46, Marylebone-lane, the chapel building at the rear of No. 46, Marylebone-lane, and Nos. 70, 71, and 72, Welbeck-street, St. Marylebone (Messrs. A. E. Hughes & Son for Messrs. J. R. Collett & Co.).—Consent.

Marylebone, East.—The uniting of Nos. 158-162, Oxford-street and No. 2, Winsley-street, St. Marylebone (Mr. J. Belcher, R.A.).—Refused.

Competition News.

GRIMSBY TOWN HALL COMPETITION.

It will be remembered that the assessor's award of the third premium in this competition was not accepted by the Finance Committee on the ground that the architects' estimate was considerably above the limit stipulated, and the assessor, Sir W. Alfred Gelder, F.R.I.B.A., was asked for an explanation; this came before the Finance Committee recently, and, being considered satisfactory, the third premium goes to Messrs. Rigby, Oliver, & Phipps, of 92, Market-street, Manchester, for design No. 47.

HUTCHESON'S HOSPITAL FEUING DESIGN COMPETITION.

At a general meeting held on October 6, the Patrons of Hutcheson's Hospital, Glasgow, made their award in the competition for laying out for feuing and building their lands of Thornliebank, near Glasgow. The first premium of 100*l.* was awarded to Messrs. Joshua Boyd & Co., 49, Bath-street, Glasgow; the second of 75*l.* to Mr. Daniel McInnes, C.E., 3, Kennyhill-square, Dennistoun, Glasgow; the third of 50*l.* to Mr. J. Gilchrist Bennett, C.E., 12, High-street, Paisley; and the fourth of 25*l.* to Messrs. W. R. Copland & Sons, C.E., 146, West Regent-street, Glasgow. The whole of the plans sent in were on view in Hutcheson's Hospital Hall, 2, John-street, Glasgow, during the course of this week.

LIBRARY, ST. ALBANS.

The offer of Mr. A. Carnegie to provide 3,000*l.* towards the cost of the erection of a new public library at St. Albans has been accepted, and architects practising in St. Albans are

Digitized by Google

being invited to submit plans. The President of the Royal Institute of British Architects is to be requested to act as assessor, and make a selection of the best designs for submission to the City Council.

SCHEME FOR LAY-OUT OF GARDENS, BATH.

The Bath City Council have resolved to offer a premium of 50*l.* for the best design to lay out the Institution gardens, providing the necessary shelters, lavatory accommodation, and utilising the hot mineral water. The conditions of the competition are at present in course of preparation.

GIRLS' SCHOOL, HARROGATE.

In a limited competition for a high-class school for girls, including provision of boarding-houses, head mistress's house, lodge, etc., proposed to be erected by the Woodard Society (northern division), the designs submitted by Mr. W. Gillbee Scott, of 25, Bedford-row, London, have been adopted for execution. The total estimated cost is about 46,000*l.* In the selection of the successful design the Chapter were advised by Mr. H. W. Chatters, F.R.I.B.A., of Cheltenham.

BOOK RECEIVED.

DOMESTIC SANITATION AND PLUMBING. By A. Herring-Shaw, R.P.C. Pp. 307. (Gurney & Jackson. 6s. 6d.)

Correspondence.

ADVERTISING BOARDS.

SIR,—*Re* your notes in the last issue of the *Builder* on those advertising eyesores, patent medicines, with a curious irony there are three of them planted within 20 ft. of an ancient chapel burying-ground, Westoning, Beds, and one's eyes fall direct upon the old grave memorials literally under the advertisement boards, suggestive of an eventual and speedy grave if one is simple enough to be deluded into using such so-called cures for every evil under the sun.

JOHN STETCHER.
Clerk of Works.

LONDON AND PROVINCIAL BUILDERS' INFORMATION CENTRE.

[COMMUNICATED.]

REFERENCE was made in these columns last week to the establishment of a Builders' Information Bureau. The word "Centre" will in future be substituted for "Bureau," as it conveys more clearly the general idea of the organisation.

A builder constantly requires some special information in connexion with his business which involves much searching for and correspondence, or a number of quotations from manufacturers or merchants are wanted, and as conditions in the building trade vary every day it is no easy task to keep up-to-date with the best markets. A recognised Centre fed from all quarters must undoubtedly be *au courant* with these conditions, and an experienced staff is maintained for this purpose.

A feature of the work is the department set aside to deal exclusively with the registering of particulars dealing with building trade productions and other information in the local districts throughout the country. Frequently a builder is tendering for work in a locality quite unknown to him, and it is necessary to at once get in touch with the local conditions most likely to meet his requirements, and this information is provided by the Centre.

A further advantage is that afforded to a builder for registering his name, etc., and setting forth the class of contract he is able to undertake, and giving a list of executed works. This Register will be available for architects throughout the country, and will be classified into districts, extracts being forwarded to architects about to invite tenders. Special mention will be made in cases where a builder is able to undertake sub-contracting work, as often he is passed over for want of this knowledge on the part of the architect.

Full particulars may be obtained on application to the Secretary, 24, Hart-street, Holborn, W.C.

LONDON COUNTY COUNCIL EDUCATIONAL COMMITTEE.

THE Educational Committee of the London County Council met on Wednesday.

Dingle-lane, Poplar.—An estimate of 430*l.* was voted for inclosing land and erecting a playshed, the work to be carried out by Messrs. J. & C. Bowyer, the contractors for the school now being erected.

"The Riversdale," Wandsworth.—340*l.* was voted for tar-paving playgrounds.

Basnett-road, Battersea.—It was decided to adapt the iron building as a school for physically defective children, at a cost of 215*l.*

The "Frogmore," Wandsworth.—Plans were passed for adapting rooms to accommodate sixty mentally defective children, at a cost of 460*l.*

Contractors and London Joinery Work.—Some time ago the question of erecting a new school and a new centre at Lewisham and Poplar was referred back. The Committee now reported:—"We have considered further the question of entrusting the work to Messrs. F. & E. Davey. In reply to our inquiry the contractors have undertaken, in the event of their tenders being accepted, to do the joinery work in London, at the London rate of wages. The contractors have also informed us that they have decided to pay 9d. an hour to joiners at Southend, irrespective of the Council's work, although they understand that the society have agreed to the payment of 8½d. an hour for six months. In view of all the circumstances, we are of opinion that the recommendations should be resubmitted to the Council on the understanding that the joiners' work is done in London at London rates." The Committee therefore now decided to recommend the Council to accept Messrs. Davey's tenders as follows:—School for 817 at Manor-lane, Lewisham, 16,235*l.*, and two centres and science-room on the Millwall site, Poplar, 4,953*l.*

Electric Lighting.—Tender of 259*l.* from British Westinghouse Company was recommended for electric lighting at Paddington Technical Institute.

Remuneration of Quantity Surveyors.—The following recommendations were made:—That Mr. H. H. Robinson, quantity surveyor, be allowed 2 per cent. in respect of the "works to existing buildings" bill (1,320*l.* 2s.) in the quantities for the enlargement of the Essendine-road school (Paddington, N.); Mr. C. W. Brooks be allowed 2 per cent. on 2,000*l.* of the amount of the "works to existing buildings" bill (2,049*l.* 10s. 3d.) in the quantities for the enlargement of Queen's Head-street school (Islington, S.), and 2½ per cent. in respect of the "works to existing buildings" bill (493*l.* 11s. 8d.) and the exterior painting bill (71*l.*) in the quantities for the enlargement of the "Maryon-park" school (Woolwich).

School of Engineering.—Mr. B. Cunningham, of the Engineer's department of the Port of London Authority, was appointed a member of the Advisory Sub-Committee of the School of Engineering, Poplar.

LONDON AND DISTRICT BOROUGH COUNCILS.

Battersea.—Three streets are to be repaved with granite macadam, at an estimated cost of 632*l.* Plans have been passed for the Empire Stone Company, Ltd., for a reinforced concrete structure, to be used as a crucible mill, at the premises of the Morgan Crucible Company, Ltd.

Camberwell.—It is proposed to erect, at the joint expense of the Councils of Croydon, Lambeth, Penge, and Camberwell, an underground convenience at Crystal Palace-parade. The cost is put down at about 500*l.* The Rev. Canon Murnane has approached the Borough Council to ask if they would assist him in obtaining outstanding interests in Toulon-street for the purpose of his proposed new R.C. school (St. Joseph's).

East Ham.—Plans and estimates by the Surveyor have been passed for making-up Albert-road, North Woolwich (797*l.*), and for making-up Aldersbrook-lane (150*l.*). Building plans have been passed as follows:—Mr. A. H. Leadbetter, thirty-five houses, Welbeck-road; Messrs. Beadle, Wood, & Co., new road, being a continuation of Caledon-road; Mr. W. Lowe, eight houses, Loxford-avenue; Messrs. Stoneley & Carr, twenty-six houses, Holland-road.

Finchley.—Plans have been passed by the District Council for eighteen houses in Park-avenue, for Mr. P. D. Walker.

Hammersmith.—Messrs. Vigers & Co. have lodged plans for a building over the Central London Railway Station at Shepherd's Bush.

Hendon.—The Engineer is to visit some districts where dust destructors are in operation to obtain information in regard to a proposal to erect a destructor in Hendon. The following plans have been passed:—Mr. Colwill, six terrace houses, Dallas-road; Mr. A. H. Tiltman, house and motor garage, West Heath-drive; Mr. F. Bastable, fourty-four semi-detached houses, The Grove, Golder's Green; Mr. R. Angell, optical works, Bittacy-hill, Mill Hill; Messrs. W. Moss & Son, two houses, Bigwood-road, and three cottages, Erskine-hill; Messrs. P. Bedon, Ltd., presbytery, Finchley-road; Mr. H. Dawson, eight double tenement houses, Crewys-road, Child's Hill; Hampstead Tenants, Ltd., club and three cottages, Willifield Way; Mr. R. Vernon Hart, four semi-detached houses, Wentworth-road; Messrs. Benskin, Ltd., alterations to Royal Oak public-house, Temple Fortune. The following plans have been lodged:—Mr. J. W. Reeves, six houses and one shop, Collindale-avenue; Mr. E. H. Appleton, nine houses, Russell-road.

Kensington.—Messrs. Joseph West & Son are to carry out repairs to the timber jetty at Lots-road Wharf, at an estimated cost of 300*l.*

Lambeth.—Messrs. Joseph & Smithem, on behalf of Messrs. Lyons & Co., have lodged plans for the construction of vaults and pavement lights in connexion with a new building to be erected on the site of Nos. 258, 260, and 262, Westminster Bridge-road.

West Ham.—The Council have passed the following plans:—Messrs. J. Howlett & Son, additions and alterations to 58, Victoria Dock-road, Canning Town; Mr. W. Stewart, new toilet department at Messrs. J. Knight's premises, Silvertown; Mr. M. Zimmerman, rebuilding warehouse for the British Alcohol Company, Worland's Wharf, Canning Town; Mr. J. R. Moore-Smith, additions to blouse factory, 105, The Grove, Stratford.

Westminster.—The Improvements Committee report having received a letter from H.M. Office of Works calling attention to a report in the *Builder* of the Council having had under consideration in July the question of the widening of Beak-street, Regent-street, and asking if it was a fact whether, as far as the Council was concerned, the proposal to widen Beak-street had now been given up. The Committee have decided to inform the Office of Works that the City Council had no intention at present of proceeding with the widening of either Beak-street, Foubert's-place, Chapel-court, Regent's-place, or Heddon-street. H.M. Office of Works transmitted for approval a drawing of a subway which they propose to construct in Orange-street in connexion with the National Gallery and extension and the National Portrait Gallery. The Works Committee has passed the plans subject to protective conditions. Messrs. D. R. Paterson, Ltd., are to construct a sewer in the new street near the Guildhall, Westminster, the contract price being 326*l.*

Master Builders' Associations, etc.

LIVERPOOL MASTER BUILDERS' ASSOCIATION.

The forty-third annual meeting of this Association was held in the Board-room, 24, Sir Thomas-street, Mr. Frank Griffiths, the retiring President, occupying the chair at the commencement of the proceedings. After the adoption of the report and Treasurer's statement, Mr. R. Arthur Costain was elected President for the ensuing year, and in returning thanks he urged all the members to loyally carry out the recommendations of the Council. The retiring President having been thanked for his valuable services, the following officers were elected:—Mr. Charles Tomkinson, senior Vice-President; Mr. R. Stevenson Jones, junior Vice-President; Mr. J. T. Duthie, Treasurer; and Messrs. H. E. Dallow and J. Sirett Brown, Hon. Auditors. Thirty-six members were elected to form the Council for the ensuing year. The Council is divided up into six trade committees, representing the bricklayers, masons, plasterers and slaters, carpenters and joiners, painters, plumbers, and gasfitters and electricians.—Mr. J. B. Johnson brought forward the question of forming a Building Trades' Exchange, and after considerable discussion the matter was referred to the Council for consideration.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERCROVE.—Twenty houses; Mr. C. S. Thomas, architect, 14, Wind-street, Swansea.

Aspull.—School (3,300*l.*); Messrs. J. Johnson & Son, builders, Wigan.

Bardsea.—Police-station; Lancashire County Council.

Barnsley.—Boys' school (4,000*l.*); Council of St. Mary's Church, Barnsley.

Beckenham. — Proposed new elementary school for about 500 children on a site in Witham-road, Beckenham.

Berwick. — Church; Trustees, Primitive Methodist Church.

Digitized by Google

Blackpool.—Fourteen houses, Conder-grove; Mr. J. G. Pye, architect, Conder-grove, Blackpool. Sunday-school and chapel; Baptist Church Trustees, Hornley-road, Blackpool.

Braintree.—Cookery centre; Mr. H. Potter, builder, Chelmsford.

Bristol.—Proposed erection of ten single cottages (2,130*l.*); Mr. T. H. Yabbicom, Surveyor, Bristol City Council.

Burton.—Skating-rink; Secretary, Burton Skating Rink Company.

Cadle.—Additions to school (2,000*l.*); Mr. D. P. Jones, architect, Charles-street, Cardiff.

Carshalton.—The District Council has passed the following plans:—Addition to the rectory for the Rev. G. B. Vaux; two pairs villas, Fairview-road, Messrs. Windebank & Co.

Chigwell.—Alterations to County school; Mr. F. Whitmore, architect, Duke-street, Chelmsford.

Cold Norton.—School; Mr. F. Whitmore, architect, Duke-street, Chelmsford.

Croydon.—Forty-five houses, Addison-avenue; Mr. G. Millar, architect, Croydon.

Dalmeny. — School-house (1,500*l.*); Mr. Campbell, architect, Dalmeny Park.

East Dereham.—Secondary school; Norfolk Education Committee, County Hall, Norwich.

Ebchester.—Wesleyan church; the Trustees.

Exeter.—Block of shops and dwelling-houses; Mr. E. Ellis, architect, Polsloe-road, Exeter.

Folkestone.—Extensions to public library (5,000*l.*). Proposed new buildings (10,000*l.*), for Harvey Grammar School; Mr. A. E. Nichols, Surveyor, Folkestone Town Council. The Town Council has passed the following plans:—Three houses, Dover-road, Mr. W. H. Agar, architect and builder; four houses, Stuart-road, Mr. F. E. Maycock, architect and builder.

Gloucester. — Skating-rink; Secretary, Gloucester Rink Company, St. Michael's-square, Gloucester.

Heinsworth. — Additions to Church of England school (1,200*l.*); the Managers, Heinsworth.

Hove.—The Town Council has passed plans for five houses, Fonthill-road, and alterations to 59, Coleridge-street, for Messrs. J. Parsons & Sons.

Norton.—School (10,000*l.*); Mr. T. Rushworth, architect, Shire Hall, Durham.

Plymouth.—The Town Council has passed a plan lodged by Mr. T. J. Stevens for a shop and dwelling-house at the corner of Winston-avenue and Glenparke-avenue.

Richmond-on-Thames.—Receiving home at rear of Guardians' offices; architect, care of Mr. P. Umney, clerk, Board of Guardians. Proposed parish-room (2,500*l.*) at St. John's; Rev. R. B. Harrison, vicar.

Rotherham.—The Town Council has passed the following plans:—Three houses, Ferham-road, Messrs. Geo. Saul & Sons; eight houses, Deepdale-road, Mr. William Charles; three houses, Regent-street, Mr. J. Oxley; sixteen houses, Selbourne-street and Lindley-street, Messrs. Charles Green's Sons; three houses, Deepdale-road and South-street, Mr. H. Squires. The following plans have been lodged:—Three houses, Kimberworth-road and Bradgate-lane, Mr. J. H. James; twenty-four houses, Lindley-street, Mr. Herbert James.

Salisbury.—Chapel; Messrs. Morley & Son, architects, Craven House, Kingsway, W.C.

Sheffield.—The Town Council has passed the following plans:—Eight houses, Middlewood-road and Langsett-avenue, Mr. S. Woolhouse; four houses, Firvale-road, Messrs. W. & A. Forsdike, Ltd.; twelve houses, Dykes-lane, Mr. John Heap; six houses, Overton and Darwin roads, Mr. W. J. Patchett; four houses, Woodbourn-hill, Mr. A. Swift; twelve houses, Frickley-road, Mr. A. E. Gosling; twelve houses, Chesterfield-road, Mr. A. J. Forsdike; thirty-two houses, Romsdal-road, Mr. F. Ridal; fifteen houses, Chesterfield-road, Mr. F. S. Tinker; five sale shops, Glassop-road and Victoria-street, Mr. T. Walter Hall; additions to premises, Upperthorpe, Rev. J. W. Merryweather; alterations to premises, Memsworth-road, for the Lees Hall Golf Club; alterations to Umpire Hotel, Boston-street, Messrs. T. Rawson & Co., Ltd.; motor-house, Psalter-lane and Kingfield-road, Mr. Slack; hotel and stabling, Duke of York public-house, Main and Catley-roads, for the Trustees of the late Mr. R. J. Bentley; addition to Fox House Hotel, Shirland-lane and Ardmore-street, Messrs. T. Berry & Co., Ltd.; additions foundry and pattern shop, Savile-street East, Messrs. Thomas Firth & Sons, Ltd.; additions to premises, Lumley-street, for the Health Committee of Sheffield Corporation; motor-house, Cross-lane, Mr. G. Batty.

Sleepburn.—Vicarage; Mr. A. Plummer, architect, 13, Grey-street, Newcastle-on-Tyne.

Smethwick.—Additions to power-station; Mr. H. Dorce, builder, Cradley, Worcester.

Solihull.—Block of villas; Messrs. Bridges & Son, builders, Ococks Green. Wesleyan church; Rev. R. W. Hopewell, 5, Tennyson-road, Small Heath, Birmingham.

Southgate (Middlesex).—Working-class dwellings, Tottenhall-road; Mr. C. G. Lawson, Surveyor, Southgate Urban District Council.

Stockport.—Isolation block (1,800*l.*); Mr. W. Beattie, builder, Stockport.

Stretford.—The Town Council has passed the following plans:—Private assembly-room, Upper Chorlton-road, Mr. Alf. Haines; conversion into shops of Nos. 1077-79, Chester-road, Mr. H. S. Batey; corn mill, etc., Trafford Wharf-road, Messrs. J. Greenwood & Sons, Ltd.; rubber works, Westinghouse-road, for the Rubber Generating Company, Ltd.

Sutton Coldfield.—Post-office; Mr. Henry Williams, architect, Queen-street, Sutton Coldfield.

Torquay.—The Town Council has passed the following plans:—Three houses, Empire-road, Upton, Mr. J. Blatchford; seven houses, Warberry-road, St. Mary Church, Mr. J. Cruse.

Walsall.—The Town Council has passed the following plans:—Three houses, Birmingham-road, Mr. Geo. Curnock; extensions to factory, New-street, Messrs. Stammers, Ltd.; five houses, Broad-lane, Bloxwich, Mr. H. Wootton.

Wigan.—The following plans have been passed by the Town Council:—Four houses, Chadwick-street, Mr. R. G. Dawson; alterations to New Central Hall, King-road, Pemberton, Messrs. Weisker Brothers; five houses, Seed-street, Mr. Wm. Wood; five houses, Brindley-street, Messrs. Meadow & Son; four houses and stable, Sandon-street, Mr. W. Talbot; People's Palace, Station-road, Mr. Wm. Benson.

Wylde Green.—Row of houses; Mr. Blackman, builder, Frederick-street, Wylde Green.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of this Board on Saturday, the following matters were dealt with:—

Authority for Works.—It was reported that a letter had been received from the Local Government Board authorising the provision at Caterham Asylum of additional infirmary accommodation, at a cost not exceeding 845*l.* The Board also wrote asking the managers to reconsider their proposal for the adaptation of the Eastern and South-Eastern Ambulance Stations for the accommodation of motor vehicles, with a view to the adoption of a less costly scheme.

Central Stores.—The accountant reported on the accounts submitted by the contractors, Messrs. Charles Wall, Ltd., in connexion with the erection of the Central Stores. The total amount payable was 16,032*l.* 17s. 6d., which was less than the contract sum by 348*l.* 2s. 6d.

Painting and Cleaning Works.—The Works Committee reported that as the guarantor proposed by the firm whose tender was the lowest for the cleaning and painting works at Gore Farm Hospital had intimated his inability to become surety for seeing that the contract works were carried out to the satisfaction of the Engineer, they had entered into a contract with Mr. Kazak for the execution of the works. ——It was decided to carry out cleaning and painting works at the South-Western Hospital by direct labour, at an estimated cost of 450*l.*

Children's Infirmary.—A plan prepared by the Engineer to provide waiting-room accommodation at the above infirmary was ordered to be submitted to the Local Government Board for approval.

South Wharf.—A further plan prepared by the Engineer was submitted for the rearrangement and increase of the accommodation for bathing for the female staff at South Wharf, the estimated cost being 350*l.* It was decided to carry out the work subject to the consent of the Local Government Board.

METROPOLITAN WATER BOARD.

THE first sitting of this Board after the summer recess was held on Friday last week, when the following, amongst other business, was transacted:—

Loans.—It was reported that the Local Government Board had consented to the Board borrowing the following, amongst other sums:—1,200*l.* for the improvement of supply to Ealing and Hanwell; 1,635*l.* for the improvements to the Crystal Palace tank, etc.; 11,751*l.* for purchase of land; and 3,163*l.* for the laying of mains at Southgate.

Battersea.—Certain alterations to the existing buildings and the carrying out of repairs and other works at Battersea was recommended, at the total estimated cost of 1,660*l.* It was agreed to carry out the work by the Board's own workmen.

Complications at Acton.—The Works Committee reported that their attention had been called to the fact that a 30-in. main in Chiswick-road, Acton, was laid in 1879 in such a position that the crown of a sewer had been cut away to enable the main to pass over it in a diagonal direction, the result being that for 40 ft. in length the main was practically built into the top of the sewer. The Chiswick Urban District Council alleged that the main had stopped up the sewer, and led to its partial silting up, and they had called on the Board to remove the main, to relay the sewer, and to pay the expenses of cleaning out the sewer above the point of intersection. The solicitor advised that the Board were under no legal liability in the matter, but the Engineer was of opinion that the present position of the main was dangerous, in view of the fact that a length of over 20 ft. was suspended without direct support, and was upholding the roadway and traffic above it.—It was decided to divert the sewer, and to negotiate with the District Council as to the cost.

Failure of Contractor.—The same Committee reported that Messrs. T. J. Hawkins & Co., whose tender of 24,480*l.* for the erection of an engine and boiler house at Hammersmith was accepted last year, and whose tender for the foundations of the Hadley-road pumping-station was accepted in July, had filed their petition in bankruptcy.—It was agreed to allow the special manager appointed by the Official Receiver to continue the work.

Other Works.—Amongst the new works which it was agreed to execute were the following:—Lowering of mains in Acre-lane, Brixton, at the estimated cost of 300*l.*; alterations and repairs to the Board's houses in the Western District, at an estimated cost of 493*l.*; alterations to smith's shop at Hampton, at estimated cost of 110*l.*; erection of fence at Tottenham, at cost of 150*l.*; laying of mains in Wareham-street, Lambeth, at a cost of 190*l.*; fencing of land at Palmer's Green, at cost of 198*l.*; laying of main to supply open-air swimming-bath erected by Chiswick Urban District Council, at a cost of 318*l.*; diverting mains at Scrubbs-lane, Hammersmith, at a cost of 1,000*l.*; and extension of mains at Brockley, at a cost of 200*l.*

General Building News.

CHRIST CHURCH CONGREGATIONAL CHURCH, NEW SOUTHGATE, N.

The foundation-stone of this building was laid on October 9. The design is in late Gothic. Bath stone is being used for the dressings, pressed red bricks for the facings, and pitch-pine for the joinery. The contract is let for 4,597*l.* to Mr. Jas. W. Jerran, Crown Works, East Ham, E.; the architects are Messrs. George Baines & Son, Clement's-inn, Strand, W.C.

MEMORIAL CHURCH, WALLASEY, LIVERPOOL.

Operations are to be began very shortly on the erection of the Harrison Memorial Church, Wallasey. The building will be constructed of Storeton stone, and will provide accommodation for 600 persons. The architect is Mr. J. Francis Doyle, Liverpool.

COUNCIL SCHOOLS, HESWALL.

New school buildings have been erected at Heswall under the supervision of the Administrative Sub-Committee for Education (Hoylake and West Kirby District). The premises have accommodation for 200 children. There are four classrooms and central hall, apartments for cookery centre, besides the usual teachers' rooms, and small kitchen for the children, with storeroom for dinner baskets. The plans provided possible accommodation for 100 more children. The contract has been executed by Messrs. Lever & Wilson (late Mr. S. Webster, Brasenose-road, Bootle), and the cost of the building amounts to 3,740*l.* The architects are Messrs. Deacon & Horsburgh.

MANCHESTER UNIVERSITY.

The new chemical laboratories of Manchester University—they have been named in honour of the Chancellor, the "John Morley Laboratories"—were opened on the 4th inst. They form the completion of the south-western corner of the western court. The architect was Mr. Paul Waterhouse, and the work has been carried out by Messrs. George Macfarlane & Son, contractors, Manchester, and superintended by Mr. L. Knowles.

NEW GUILDHALL, DERRY.

The Derry Corporation have approved the plans prepared by the City Architect, Mr. M. A. Robinson, for the new Guildhall, which is to be built in place of the one burned down.

PROPOSED INSTITUTE PREMISES, CARDIFF.

The Cardiff Public Works Committee have approved plans of a proposed temperance institute and swimming-baths at Clarence-road. The designs were prepared by Mr. E. W. M. Corbett, architect, and the work is estimated to cost about 8,000*l.* or 10,000*l.* The institute will include a swimming-bath, reading, billiard, lecture rooms, etc.

Digitized by Google

WORKHOUSE EXTENSIONS, MANSFIELD.

The Building Committee of the Mansfield Board of Guardians have instructed Mr. L. A. Westwick, architect, to prepare plans for a building to accommodate thirty children at the Dallas-street end of the workhouse grounds. The cost of the scheme is estimated at 1,150*l.*

PUBLIC HALL, LYTHAM.

An institute and public hall has been opened at Ansdell, near Lytham. The building has been erected from a design by Mr. G. H. Willoughby, F.R.I.B.A., of Manchester and St. Annes, and the estimated cost is 5,000*l.*

BURSLEM MUNICIPAL BUILDINGS.

The Burslem Town Council, at their meeting on Monday, considered recommendations of the General Purposes Committee to the effect that the previous decision of the Council to erect new municipal buildings be confirmed, and that the new Public Buildings Committee be authorised to instruct the architects (Messrs. Russell & Cooper, of London) to prepare complete plans and specifications and obtain tenders for the approval of the Council.—The ex-Mayor, Alderman S. Malkin, in moving the adoption of the recommendations, said they had held a competition for the proposed buildings, and they had employed architects and selected a plan. It was well known to all of them that the plan which was placed first in the competition was not considered by local men suitable for the town, and so a sub-committee was deputed to wait upon the architects, and the result was that they now had a set of plans, which, apart from the question of cost, commended themselves to the majority of the members of the Council. By these plans they would have buildings which would serve the purposes of the town in various ways. All the rooms were so linked up that the whole of the buildings could be used as one building, or they could be divided up so that two sets of meetings or functions could be held at the same time in the same buildings. The cost he set down at the outside figure of 30,000*l.*, though he did not think it would reach that sum, and to meet it they had 16,000*l.* in the bank. The proposal was that they should proceed with the work, and, when the federated Council of the whole of the Potteries towns came into being next March, that they should ask that federated Council to raise the balance of 14,000*l.* by loan, chargeable on the Burslem portion of the area alone.—Considerable opposition was shown to the proposal, but in the result the Committee's recommendations to proceed with the work were adopted by eleven votes to six.

Stained Glass & Decoration.

PARISH CHURCH, NEWHAVEN.

In the parish church, Newhaven, Sussex, a stained-glass window has been erected by a former curate, the Rev. T. H. Russell, to the memory of the Rev. E. P. Southwell, M.A., rector for forty-five years. This window, together with a three-light chancel window in Christchurch, Newhaven, is from the studios of Messrs. William Morris & Co. (Ruskin House), Ltd., Rochester-row, Westminster, S.W.

PROPOSED CHANCEL SCREEN, FOWEY PARISH CHURCH.

A faculty has been granted for the erection of a chancel screen in the parish church at Fowey. The cost is estimated at about 450*l.* The designs for the work have been prepared by Mr. Edmund Harold Sedding, architect.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. Read & Macdonald, architects, have removed their offices from 4A, Cork-street to 16, Cork-street, Bond-street, W.——Mr. Thomas Athey, formerly manager of Messrs. Spencer, Santo, & Co., building contractors, of Warwick-road, Kensington, has joined the staff of the British Uralite Company, of 16, St. Helen's-place, E.C.——The Expanded Metal Company, Ltd., have appointed Mr. B. J. Miller, one of their works representatives, to succeed the late Mr. Harry Mason as their representative in Manchester and district. The Company's Manchester address has been changed to Temple-chambers, 33, Brazenose-street, Manchester.

PROPOSED NEW TOWN HALL FOR MARYLEBONE.

On Thursday last week the Marylebone Borough Council was again unable to consider the proposal to build a new town hall owing to the failure to obtain a quorum when the matter came on for discussion. The question, therefore, will have to be considered at the next meeting. The suggestion before the Council is that the Committee shall be instructed to prepare an estimate of the probable cost of the erection of a new town hall on the lines of the plans recently submitted by Mr. E. A. Lanchester on (1) the site of the St. Marylebone Charity School for Girls, and (2) the site in Seymour-place, bounded by Nutford-place, Brown-street, and Queen-street.

PREFERENCE FOR LOCAL LABOUR.

The Middlesbrough Corporation have decided to insert a clause in their contract for the erection of the new free library to the effect that preference be given to the employment of local workmen, and that the contractor shall undertake to engage Middlesbrough unemployed men for the carrying out of the unskilled labour required on the work.

STREET IMPROVEMENTS, GLOUCESTER.

The Gloucester City Council having applied to the Local Government Board for sanction to borrow sums amounting to 2,650*l.* for the purchase of property for the widening of Berkeley-street, Westgate-street, and London-road, Mr. Edgar Dudley, F.S.I., Inspector to the Local Government Board, recently held a local inquiry into the matter. Mr. G. Sheffield Blakeway, Town Clerk, gave particulars of the proposals, and Mr. R. Read, City Surveyor, and Mr. E. W. A. Carter, Assistant Surveyor, were present at the inquiry.

BUILDERS AS COUNCILLORS.

At the last meeting of Wimbledon Town Council the question of builders serving upon committees who had the duty of considering, passing, and rejecting building plans was brought up. Mr. Holloway, who was the gentleman particularly referred to, said he always took care not to be in the room when the Committee were considering his plans. It was desirable, he contended, that those who had a practical and technical knowledge of buildings should be on such committees. Mr. Penny, on the other side, expressed the opinion that it was improper for any member of the Council who was a builder to serve on such a committee, as it gave the member an undue advantage over other builders, and handicapped the officials. Alderman Brasier corroborated Mr. Holloway's statement that he was never in the room when his plans were under consideration. Mr. Holloway said that if members had any idea that he was unduly favoured by the officials, he could undertake to prove that the officials were more stringent with him than with builders who were not members of the Council. Mr. Woodlands said he knew for a fact that Mr. Holloway was perfectly right in his assertion that the officials were not so particular with outsiders as with Mr. Holloway. The officials did this, of course, so that they would be above suspicion, and they could hardly be blamed under the circumstances. While he could say without fear of contradiction that Mr. Holloway received no favour in this connexion, he (Mr. Woodlands) was of opinion that a councillor who was a builder ought not to sit on the Buildings Committee. Mr. Holloway explained that he had not asked to go on the Committee—he had been put upon it. He inquired, was not the chairman of the Committee a builder, and he further desired to know, could they get a better man to do the work? Were they going to exclude him? Mr. Penny: Yes. Mr. Holloway went on to ask who they were going to put on the Committee? Were they going to put on the Committee people who knew nothing about building—men who did not know the difference between a section and an elevation? In conclusion Mr. Holloway said he had no desire to be a member of the Committee, and after the remarks that evening he would take good care not to sit on the Committee again. The incident then closed.

APPOINTMENT OF SANITARY OFFICERS.

The Local Government Board has sanctioned the appointment or increase of salaries of sanitary officers as follows:—Metropolitan Borough of Chelsea, Mr. H. H. Clay in place of Mr. A. G. Kemp, resigned; Metropolitan Borough of St. Marylebone, Miss F. A. Baker, salary increased; Metropolitan Borough of Woolwich, Messrs. J. W. Rance, W. Wood, W. Little, A. G. Potter, W. Tedham, and T. Powell, and Mr. H. Shaw; City of Westminster, Mr. H. R. Hardy in place of Mr. J. P. Folland, deceased; City of London, Miss A. M. Wilkinson in place of Miss D. Barron, resigned; Messrs. J. Dunworth and A. Wheaton, salaries increased.

THE NEW LAW COURTS.

During the holidays the Law Courts have been thoroughly overhauled by a staff of some 200 painters and labourers, and several important improvements have been effected. In the central hall the second of the staircases and balconies to relieve the congestion in the court corridors are now almost completed. Substantial progress has been made with the building of the new courts on the Strand garden. There has been much competition, says the *Standard*, to secure the four new courts, which are to be large, roomy, and well-ventilated chambers, each 36 ft. by 45 ft., but it is now generally understood that they are to be appellate courts and courts for the Probate and Divorce Division. One is to be the Court of Criminal Appeal, another an Appeal Court, and the remaining two Divorce Courts.

DALKEY GRANITE QUARRY.

Answering Mr. Field in the Parliamentary papers, Mr. Hobhouse states that the reason that the Dalkey granite quarries have been closed for many years is because the Board of Works had at Kingstown Harbour a sufficient reserve of granite to meet all probable requirements. The Board do not require a granite supply in the neighbourhood. As to the advisability of arranging that the quarries may be opened so as to give employment in the locality, the Commissioners of Kingstown Harbour advertised in April, 1907, in the Dublin newspapers, inviting tenders for the renting of the quarries at Dalkey, with a result that they received no offer which they could entertain.

Patents.

APPLICATIONS PUBLISHED.*

19,494 of 1908.—Daniel Gerald Somerville: Reinforced concrete construction.

19,923 of 1908.—John Thomas Simpson: Means for reinforcing concrete construction.

21,803 of 1908.—Wilheim Seigfried Georg Schaefer: Joints for hollow mouldings.

21,929 of 1908.—Charles Wesley Gray and Bertram Lawrence Hurst: Glazing bars or astragals for skylights, windows, and the like.

22,886 of 1908.—John Winder: Metal shears, punches, and the like.

23,805 of 1908.—Joseph Hayton: Concrete, brick, and other pipes, tubes, culverts, arches, and the like.

26,393 of 1908.—Herbert John Buggs: Manhole-cover frames and the like.

2,259 of 1909.—William McGeoch: Window-sash fittings.

2,814 of 1909.—Pierre van Leeuw: Reinforced concrete girders and floors, or the like.

5,742 of 1909.—Tom Hirst and Cyrus Jones: Moulds for silica bricks and like firebricks.

8,317 of 1909.—Joseph Franklin Ross: Apparatus for moulding concrete.

9,160 of 1909.—Jules Leopold Hubert Ghislain Bosmans: Concrete brick for hollow walls.

12,498 of 1909.—Frederick Dalby and Samuel Benson: Paint and the like.

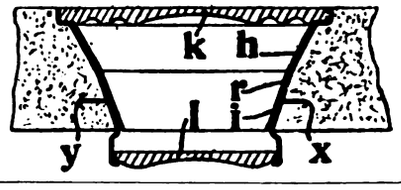
14,746 of 1909.—Albert Cauchemont: Chimney and ventilating shaft-tops.

15,219 of 1909.—Louis Hyacinthe Peters: Weather excluding sashes and the like.

16,710 of 1909.—William Herbert Percy: Reinforced concrete articles, structures, and structural members.

SELECTED PATENTS.

9,046 of 1908.—Emil Ferdinand Hassart and British Luxfer Prism Syndicate: Pavement lights. This relates to lights for pavements, and consists in providing metallic frames for securing the lenses, which frames are embedded in concrete, and are provided with hooked projections or lugs for reinforcing the concrete and holding the frames together. Each frame is provided with sides *h*, *i* inclined at different angles, and coated with a reflecting surface *r*, top and bottom lenses *k*, *l*, and projections *x*, *y*.



which may be connected to projections on adjacent frames by wires, or hooked over rods embedded in the concrete.

9,065 of 1908.—Charles Martin Markham: Moulds for use in concrete constructions. This relates to moulds for use in concrete constructions, which are made with detachable parts. The side members of the mould can be readily removed when the concrete has set sufficiently to retain its shape, while the bottom members are permitted to remain until the concrete has fully set. In a mould used in the construction of beams, the bottom member 1 is

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

PATENTS.—*Continued on page 423*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xvii.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

OCTOBER 31.—**Pembrokeshire.**—FARMHOUSE, ETC.—The Pembrokeshire Small Holdings and Allotments Committee invite model plan and specification for a farmhouse and outbuildings. For further particulars see advertisement in our issue of October 9.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l.*, 30*l.*, and 20*l.* Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

* NOVEMBER 30.—**Workington.**—SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. See advertisement in this issue for further particulars.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 16-23.—**Newtonmore.**—HOTEL ADDITIONS.—Mason, carpenter, plumber, slater, plaster, and painter and glazier works of extensive additions to Craigmhor Hotel, Newtonmore; also for the removal of old buildings. The plans, etc., may be seen with Mr. Alex. Cattanach, architect, Kingussie. Intending offerers are requested to meet the architect at the hotel on the 16th inst. at 1 o'clock p.m.

OCTOBER 18.—**Barnsley.**—SCHOOL.—The Governors of the Barnsley and District Holgate Grammar School invite tenders for the erection of a boys' grammar school in Shaw-lane, Barnsley, according to drawings, etc., prepared by Messrs. Crouch, Butler, & Savage, architects, of Birmingham. Names to Mr. G. Alfred Bond, Clerk to the Governors, 8, Regent-street, Barnsley, together with a deposit of 2*l.* 2s.

OCTOBER 18.—**Cork.**—NEW TECHNICAL SCHOOL.—The Cork County Borough Technical Instruction Committee invite tenders for the erection of a technical school to plans, etc., prepared by Mr. Arthur Hill, B.E., F.R.I.B.A., 22, George's-street, Cork, from whom quantities can be obtained on payment of 1*l.* 1s. All the work must, as far as possible, be executed in the City.

OCTOBER 18.—**Dumfries.**—ADDITIONS.—Tenders are invited for the mason, joiner, slater, plaster, glazier, and painter works of additions to Friars Carse Mansion House, Dumfries, for Mr. C. W. Dickson. Plans, etc., may be seen, and schedule of quantities obtained, on application to Messrs. James Barbour & Bowie, architects, 53, Buccleuch-street, Dumfries.

OCTOBER 18.—**Longroyd Bridge.**—HOUSES.—Works (joiner's work excepted) required to be done in the erection of two dwelling-houses at Longroyd Bridge. Plans may be seen, and bills of quantities obtained, at office of Mr. J. Berry, architect and surveyor, 5, Market-place, Huddersfield.

OCTOBER 18.—**Pollard in Wendron.**—COTTAGE.—For the erection of a cottage at Pollard in Wendron (Estates of Viscount Clifden and Lord St. Levan). Plans, etc., may be seen at the office of Mr. Arthur Pearse Jenkin, Trewirgie, Redruth.

OCTOBER 18.—**Rochford.**—ADDITIONS TO INFIRMARY.—The Guardians invite tenders for an addition to the Infirmary at Rochford, in accordance with a plan, etc., which may be seen at the Workhouse.

OCTOBER 19.—**Aviemore.**—VILLA.—Estimates wanted for all departments of new villa to be erected at Aviemore. Plans, etc., may be seen with the architect, Mr. Alexander Mackenzie, C.E., Kingussie.

OCTOBER 19.—**Kinsale.**—COTTAGES.—The Kinsale R.D.C. invite tenders for building cottages. A deposit of 2*l.* per cottage must be lodged with each tender. On the same date tenders for fencing plots and for additions to and repair of existing cottages will also be considered. Tender forms, etc., can be had on application from Mr. Edward Murphy, Acting Clerk of Council, Council Office, Kinsale Workhouse.

OCTOBER 20.—**Dunfermline.**—PREMISES.—Mason, joiner, plumber, slater, plaster, steel, and tile works in connexion with the erection of new premises, 125, High-street, Dunfermline, for Mr. Angelo Maloco. Plans may be seen, and schedules of quantities obtained on application to Mr. T. Hyslop Ure, architect and surveyor, 43, Carnegie-street, Dunfermline.

OCTOBER 20.—**Horwich.**—SUBWAY.—Lancashire and Yorkshire Railway Directors invite tenders for the construction of a subway at Horwich for a line of water pipes. Plans can be seen, and copies of tender, etc., obtained, on application at the Engineer's Office, Hunts Bank, Manchester.

* OCTOBER 20.—**Jersey.**—SOLDIERS' QUARTERS.—The Secretary of State for War invites tenders for erection of twenty-one married soldiers' quarters at Jersey. See advertisement in this issue for further particulars.

OCTOBER 21.—**Carrick-on-Shannon.**—COTTAGES.—For erection of single labourers' cottages, for the Carrick-on-Shannon No. 2 R.D.C., in accordance with plan, etc., which may be seen at the Board-room, Union Workhouse, Carrick-on-Shannon. A deposit of 1*l.* to be lodged with each tender.

OCTOBER 21.—**Crewe.**—POLICE-STATION.—Tenders are required for the erection of new County Police-station at Ford-lane, Crewe. Plans, etc., can be seen at the office of Mr. H. Beswick, F.R.I.B.A., County Architect, Chester, and quantities obtained on deposit of 1*l.*

OCTOBER 21.—**Leeds.**—IMPROVEMENTS TO BEESTON COUNCIL SCHOOL.—Apply to the Architect's Section, Education Department, when quantities will be forwarded.

OCTOBER 21.—**Millbrook.**—CHURCH RESTORATION.—Works of restoration to be carried out at Millbrook Old Church. Drawings, etc., can be seen on application to the Rev. G. G. Elton, at Millbrook Rectory, or at the office of the architect, Mr. B. D. Cancellor, 12, Jewry-street, Winchester.

* OCTOBER 21.—**Orsett.**—ADDITIONS TO WORKHOUSE.—The Orsett Guardians invite tenders for carrying out additions to the Workhouse. See advertisement in this issue for further particulars.

OCTOBER 21.—**Sheffield.**—ADAPTATION.—The Commissioners of His Majesty's Works and Public Buildings invite tenders for the adaptation of premises, Suffolk-road, Sheffield, for a Labour Exchange. Drawings, etc., may be seen on application to the Postmaster at Sheffield. Forms of tender may be obtained on application to the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

OCTOBER 22.—**Ballykisteen.**—DWELLINGS.—Four labourers' dwellings adjacent to the Stud Farm at Ballykisteen for Mr. George Edwards. Plans, etc., can be inspected at the offices of Mr. J. W. R. Harris, Stud Farm, Ballykisteen, Limerick Junction, Co. Tipperary.

OCTOBER 22.—**Castleford.**—SCHOOL WORKS.—The West Riding Education Committee invite whole or separate tenders for alterations, Welbeck-street Provided School, Castleford. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

OCTOBER 22.—**Great Yarmouth.**—ADDITIONS.—The Education Committee invite tenders for alterations and additions to the offices at Runham Vauxhall School. A plan, etc., can be seen, and forms of tender obtained, at the office of the Borough Surveyor, Town Hall.

OCTOBER 22.—**Merton.**—CART-SHED.—Merton U.D.C. invite tenders for the following works:—(*a*) The erection of a cart-shed, etc.; (*b*) road-making and sewering works in Cannon Hill-lane. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. G. Jerram, Surveyor, Council Offices, Merton.

OCTOBER 22.—**Mytholmroyd.**—SCHOOL WORKS.—The West Riding Education Committee invite whole or separate tenders for alterations, Burnley-road Provided School, Mytholmroyd. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

OCTOBER 23.—**East Prawle.**—BARN WORKS.—For executing the works required in connexion with the restoration of the barn, etc., at Higher Farm, East Prawle, near Kingsbridge. Specifications on application to the tenant, and all further information may be obtained of Messrs. White & Colley, land agents and surveyors, Avonwick, South Brent.

OCTOBER 23.—**Kingussie.**—SHOPS, ETC.—Estimates wanted for mason, carpenter, slater, plumber, plasterer, and painter and glazier works for block of shops and dwelling-houses in High-street, Kingussie. Plans, etc., may be seen with the architect, Mr. Alexander Mackenzie, C.E., Kingussie.

* OCTOBER 23.—**St. Annes-on-the-Sea.**—COTTAGES.—The St. Annes-on-the-Sea U.D.C. invite tenders for erection of eighteen workmen's cottages. See advertisement in this issue for further particulars.

OCTOBER 25.—**Cwmbran.**—ALTERATIONS TO POLICE-STATION, ETC.—Monmouth Standing Joint Committee invite tenders for additions and alterations to Cwmbran Police-station and Court. Plans, etc., may be seen at the office of Mr. William Tanner, F.S.I., County Surveyor, and a copy of the quantities obtained, on payment of 1*l.* 1s.

OCTOBER 25.—**Rowley Regis.**—HOUSE FOR MOTOR FIRE ENGINE.—Rowley Regis U.D.C. invite tenders for the erection of a house for a fire engine and a tower for hose-drying at Halesowen-road, Old Hill. Plan, etc., may be seen at the Council Offices.

* OCTOBER 26.—**Lichfield.**—ENLARGEMENT OF SCHOOL.—The Staffordshire Education Committee invite tenders for enlargement and improvement, Whittington Council School. See advertisement in this issue for further particulars.

OCTOBER 27.—**Armagh.**—RECONSTRUCTING.—For reconstructing premises in Scotch-street, Armagh, for Mr. Wm. Pinkerton. Plans, etc., can be obtained at the office of Mr. Sampson Jervois, architect, Armagh.

OCTOBER 27.—**Bedlinog, etc.**—SCHOOL WORKS.—Glamorgan C.C. invite tenders for (1) alterations to the master's house at the Council school at Bedlinog; (2) new offices at the Council school at Pontardulais; (3) new offices, etc., at the County school at Bridgend. Plans may be seen, and specification, etc., obtained, for Work No. 1 at the Bedlinog Council School, for Work No. 2 at the Pontardulais Police-station, and for Work No. 3 at the Bridgend Police-station. The plans, etc., of all the works may be seen or obtained at offices of Clerk of the County Council, Glamorgan C.C. Offices, Westgate-street, Cardiff.

OCTOBER 27.—**Farnworth.**—LIBRARY.—Farnworth U.D.C. invite tenders for the erection of a new Carnegie Library, in Market-street, Farnworth. Specifications, etc., may be obtained from the architect, Mr. Walter J. Lomax, 11, Fold-street, Bolton, on deposit of 5*l.*

OCTOBER 28.—**Bodmin.**—HOSPITAL.—For proposed new East Cornwall Hospital, Bodmin, in Rhind-street. Plans, etc., may be seen by appointment with Mr. Henry D. Foster, Hon. Sec., East Cornwall Hospital, Bodmin, or at the office of Mr. Morley B. Collins, architect, Clinton-road, Redruth.

OCTOBER 28.—**Morecambe.**—BANDSTANDS AND SHELTERS.—The Roads Committee of the Corporation of Morecambe invite designs and tenders from firms specialising in bandstands and shelters for the supply and erection of two bandstands and four shelters for the Morecambe promenades and greens. Full particulars may be obtained on application to Mr. J. W. Hopwood, A.M.Inst.C.E., Borough Surveyor, Morecambe.

OCTOBER 28.—**Pontardulais.**—CHAPEL.—Erection of Siloh Congregational Chapel, Pontardulais. Plans, etc., may be seen with Mr. Ben. Matthews, Goedwig, or with the architect, Mr. D. R. Jones, 40, Thomas-street, Llanelly. Bills of quantities may be had from Mr. Ben. Matthews on payment of 1*l.*

* OCTOBER 29.—**Cardiff.**—COUNTY HALL.—The Glamorgan C.C. invite tenders for erection of a County Hall in Cathays Park, Cardiff. See advertisement in this issue for further particulars.

NOVEMBER 3.—**Belfast.**—HOUSES.—The Belfast City and District Water Commissioners invite tenders for the erection of two workmen's houses and a store and outbuildings at their works at Oldpark, Belfast. The plans, etc., can be inspected at office of Mr. R. Hamilton, Secretary, Water Office, Belfast.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 5.—**Runswick Station, Yorkshire.**—CONSTRUCTION OF TIMBER BOAT HOUSE AND SLIP.—The Committee of Management of the Royal National Lifeboat Institution invite tenders for the construction of a timber lifeboat house and slip on concrete foundations at Runswick. Plans, etc., may be inspected on application to the Local Hon. Secretary, Dr. J. B. Laverick, Hinderwell, S.O., Yorkshire, or at the office of the Engineer and Architect to the Royal National Lifeboat Institution, Mr. W. T. Douglass, M.Inst.C.E., 15, Victoria-street, Westminster, London, S.W. Copies of the bills of quantities and form of tender may be obtained on application to the Engineer and Architect, accompanied by a deposit of 1*l.*

NOVEMBER 11.—**Aberfan.**—HOUSES.—Erection of twenty-four or more dwelling-houses, together with the construction of roads and sewers, etc., at Aberfan, for the Pleasant View Building Club. Plans, etc., may be seen at the office of Mr. O. P. Bevan, architect and surveyor, Express-chambers, Merthyr Tydfil.

✱ NO DATE.—**Barnsley.**—SCHOOL.—The Governors of the Barnsley and District Holgate Grammar School invite tenders for a boys' grammar school in Shaw-lane, Barnsley. See advertisement in this issue for further particulars.

NO DATE.—**Cross Keys.**—HOUSES.—Erection of four houses, Cross Keys, for Mr. Moore. Plans and specification at office of Mr. Walter Rosser, architect, Victoria-terrace, Newbridge.

NO DATE.—**Ogmore Vale.**—OFFICES.—Erection of new offices, etc., at Ogmore Vale, Glam. Names and addresses to Messrs. Cory Bros. & Co., Ltd., Collieries and Estates Department, Cardiff.

NO DATE.—**Sherburn Hill.**—COTTAGES.—Erection of five cottages for Sherburn Hill Co-operative Society, Ltd., at Shotton Colliery. Application to Mr. L. G. Ekins, architect, Co-operative Wholesale Society, West Blandford-street, Newcastle-upon-Tyne.

NO DATE.—**Tonna, Neath.**—HOUSES.—Erection of six houses at Tonna, Neath. Plans, etc., can be seen at the Barley Mow, Tonna.

ENGINEERING, IRON, AND STEEL.

OCTOBER 18.—**Shirley.**—ELECTRIC LIGHT.—Southampton Corporation invite tenders for installing electric light at Shirley Police-station. Specification may be inspected upon application to Mr. H. F. Street, Borough Electrical Engineer.

OCTOBER 18.—**Warrington.**—DRYER REPAIRS.—The Sanitary Works Committee invite tenders for repairing a steam jacketted dryer, 6 ft. diameter by 13 ft. long. Further particulars may be obtained from the Manager, Longford Depôt, Warrington.

OCTOBER 21.—**Tonypandy.**—HEATING APPARATUS.—The Trustees of the English Wesleyan Chapel, Tonypandy, invite tenders for the installation of a heating apparatus in the Chapel. All particulars and view of the building may be obtained from Mr. Lewis Jenkins, butcher.

OCTOBER 22.—**Rotherham.**—LAUNDRY MACHINERY.—South Rotherham, Handsworth, and Kiveton Park District Isolation Hospital Committee invite tenders for the providing and fixing of laundry machinery at the Hospital. Plans, etc., at the office of Mr. J. E. Whitehead, the architect, 38, Bank-street, Sheffield.

OCTOBER 23.—**Bowdon Lodge, Cheshire.**—ELECTRIC LIGHTING, ETC.—Electric lighting and wiring at Altrincham County High School for Girls. Form of tender, etc., can be obtained at the offices of Mr. Jos. Howarth, Clerk to the Committee, Education Department, Market-street, Altrincham, on payment of a deposit of 1*l.* 1s. Plans may be seen at the offices of the architects, Messrs. Sankey & Cubbon, 4, Chapel-walks, Manchester.

OCTOBER 23.—**Bowdon Lodge, Cheshire.**—HEATING, ETC.—Heating and ventilation at the Altrincham County High School for Girls. Plans, etc., can be obtained at the offices of Mr. Jos. Howarth, Clerk to the Committee, Education Department, Market-street, Altrincham, on payment of a deposit of 1*l.* 1s.

OCTOBER 27.—**Ilkley.**—WROUGHT-IRON RAILINGS AND GATES.—Ilkley U.D.C. invite tenders for providing and fixing about 108 lin. yds. of wrought-iron railings, 2 ft. 6 in. high, on the boundary walls at the Town Hall, Ilkley, together with one pair of entrance gates and three hand gates. Particulars, etc., can be obtained from the Surveyor to the Council.

NOVEMBER 4.—**Walworth.**—For alterations to well and pumps at Newington Workhouse, Westmoreland-road, Walworth, S.E.—Southwark Guardians invite tenders for certain alterations to the existing well and pump at the establishment. Forms of tender and conditions of contract may be obtained on application to offices of Mr. Sydney Wood, Clerk, Union Offices, John-street West, Blackfriars-road, S.E., on payment of 1*l.* 1s. Drawings of the proposed works may be seen at the Newington Workhouse.

MISCELLANEOUS.

OCTOBER 18.—**Grantown-on-Spey.**—TENNIS COURTS.—Tenders are invited for the alteration and extension of the above courts. The engineer will meet intending contractors on the ground on the 18th inst., at 2 p.m.

OCTOBER 18.—**Nottingham.**—FENCING.—The Public Parks Committee of the Nottingham Corporation invite tenders for the supply and erection of about 880 yds. of sawn wood paled fencing and gates at Bulwell Hall Park. Copies of the specification, etc., may be obtained from Mr. Frank B. Lewis, City Architect, Guildhall, on payment of 2*l.* 2s.

OCTOBER 18.—**Petworth.**—CARTAGE.—Petworth R.D.C. invite tenders for the supply of two horses and two men for the cartage of water for steam rolling. Further particulars and forms of tender can be obtained on application to Mr. Ernest H. Staffurth, Clerk to the Council, Petworth.

OCTOBER 18.—**Petworth.**—STEAM ROLLING.—The R.D.C. invite tenders for steam rolling and scarifying the roads. Forms of tender and further particulars may be obtained on application to Mr. Ernest H. Staffurth, Clerk to the Council, Petworth.

OCTOBER 19.—**Bray.**—STEAM ROLLING.—Bray U.D.C. invite tenders for steam rolling and scarifying certain roads in the Urban District. Specification may be seen at Town Hall.

OCTOBER 19.—**Maldens and Coombe.**—FENCING, ETC.—The U.D.C. invite tenders for supplying and fixing about 685 yds. of unclimbable iron fencing on their recreation ground, Kingston-road, New Malden. Also for levelling (*a*) one cricket or foot-ball pitch; (*b*) two cricket or football pitches, on the north side of the Central-avenue, Beverley Park, New Malden. The drawings, etc., may be seen, and specifications, etc., obtained, on application to the Engineer and Surveyor, Mr. Reginald H. Jeffes, A.M.Inst.C.E., at the Council Offices, New Malden, upon payments of a deposit of 3*l.* 3s. in respect of the fencing contract, and 5*l.* 5s. in respect of the levelling contract, by cheque payable to the Council.

OCTOBER 19.—**Milnsbridge.**—BOWLING GREEN.—Forming and laying of a bowling green at George-street, Milnsbridge. Plan, etc., may be seen at offices of Messrs. P. Taylor & Co., architects, Milnsbridge.

OCTOBER 20.—**Hollingbourn.**—TOOLS, ETC.—Hollingbourn R.D.C. invite tenders for the supply of tools to be used on the Council's roads; also for three snow ploughs and two hand carts. A list of the tools required, and specifications of snow plough and hand cart, can be obtained of Mr. H. J. Bracher, Clerk to the Council, 33, Earl-street, Maidstone.

OCTOBER 20.—**Shaftesbury.**—STEAM ROLLING.—Shaftesbury R.D.C. invite tenders for steam rolling the roads. Contractors also to tender for scarifying the roads where necessary. Mr. James Burbidge, Clerk, Shaftesbury.

OCTOBER 21.—**Hollingbourn.**—TEAM LABOUR.—The R.D.C. invite tenders for the supply of horses, carts, and men, for use on the highways. Forms of tender, etc., can be obtained of Mr. J. S. Roper, Surveyor, Hollingbourn, or of Mr. H. J. Bracher, 33, Earl-street, Maidstone, Clerk to the Council.

OCTOBER 21.—**Holywood.**—STEAM ROLLING.—Holywood U.D.C. invite tenders for steam rolling 150 tons (about) road metal on Bangor-road. Particulars may be obtained from Mr. David Bell, Town Clerk, Town Hall, Holywood.

OCTOBER 22.—**Rhondda.**—FENCING, ETC.—Rhondda U.D.C. invite tenders for about 550 yds. of strong, unclimbable, wrought-iron fencing and gates. Particulars may be obtained on application to Mr. W. J. Jones, Engineer and Surveyor, at the Council Offices, Pentre, Rhondda.

OCTOBER 23.—**North Walsham.**—STEAM ROAD ROLLER.—North Walsham U.D.C. invite tenders for a 10-ton steam road roller, with scarifier, for a period of about forty working days. Mr. E. J. Simpson, Surveyor, North Walsham.

OCTOBER 23.—**Taunton.**—FURNISHING.—Taunton Borough Education Committee invite tenders (on forms to be obtained from Mr. George H. Kite, Town Clerk and Clerk to the Borough Education Committee, Municipal Buildings) for furnishing two rooms at the Housewifery Centre, North Town School.

OCTOBER 23.—**Taunton.**—FURNISHING.—Taunton Borough Education Committee invite tenders (on forms to be obtained from Mr. George H. Kite, Town Clerk and Clerk to the Borough Education Committee, Municipal Buildings) for furnishing and equipping the workshop at the North Town School.

OCTOBER 25.—**Hipperholme.**—TEAM LABOUR.—The U.D.C. invite tenders for team labour required on the highways and other works for twelve months. Conditions may be seen, and tender forms obtained, at the Council Offices, Hipperholme.

OCTOBER 25.—**Steeton.**—FURNITURE.—West Riding C.C. Education Department invite tenders for furniture required for Steeton new Provided School. Full particulars may be obtained from the Education Department (Elementary Branch), County Hall, Wakefield.

OCTOBER 27.—**London.**—FURNITURE.—The Receiver for the Metropolitan Police District invites tenders for the supply of furniture for the service of the Metropolitan Police for three years. Printed forms of tender, with full directions, may be obtained from the Receiver, at his office, New Scotland-yard, S.W.

✱ NOVEMBER 1.—**Hendon.**—COAL SLACK.—The Hendon U.D.C. invite tenders for supply of 200 tons of best nutty coal slack. See advertisement in this issue for further particulars.

✱ NOVEMBER 2.—**London.**—FURNITURE.—The London C.C. invite tenders for supply of cupboards, tables, blackboards, honours boards, hat and coat racks, art easels, bench hooks, etc. See advertisement in this issue for further particulars.

DECEMBER 1.—**Wanstead.**—SCAVENGING, ETC.—Wanstead U.D.C. invite tenders:—(1) For the weekly collection of household refuse and ashes; (2) for providing water-carts with horses, harness, and men; (3) for providing carts with horses, harness, and men for general cartage in connexion with the roads, etc. For further particulars apply at the Council Offices, Wanstead, N.E. (Surveyor's Department), where forms of tender can be obtained and contract form inspected.

NO DATE.—**Ossett.**—BOWLING GREEN.—Tenders wanted, relaying of bowling green at Ossett. For specifications apply Mr. F. W. Spencer, 5, George-street, Ossett.

PAINTING, etc.

OCTOBER 19.—**Blackrock.**—PAINTING.—The U.D.C. of Blackrock invite tenders for painting the railings in front of the Town Hall, Technical School, and Library, and the windows of Town Hall, Technical School, and Library. Specifications can be seen at office of Mr. R. Finlay Heron, Town Clerk, Town Hall, Blackrock, Co. Dublin.

OCTOBER 19.—**Brentford.**—PAINTING.—The U.D.C. invite tenders for (*a*) the painting of the Council Offices, Clifden House, Boston-road; (*b*) the painting of the roof trusses at the Brentford Market, Kew Bridge; (*c*) the planing and beeswaxing of the floor of the north ward of their Isolation Hospital, Clayponds-lane; (*d*) the painting of the exterior of the said hospital; and (*e*) the fixing of two new bed-pan and urinal sinks at the said Hospital. Forms of tender, together with specifications, etc., may be obtained on application to Mr. J. W. Croxford, the Surveyor, at his office, Clifden House, Boston-road, Brentford.

ROADS, SANITARY, AND WATER WORKS.

OCTOBER 18.—**Ennis.**—SIDEWALK.—The U.D.C. invite tenders for making 160 lt. of flagged and curbed sidewalk from the corner of the Old Ground Hotel to meet path at the Town Hall. Specification may be seen at office of Mr. Michael J. Carmody, Clerk to Council.

OCTOBER 18.—**Rotherham.**—PRIVATE STREET IMPROVEMENTS.—The Corporation of Rotherham invite tenders for the making-up of the following streets: Ekin-street, Templeboro'; Cambridge-street (east end); Eastwood Mount and South-street, Kimberworth. The drawings, etc., may be seen, and forms of tender, etc., may be obtained from Mr. Ernest B. Martin, A.M.Inst.C.E., Borough Engineer, Town Hall, Rotherham, on payment of a deposit fee of 10s. for each street.

OCTOBER 18.—**Warrington.**—STREET WORKS.—The Paving and Sewerage Committee invite tenders for the forming and paving of Alexandra-street. Drawings, etc., may be seen, and forms of tender, etc., obtained, at the office of the Borough Surveyor, Town Hall.

OCTOBER 19.—**Abbots Langley.**—DRAINAGE OF PROPERTY AT WATERSIDE.—The Watford R.D.C. invite tenders for the carrying out of small works of drainage and water supply to private property situated at Waterside. A plan, etc., can be seen, and further particulars obtained, on application to the Council's Surveyor, Mr. Ernest Lailey, 9, Market-street, Watford.

OCTOBER 19.—**Bedford.**—PAVING.—The Authority invite tenders for paving in Kempston-road, Harpur-street, and The Embankment, Bedford, according to plans, etc., which, with the form of contract to be entered into, can be seen, and any other information obtained, at the Borough Surveyor's Office, Town Hall, Bedford.

OCTOBER 19.—**Kilfenora.**—WATERWORKS.—Ennistymon R.D.C. invite tenders for carrying out certain repairs to the reservoir of the Kilfenora Waterworks in accordance with the plan, etc., prepared by Mr. Brian E. Sheehy, M.Inst.C.E., Limerick, which can be seen at office of Mr. Nicholas Griffy, Clerk of Council, Board-room.

OCTOBER 19.—**Smarden.**—SEWER.—West Ashford R.D.C. invite tenders for laying in about 1,570 yds. of 4-in. and 6-in. pipe sewer at Smarden, and for the construction of an outfall tank and filter. Plan, etc., may be seen at office of Mr. Alfred Sims, Surveyor to the Council, Surveyor's Office, Charing.

OCTOBER 20.—**Chiswick.**—MAKING-UP.—The U.D.C. of Chiswick invite tenders for the making-up of parts of Park-road, Grove Park Station-road, and Hazeldene-road (897 yds.). Forms of tender on application to Mr. E. Willis, A.M.Inst.C.E., Surveyor, Town Hall, Chiswick, where plans, etc., may be inspected.

OCTOBER 20.—**Leeds.**—WHARF ALTERATIONS.—For certain structural alterations (chiefly timberwork) to the existing loading stage on the canal wharf at the Sewage Works, Knostrop, Leeds. The contract documents and drawings can be inspected, and copies of the form of tender obtained, on application being made at the offices of Mr. G. A. Hart, Sewerage Engineer, Municipal Buildings.

OCTOBER 20.—**Rochdale.**—SEWERING.—The Paving, etc., Committee invite tenders for the sewering work required in Tell-street, Rochdale. Plans, etc., may be seen, and copies of the quantities and form of tender obtained, at the Borough Surveyor's office.

OCTOBER 20.—**West Derby.**—DIVERSION OF FOOTPATH, WALTON WORKHOUSE.—The Guardians invite tenders for the work required in connexion with the above from contractors having places of business, etc., within the Unions of West Derby, Township of Toxteth Park, or the Parish of Liverpool. A set of quantities can be obtained from Mr. Harris P. Cleaver, Union Clerk, Brougham-terrace, West Derby-road, Liverpool, on payment of 2*l.* 2s. Specifications and drawings can be seen at the office of the architect, Mr. C. H. Lancaster, Brougham-terrace, West Derby-road, Liverpool.

OCTOBER 21.—**Treherbert.**—WATER SUPPLY.—Llanybyther R.D.C. invite tenders for the proposed works of water supply at Treherbert, in the Parish of Pencarreg, and within one and a half miles from Lampeter Station. Plans, etc., will be deposited for inspection at the Lock and Key Inn, near Treherbert. Bills of quantities, etc., can be obtained of Mr. Joshua Evans, Sanitary Inspector, Llanybyther.

OCTOBER 22.—**Carnwath.**—DRAINAGE.—Tenders are invited for laying 2,200 lin. yds. of 8-in. and 9-in. fireclay pipes, etc. Schedules may be obtained, and plans seen, at the address of Mr. Wm. Allan Carter, M.Inst.C.E., engineer, 51, Queen-street, Edinburgh. A deposit of 1*l.* 1s. will be required. An engineer will attend at 11 a.m. at Carnwath Station on October 18.

OCTOBER 22.—**Wroxall, I.W.**—BURIAL GROUND.—Tenders are invited for road-making, fencing, planting, etc., in forming a burial ground for the Parish Council of Wroxall, Isle of Wight. Plans, etc., may be seen at the house of the Chairman of the Council, Mr. Henry Linington, Wroxall.

OCTOBER 25.—**Dunfermline.**—PIPING.—The Dunfermline District Committee of the C.C. of Fife invite offers for the work to be done in providing and laying about sixteen and a half miles of cast-iron distribution piping throughout the district under their charge. Drawings can be seen at the office of Mr. John D. Parker, C.E., 217, West George-street, Glasgow, from whom also copies of the specification,

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

etc., may be obtained on payment of a deposit of 1*l.* 1s. An assistant engineer will meet contractors at the County-buildings, Dunfermline, at 10.45 a.m. on October 19.

OCTOBER 25.—**Finchley.**—MAKING-UP.—The U.D.C. of Finchley invite tenders for the making-up of private streets, together with all works incidental thereto. Plans, etc., may be seen at the offices of the Council's Engineer and Surveyor, Council Offices, Church End, Finchley, N., and copies of schedules, forms of tender, etc., supplied on the deposit of 2*l.* in respect of the documents for each street.

OCTOBER 25.—**Hornsey.**—ROAD REPAIRS.—The T.C. will receive tenders for the carrying out of repairs required to a part or section of the street called Stormont-road, Highgate. Forms of tender, etc., and particulars can be obtained from Mr. E. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, Highgate.

OCTOBER 25.—**Southwick.**—MAKING-UP OF PRIVATE STREETS.—Southwick U.D.C. invite tenders for the work of sewering, levelling, paving, metalling, flagging, channelling, making good, and lighting certain portions of the private streets known as Southdown-road and road east side of Green. Plans, etc., may be seen, and the specification, etc., obtained of Mr. Geo. W. Warr, Surveyor to the Council, Town Hall, Southwick. The sum of 1*l.* 1s. will be required as a deposit.

✱ OCTOBER 26. — **Bromley.** — ROAD-MAKING.—The Bromley B.C. invite tenders for sewering, levelling, paving, metalling, channelling, and making good a portion of Plaistow-grove. See advertisement in this issue for further particulars.

OCTOBER 28. — **Birstall.** — ROAD WORKS.—The U.D.C. of Birstall invite tenders for the levelling, paving, flagging, and completing of Victoria-street. Plans, etc., may be seen on application to the Council Surveyor, Mr. Arthur Walker.

OCTOBER 28. — **Surbiton.** — STREET WORKS.—The U.D.C. of Surbiton invite tenders for private street improvement works at Lenelby-road and Tolworth Park-road, Surbiton. The drawings, etc., can be seen at office of Mr. Henry T. Mather, Engineer and Surveyor, Council Offices, Ewell-road, Surbiton, and a copy of the specification obtained. A deposit of 1*l.* 1s. must be made.

OCTOBER 29. — **Epsom.** — SEWAGE WORKS.—Epsom U.D.C. invite tenders for the execution of various works at their Sewage Farm, Hook-road, Epsom. Plans, etc., can be seen, and bills of quantities may be obtained, upon application to Mr. Edward R. Capon, Surveyor to the Council, Bromley Hurst, Church-street, Epsom, on a payment of 5*l.* 5s.

NOVEMBER 1. — **Headington and Marston.** — SEWERAGE.—The R.D.C. of Headington invite tenders for sewering and contingent works in the Parishes of Headington and Marston, and for an outfall sewer partially within the City of Oxford. Further particulars, etc., may be obtained, and plans may be seen, at the offices of the consulting engineer, Mr. H. Howard Humphreys, 28, Victoria-street, Westminster. Intending contractors will be required to deposit a sum of 5*l.* prior to particulars being furnished.

✱ NOVEMBER 1.—**Hendon.**—SEWER, ETC.—The Hendon U.D.C. invite tenders for sewering, kerbing, and channelling works. See advertisement in this issue for further particulars.

NOVEMBER 1. — **Killearn.**—RESERVOIR.—The Clydebank and District Water Trustees invite tenders for the completion of the reservoir on Burn Crooks, in the Parish of Killearn. Drawings may be seen at the office of the engineers, Messrs. Warren & Stuart, 94, Hope-street, Glasgow, from whom copies of the specification, etc., may be obtained on deposit of 5*l.* 5s. An assistant engineer will meet intending offerers on October 19 at Milngavie Station, at 9.50 a.m.

NOVEMBER 1. — **Pewsey.** — WATERWORKS.—Pewsey R.D.C. invite tenders for 5,592 lin. yds. of 4-in. and 3-in. cast-iron water mains, with valves, etc.; the providing and fixing of duplicate deep-well pumps, together with a windmill and an oil engine; the building of an engine-house, and the construction of a covered storage reservoir. The drawings, etc., may be seen at office of Mr. S. B. Dixon, Clerk to the Pewsey R.D.C., Pewsey. Copies of specification, etc., may be obtained from the engineers, Messrs. Fairbank & Son, C.E., of Lendal-chambers, York, on deposit of 3*l.* 3s.

NO DATE.—**Acrise.**—SANITARY WORKS.—The School Managers invite tenders:—(*a*) For the removal of soil from earth closets twice weekly, and for the removal of ashes occasionally; (*b*) for pumping and removing sewage from cesspool about three times per year. Further information may be obtained at the school, and tenders are to be sent to the Correspondent, Mr. A. E. Watts, 51, Guildhall-street, Folkestone.

STONES, MATERIAL, AND STORES.

OCTOBER 19. — **Brentford.** — GUERNSEY GRANITE SPALLS.—The Guardians invite tenders for the supply and delivery of 1,500 tons of best hard Guernsey granite spalls. Forms of tender may be obtained upon application. Mr. William Stephens, Clerk to the Guardians, Union Offices, Isleworth, W.

OCTOBER 19. — **Gosforth.** — ROADS, ETC.—Gosforth U.D.C. invite tenders for constructing roads and erecting wood fencing in connexion with the laying out of land for allotment purposes. All particulars can be obtained from the Surveyor, Mr. Geo. Nelson, A.M.Inst.C.E., Council Chambers.

OCTOBER 20.—**Hastings.**—TIMBER.—The Committee invite tenders for the supply of timber to the Technical Schools for the year 1910. Form of tender may be obtained at the Offices of the Committee.

OCTOBER 20. — **Ilkley.** — LIMESTONE AND GRANITE.—Ilkley U.D.C. invite tenders for limestone and granite. Mr. Frank Hall, Clerk, Council Offices, Ilkley.

OCTOBER 21. — **Fulham.**—TIMBER.—The Guardians of the Poor of Fulham Parish invite tenders for the supply of 50 fathoms of pole ends (St. Petersburg roundwood) for delivery at the Workhouse, Belmont, Surrey. Forms of tender may be obtained on application at office of Mr. E. J. Mott, Clerk to the Guardians, Guardians' Offices, 129, Fulham Palace-road, Hammersmith, W., or by forwarding a stamped addressed foolscap envelope.

OCTOBER 23.—**Dundee.**—RAILS, ETC.—Dundee T.C. invite tenders for the supply of (1) 45 tons steel tramway rails; (2) 60,000 creosoted deal paving blocks. Specifications may be seen, and schedules of quantities, etc., obtained, at the office of Mr. Jas. Thomson, City Engineer, 91, Commercial-street, Dundee.

OCTOBER 25.—**Glyncorrwg.**—STORES.—The U.D.C. invite tenders for the supply of (1) cast-iron pipes; (2) stoneware pipes; (3) limestone metalling; (4) paving kerb and channel, etc. Particulars, together with any information required, may be obtained upon application to Mr. W. P. Jones, Surveyor, Council Offices, Cymmer, Port Talbot.

OCTOBER 25. — **Mountain Ash.** — STORES.—The Mountain Ash U.D.C. invite tenders for the supply of electrical stores in connexion with their electricity undertaking. Conditions of contracts, etc., may be obtained on application to Mr. W. G. Thomas, Surveyor's Office, Town Hall, Mountain Ash, or at the office of Mr. B. J. Day, electrical engineer, 3, Park-place, Cardiff.

OCTOBER 26. — **Frinton-on-Sea.** — GRANITE.—Frinton-on-Sea U.D.C. invite tenders for the supply and immediate delivery of not less than 200 tons of Quenast, Guernsey, or other approved granite. Forms of tender and further particulars may be obtained from Mr. E. M. Bate, Surveyor to the Council.

OCTOBER 27. — **Llantrisant and Llantwit Fardre.**—MATERIALS.—The R.D.C. invite tenders for the supply and haulage of materials. Specifications, etc., may be obtained from Mr. Gomer S. Morgan, Surveyor, School-street, Pontyclun.

OCTOBER 28.—**Newtownards.**—LIME.—The U.D.C. invite tenders for the supply of lime to the Gasworks for twelve months. Mr. H. M'Cartney, Clerk to the Council, Council Offices, Town Hall, Newtownards.

OCTOBER 30. — **Dublin.** — STORES.—Great Northern Railway Company (Ireland) Directors invite tenders for the supply of stores for twelve months. Forms of tender can be obtained from the Secretary on payment of 1s. for each form (stamps not to be sent).

NOVEMBER 2.—**Barry.**—STORES.—The Barry Railway Company invite tenders for the supply of general stores and materials. Specifications, etc., may be obtained from Mr. E. T. Lawrence, Secretary, Company's Offices, Barry Docks, Glam.

NOVEMBER 8. — **Aberdare.** — OILS, ETC. — The Directors of the Powell Duffryn Steam Coal Company, Ltd., invite tenders for the supply of:—No. 16.—Oils, tallow, and grease. Forms of tender and all particulars can be obtained on application to the Stores Manager, Aberaman Offices, Aberdare.

Public Appointment.

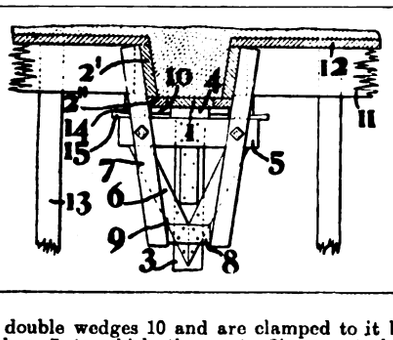
Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*ASSISTANT ENGINEER	Hong Kong Pub. Wks. Dept.	See advertisement in this issue	Oct. 29

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*PLANT AND MACHINERY, TIMBER MERCHANT—Roval Wharf, Fulham	D. White	Oct. 26
*FREEHOLD PROPERTY, CITY OF LONDON—At the Mart	Edwin Fox & Bousfield	Oct. 27
*BUILDING PLANT & MATERIALS, KENNINGTON PARK-RD., S.E.—On the Premises	H. J. Bromley	Oct. 28
*LEASEHOLD PREMISES, BATTERSEA BRIDGE—At the Mart	Harold Griffin	do.
*WDWRKG. MCHRY., PLANT, STORES, ETC., BELVEDERE-ROAD, S.E.—On the Premises	Fuller, Horsey, Sons, & Cassell	Nov. 10
*FREEHOLD BUILDING LAND, ALDERSHOT, FARNBOROUGH, & BISLEY—At the Mart	Farebrother, Ellis, Egerton, Breach, & Co.	Nov. 11

PATENTS—*Continued from page 420.*

supported by posts 3 and intermediate wood blocks 4. The side members, comprising parts 2′ 2″, are kept in line with the bottom member



by double wedges 10 and are clamped to it by timbers 7, to which the parts 2′ are attached and which are pivotally mounted on cross-beams 5, the clamping action being obtained by driving-in wedges 9 between the bottom ends of the timbers 7 and blocks 8, secured to the posts or to the braces 6. Wooden beams 11, which support the floor mould 12, are supported by vertical members 13, and blocks 14, which rest on wedges 15 driven in between the blocks and the cross-beams 5. A space is left between the beams 11 and the side members 2 to allow ready removal of the latter.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

September 29.—By R. L. ASHTON (at Holsworthy).

Bradworthy, Devon.—West Down Estate, 192 a., f.	£3,962

September 30.—By PAXTON & HOLIDAY (at Banbury).

Moreton Pinkney, Northants.—The Lodge Farm, 192 a. 0 r, 9 p., f.	3,100

October 4.—By R. W. FULLER, MOON, & FULLER.

Ewell, Surrey.—1 and 2, Tudor-cottages, f., w.r. 46*l.* 16s.	£670
Cheam-rd., freehold land, 5½ a.	1,950
Kingston-rd., freehold land, 4 a.	570

By RIPPON, BOSWELL, & WHITAKER (at Copplestone).

Crediton, Devon.—Elston Barton Farm, 121 a. 1 r. 16 p., f.	3,961

October 5.—By BREADMORE & WEBB.

Kew.—9, Ennerdale-road, u.t. 67 yrs., g.r. 2*l.*, p.	1,000

October 6.—By BEARD & SON.

Westbourne Park.—46, Great Western-rd. (s), u.t. 53 yrs., g.r. 11*l.*, e.r. 60*l.*	475

By GEO. BILLINGS.

Hackney.—16, Queensdown-rd., f., y.r. 50*l.*	620

By BRODIE, TIMBS, & CO.

Palmers Green.—12, Old Park-villas, u.t. 85¾ yrs., g.r. 7*l.* 10s., y.r. 46*l.*	450

By GORDON & GORDON.

Beckenham.—32, Pelham-road, u.t. 59 yrs., g.r. 5*l.*, e.r. 26*l.*	160

Digitized by Google

By HEATH, BROOK, & SNEATH.

Dulwich.—25 to 29, Worlingham-rd., u.t. 73 yrs., g.r. 30*l.*, gross rentals 188*l.* £1,135

By A. BURTENSHAW & SON (at Hailsham).

Hurstmonceux, Sussex.—Rocks Farm, 8 a. 1 r. 25 p., f..... 475

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	,, delivered
Flettons	1 4 6	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
Scappled random blocks	3 0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoo	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. dep.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 ,,
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 ,,
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	,,
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards—1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	,,
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	... 4 15 0

JOINERS' WOOD.	At per standard. £ s. d.	£ s. d.
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg—First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 0 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
Battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	... 0 3 9
Small " "	0 2 6	... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¼ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	... 0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak per load	17 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0

WOOD (*continued*).

JOINERS' WOOD (*continued*)—

Prepared Flooring, etc.—	Per square. £ s. d.	£ s. d.
1 in. by 7 in. yellow, planed and shot	0 13 6	... 0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	... 0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	... 0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	... 0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	... 0 13 6
1 in. by 7 in. " "	0 14 0	... 0 18 0
¾ in. by 7 in. white " "	0 10 0	... 0 11 6
1 in. by 7 in. " "	0 12 9	... 0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	... 7 10 0
Compound Girders, ordinary sections	9 0 0	... 10 0 0
Steel Compound Stanchions	11 0 0	... 12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	... 10 0 0
Flitch Plates	9 0 0	... 9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	... 8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0	... 9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	... 9 5 0
Staffordshire "Marked Bars"	10 10 0	... —
Mild Steel Bars	8 15 0	... 9 5 0
Hoop Iron, basis price	9 5 0	... 9 10 0
" " Galvanised	17 0 0	... —

(*And upwards, according to size and gauge.)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0	... —
" " 24 g.	10 15 0	... —
" " 26 g.	12 5 0	... —
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	... —
Ordinary sizes to 22 g. and 24 g.	15 10 0	... —
" " 26 g.	16 10 0	... —
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0	... —
" " 22 g. and 24 g.	18 10 0	... —
" " 26 g.	20 0 0	... —
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	... —
" " 22 g. and 24 g.	14 15 0	... —
" " 26 g.	16 5 0	... —
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	... —
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	... —
" " " 26 g.	15 0 0	... —
Cut Nails, 3 in. to 6 in.	10 10 0	... 11 0 0

(Under 3 in., usual trade extras.)

	Per ton, in London £ s. d.	
LEAD, &c.		
LEAD—Sheet, English, 3lb. and up.	16 15 0	... —
Pipe in coils	17 5 0	... —
Soil pipe	19 5 0	... —
Compo pipe	20 5 0	... —
ZINC—Sheet—Vielle Montagne	27 5 0	... —
Silesian	27 0 0	... —
COPPER—		
Strong sheet per lb.	0 1 0	... —
Thin " "	0 1 1	... —
Copper nails "	0 0 10	... —
Copper wire "	0 0 10	... —
BRASS—		
Strong Sheet "	0 0 11	... —
Thin "	0 1 0	... —
TIN—English Ingots "	0 1 4	... —
SOLDER—Plumbers' "	0 0 6½	... —
Tinmen's "	0 0 9	... —
Blowpipe "	0 0 11	... —

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¼d. " "
21 oz. thirds	3d. " "
" fourths	2¼d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4¼d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz.	4¼d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅛ "	2¾d. " "
⅜ "	2¼d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 3
" " ,, in barrels	"	0 2 4
" " ,, in drums	"	0 2 7
Boiled ,, ,, in barrels	"	0 2 7
" " ,, in drums	"	0 2 10
Turpentine in barrels	"	0 3 5
" in drums	"	0 3 7
Genuine Ground English White Lead	per ton	20 0 0
Red Lead, Dry	"	19 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

Digitized by Google

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

Town Planning in Practice: an Introduction to the Art of Designing Cities and Suburbs. By RAYMOND UNWIN. Pp. 403. (London; T. Fisher Unwin; 1909. 21s.)

THE appearance of a second large quarto volume on town planning, so soon after that by Mr. Inigo Triggs (reviewed in our Supplement of August 21), is in itself an indication of the increased attention now given to this subject.

Mr. Unwin commences his task with a chapter on "Civic Art as the Expression of Civic Life," in which he puts the subject on its right basis. Recognising, as we are glad to see, the value and the beneficial influence in many details of "our much-abused building by-laws," he urges that we have hitherto been too content with details, sanitary and ornamental, to the exclusion of the proper consideration of the general effect of the good or bad laying out of a city.

"We are too much in the habit of regarding art as something added from without, some species of expensive trimming put on. Much of the restless fussy vulgarity we see about us springs from this mistake. So long as art is regarded as a trimming, a species of crochet-work to be stitched in ever-increasing quantities to the garments of life, it is vain to expect its true importance to be recognised. Civic art is too often understood to consist in filling our streets with marble fountains, dotting our squares with groups of statuary, twining our lamp-posts with wriggling acanthus leaves or dolphins' tails, and our buildings with meaningless bunches of fruit and flowers tied up with impossible stone ribbons."

This condemnation of the idea that cities or buildings can be rendered artistic by patching ornamental details on to them has been repeated many times of late years, but it will have to be repeated much oftener before the truth becomes generally recognised, in this country, that art works from within outwards, and consists in the way of doing things, and not in the addition of so-called ornaments. The author goes on to remark that we have become so used to the ugliness of our towns—an ugliness produced partly by the repetition of a commonplace type of house without regard to anything but economy of construction—that we do not realise what a remarkable and unique feature the ugliness of modern life is. A little too much is perhaps made of the fact that mediæval towns, built as they were originally to cram as many houses as possible within a space limited by the town ramparts, appear picturesque to us now; we do not know that they appeared picturesque to their builders, or were even thought of in that sense at all. But there was individuality in building then; streets were not lined with houses all on the same pattern for the convenience and economy of the builder. What we have to seek now, in the new art of conscious town planning, is individuality subject to a general scheme, which shall be effective in itself and not merely by the addition of miscellaneous ornamentation.

Opportunities for planning a city *ab initio* are not likely to occur often in the immediate future, though there have been a good many such chances in the case of cities founded in America since the United States came into political existence, and Washington is almost a unique instance of a city projected from the first on a grandiose and comprehensive plan, which seems at length to be in the way of being completely realised.

Some of the cities of antiquity, notably Ephesus and Palmyra, were undoubtedly laid out on an architectural scheme; mediæval cities in general were not. Yet there is, as the author shows, a certain individuality in towns, as in the cross-planning of Chester and the approximate ring-planning of Moscow, and the plans illustrating the chapter on this subject are of considerable interest. We can hardly, however, recognise any guiding principle in the plan of Pompeii, except the practical one of keeping the principal buildings near the Forum. Among towns of a more modern period Nancy affords a fine example of a small town planned with a special eye to architectural effect; but that was the unusual case of a town laid out at the orders of one man and in accordance with the plans of his architect. The plan of the proposed town of Prince Rupert, at the western terminus of the Grand Trunk Pacific railway, as laid by Messrs. Hall & Brett, of Boston, is a rare example of a complete plan for a modern town. It has some resemblance to the scheme of Old and New Edinburgh, and for the same reason; part of the town is on a flat plain, part on elevated land; that part which is on the flat is laid out on a rectangular system of parallelograms, that on the high ground is in irregular curved lines which one may suppose to be partly dictated by the natural contour lines of the land—if it is not it ought to be. In this case the high land is the residential portion and the flat area the portion closely laid out in streets and building blocks; the reverse of the Edinburgh plan, where the lower land is the residential portion; this however was rather the influence of circumstances than of choice, the high land being already occupied by the Old Town. In the proposed Prince Rupert city the portion on the flat is shown in a far too formal "grid-iron" plan, parallel streets crossed at right angles by others; an arrangement not only monotonous in effect but unpractical in regard to locomotion.

Nevertheless, we are entirely in favour of formal planning of towns or districts, in the cases in which there is an opportunity of initiating and carrying out a complete scheme. The author suggests that neither faulty nor informal planning can be recommended as the right thing under all circumstances; that he who favours the one principle will be constrained to admit the beauty of some towns laid out on the opposite system. But where an informally-planned town is recognised as beautiful, we believe that it will nearly always be found that it is an old town where the informality is the result of a natural growth, and that all attempts to lay out a town on a calculated irregularity will betray themselves and defeat their own end. Town planning is an art, in fact, and it neither can nor should be made to simulate a natural development.

The chapter on "The City Survey" contains much excellent practical suggestion in connexion with the problem of improving existing towns, which in England is in general all there is opportunity for: the chapter seems in fact to be written with the idea of the laying out of a new town, but the considerations contained in it would mostly apply equally to schemes for the improvement of an existing town. For the selecting of open spaces we may substitute the formation of open spaces where they do not sufficiently exist; a kind of improvement which is continually going on in Paris, and for which in this country the Housing and Town Planning Bill, in its original form and before it had been cut down and enfeebled in the House of Lords, would have offered great facilities. In regard to one point we cannot quite agree with the author. He complains that loss of individuality in town architecture is partly due to the ease of modern long distance carriage, which takes Welsh slates to Whitby and Ruabon tiles to Rowsley:—

"The slates displace the red roofs which were one of the glories of the old fishing town, while the tiles drive out the stone slabs which gave character to the Derbyshire village. But what folly it is, surely, that we should allow our cheap transit to reduce all our towns to one dead level of characterless jumble, instead of preserving in each its natural characteristic, which for ages has lent an interest and variety to the towns and villages of Britain, hardly to be found elsewhere."

To which it may surely be replied, that just as the inability to get materials from a distance was a factor in ancient building, so the ability to get them now is a factor in modern building. We have got cheap transit; why act as if we had it not? And is it not possible that the Derbyshire cottage builders would have preferred a lighter roof covering to their heavy and clumsy-looking stone slates, if they could have obtained it as cheaply?

The author has some good remarks on the subject of approaches. The old city gateway, which, as he observes, was intended as much to keep people out as to afford them entrance, has gone out of date along with the disappearance of walled towns, but we quite agree that it is fitting to mark the point where main roads cross the boundaries and enter towns, or new districts in towns; "for example, some little forecourt of green surrounded by buildings and led up to by an avenue of trees would strike at once the necessary note." It would; but we should be inclined to say a word for the noble feature of the built archway, no longer a gate shutting out the entrance to a fortified town, but a ceremonial arch inviting and giving a dignity to the entry. The author justly remarks, also, how much may be done in the way of giving suitable dignity to the entrance to or exit from a terminal railway station, which in the present day is in fact the most important entry to a city. The London and North-Western Railway Company recognised this at the outset, in erecting their Doric portico; and though it would be done in a different way now, the erection of that portico presented a spirited example which, in this country, might well have been followed. We concur also in the author's suggestion that a railway terminus should always have a square or open space in front of it, to avoid the inconvenience of vehicles from the station being turned at once into a stream of passing traffic; we might add also, as one way of giving a little architectural emphasis to the terminus front or gateway.

In the chapter on "Centres and Enclosed Places" there is some good and rather new criticism on the subject. The author emphasises the idea, which is sometimes lost sight of, that to a *place* belongs properly the idea and appearance of enclosure, and that streets leading into it should not break it up so far as to destroy this impression of enclosure. We see the results of this in Oxford and Piccadilly circuses, where the intended effect of a circular space is almost entirely lost by the amount cut out of its boundaries by the street openings. But in fact Mr. Unwin is inclined to deny the name of *place* to the circular openings with radiating roads which are so numerous in Paris: and we think he is right. A *place*, which is an adopted French word for which we have no precise equivalent, might be defined as a

Digitized by Google

"square" which is not square, and need not be symmetrical or rectangular, though it is generally better so. Nottingham market-place is a good example of the *place* on lines not parallel, often found in the old towns. Sitte's theory that the irregular *places* of the Middle Ages were deliberately designed so for architectural reasons the author describes as "pushed further than the evidence will support"; we should say, in more decisive terms, that it is absurd on the face of it, though we quite agree that these old irregular *places* do in fact look very well. We should not recommend, however, the designing of a *place* in a modern town on such lines. But the position that a *place* is an enclosure, and ought not to be so cut up in its boundaries as to lose that character, is important and should be kept in mind by town planners.

We have only space to note a few special points in the remaining portions of the book. The author has a good word to say for straight streets, which often afford the finest approach to an important building; he suggests the breaking of the line here and there by setting back some of the buildings, but in comparing the Rue de Rivoli disadvantageously, in this respect, with the Wertnerstrasse at Vienna, he seems to overlook the actual breaking of the line of the great Paris street by streets falling into it, one of which at least is widened into a small *place* with a statue in it, which produces just the same effect as the proposed setting back of some of the buildings. The suggestion that a statue or a monument in a square should *not* be in the centre of it is a doubtful one; it need not be, but in the case of the most important class of monuments and the most architecturally imposing class of square, we should say that the centre is the most dignified and effective position for the monument. The right suggestion is given for justifying the use of curved lines of street, *i.e.*, when something in the contour lines of the site seems to lead to it; otherwise, as he says, the average surveyor's idea that curves and meandering lines, without motive, are in themselves a beauty, is indefensible.

The suggestion that by-laws prescribing width of roads should be more elastic in their requirements, in accordance with the nature of the roads and the houses built along them, is of doubtful wisdom. It is true that streets of small houses where no tram passes do not require "wastes of asphalt and macadam" in front of them, but it is a question also of spacing, and part of the road might be grass instead of a waste of asphalt; the elasticity should rather regard the materials than the width of the road. The illustrations of "picturesque treatment of a steep street at Dinan," and "bad modern treatment of steep street," are all very well as to appearance, but what is wheeled traffic to do with the stepped street at Dinan? We may draw special attention to the remarks on page 329 in regard to the mean treatment of the backs of town houses. The suggestion for aligning a curve of a road with blocks of buildings of rectangular plan, *i.e.*, avoiding the curve in the buildings, is of doubtful merit; it saves a little inconvenience in planning, but would have a somewhat ragged appearance; moreover, there is a great deal of effect to be got out of curved lines of building. In regard to providing for a certain harmony of style and effect in buildings of the same neighbourhood, the system which has been partially employed at the Hampstead suburb, of asking two or three architects to meet and agree on a style and treatment for a certain group of buildings, seems a very good one, and might be employed on other occasions with advantage.

The author's theory of mixing different classes of residences and residents on one building site, of which we have already heard at Hampstead, is Utopian. People with a certain range of income and of tastes and habits of living will prefer to live among those of their own class, and it is no use expecting them to do otherwise.

But the book is one with which, on the whole, we agree largely, and is very well done both in regard to illustration, literary matter, and print and get-up generally.

French Châteaux and Gardens of the XVIth Century: Reproductions of Contemporary Drawings (hitherto unpublished). By ANDROUET DU CERCEAU. Edited by W. H. WARD, A.R.I.B.A. Folio; pp. 33, with 27 Plates. (London; B. T. Batsford; 1909. 25s.)

THIS is a valuable volume; it consists of reproductions from original drawings by Androuet du Cerceau (Androuet "of the Hoop," from the circle or hoop which was the sign of what would now be called his office) which are in the British Museum, and have not been before published. A great many of them are drawings made for "Les Plus excellents Bastiments de France," a work now very scarce; but in the days of its first publication the art of reproducing in facsimile did not exist, and Androuet's drawings appear in the old book translated into a somewhat meagre and mechanical kind of engraving which does not give a just idea of the merit of the originals.

The wish of the Editor was to render the book an illustration of the architecture of the French Renaissance and of the work of Androuet especially; and secondly, to place before the public matter not otherwise available. Hence all drawings referring to pre-Renaissance times have been excluded; and where there was more than one view of the same building, the preference has been given to one not followed in the old engravings.

A short account of Androuet du Cerceau and his life is given, with some attempt at deciding how much of the work with which his name is connected was actually his. This is a point about which there can never now be any real certainty; but the Editor gives good reasons for his belief that in the case of Verneuil-sur-Oise, Charleval, and the Maison Blanche at Gaillon, we have Androuet's own designs. Our own impression however is that, like Vitruvius, Androuet had a kind of acceptance as a literary architect and an illustrator, much wider than his actual work as an architect would have given him.

The reproduced illustrations, mostly in the old manner of a bird's-eye perspective, are certainly superior in effect to the engraved drawings; but a great deal of the interest and value of the book consists in the large number of plans given. There is a poetry and inventiveness in planning, in many of these French Renaissance châteaux, which is very suggestive to the imagination of the modern architect. Some, such as Chambord and Ecouen, are conscientiously symmetrical, while in others, such as that of Fontainebleau as it was in the XVIth century, we meet with the wildest and most defiant irregularity.

A very interesting and valuable feature in the work is the short summary of the architectural history of the Louvre and the Tuileries, with reproductions of the isometrical view and the perspective view of the Tuileries as intended by Philibert de l'Orme.

We hardly think the Editor has done much for Androuet's reputation by rendering it probable that the Maison Blanche at Gaillon was his design. The drawing of part of the elevation is reproduced, concerning which we can only agree with Fergusson that "France may congratulate herself that no such monstrosity disfigures her soil." It seems, however, to have been actually built, but was fortunately long ago destroyed. In point of architectural taste we should call it, as shown in the drawing, one of the worst things the Renaissance ever invented, and it hardly increases one's respect for Du Cerceau. The drawings of ideal châteaux from his hand are, however, very interesting, and the book is a valuable addition to any architectural library.

The Decoration and Furniture of English Mansions During the XVIIth and XVIIIth Centuries. By FRANCIS LENYGON. Folio; pp. 204. (London; T. Warner Laurie; 1909. 31s. 6d.)

THIS is essentially a book *de luxe* of fine photographic illustrations of furniture and decoration of the periods referred to in the title. Not all of these, in spite of the prestige of their date, are designs to be admired; there is a good deal of showy and meretricious ornament, interesting as representing the art of that period, but not such as we would willingly see imitated now. Among the articles of furniture illustrated on page 24, for instance, the table of "classic design" has almost every fault in the design of the legs that table-legs could have; while the inlaid cabinet on the same page is in excellent and refined taste, and seems almost to belong to another world of art. Inlay, however, is a method of decoration which has often exercised a restraining effect on the artist, both in ancient and modern times; it precludes relief and it is a process which almost necessitates severity of line in the decorative design.

The period of Kent was one in which many bad things were done, and his side-table on page 38, supported by dogs and with a kind of Medusa head depending underneath it from between two swags, is a kind of thing that one may devoutly hope never to see repeated in these days, though it is a matter of interest to know that this was once considered admirable work, and designed by one of the first architects of his date. It is curious to contrast this bumptious kind of design in furniture with Kent's staid and severe architecture as shown at the Horse Guards, but that is the kind of contrast often seen between the architecture and the furniture of this period; the architecture was almost too tame, while the furniture ran riot.

As a collection of illustrations of decorative work of a sumptuous order this is a fine volume, and the literary portion is well written.

Modern Cabinetwork, Furniture, and Fitments. Illustrated by over 1,000 Practical Workshop Drawings, Photographs and Original Designs. By PERCY A. WELLS and JOHN HOOPER. Pp. 384. (London: B. T. Batsford. 1909. 12s. 6d. net.)

OUR cabinet-makers have a glorious tradition to uphold; the danger lies in the increasing tendency to division of labour and consequent production of men who are specialists in a single branch of the craft, in place of the all-round workman. Never was there a wider field than at the present day; apart from domestic furniture, museums, libraries, and offices call for skilled work that must adapt itself to every varying requirements, while modern luxury even demands an incursion into the domain of the shipwright and the coach-builder, in the fittings of ocean steamships and railway trains. The utility of a work such as that under review, therefore, is obvious, and the more so when we consider that no work has hitherto been published dealing with changes which have taken place in "methods of production as well as in taste and fashion as they affect home furnishing" during the last twenty-five years.

The authors are well equipped for their task; Mr. Percy A. Wells is advisory instructor to the London County Council Central School of Arts and Crafts, while Mr. John Hooper has gained many academical distinctions in his craft. To indicate the scope of the book we cannot do better than quote from the preface. "It has been the aim of the authors to produce a book which illustrates step by step the practice of the craft in all its applications, from the making of a joint

Digitized by Google

to the preparation, setting out, and complete construction of the numerous and various types of furniture and woodwork which the cabinet-maker is called upon to make." In the early part of the book full and valuable information is given on tools, appliances, and materials, with a chapter on geometrical drawing and perspective. Next we have a section on "Joints and their Application," fully illustrated by drawings. Following this is a long chapter on "Workshop Practice and Construction." The remainder is mainly devoted to practical examples, old and new, of every kind and variety of furniture and "fitment." The historic styles of furniture are briefly described and illustrated, and a list is given of historic homes containing collections of furniture which are open to the public. In addition there is a chronological chart, giving the names, dates, general characteristics, and proportions of chairs and seats in various styles. The work aims, in short, at being the modern cabinet-maker's *vade mecum*, and, we think, with success. At the end of the book is a glossary of terms. In conclusion, we congratulate the authors on the production of a work which cannot fail to be of great value to the practical craftsman, and which all interested in furniture may read with profit.

The Monuments of Christian Rome, from Constantine to the Renaissance. By ARTHUR L. FROTHINGHAM. Pp. 384. (New York: The Macmillan Company. 1909. 10s. 6d.)

ANOTHER valuable addition has recently been made to the series of Handbooks of Archæology and Antiquities, edited by Professors Percy Gardner and Francis Kelsey. Professor Frothingham has chosen for his theme a subject which presents such difficulties that hitherto it has almost been neglected; a subject so complex, illogical, and inconsecutive as to reduce the student well-nigh to despair. While so much is known about Rome political and ecclesiastical during the ten centuries that elapsed between the reign of Constantine and the dawn of the Renaissance, almost nothing has been written of her *rôle* during this period in art history.

This Handbook, therefore, covers new ground. It does not give a summary of recognised facts, but offers suggestions and theories which to some may seem open to discussion, though seventeen years of special study in Rome have led the author to his own definite conclusions. Nearly half the volume is devoted to a historical sketch of Rome, written with peculiar conciseness and lucidity. This is followed by a classification of monuments under the heads of Basilicas, Civil and Miltary Architecture, and the various decorative arts. A chapter of peculiar interest is that on Painting, the term including mosaics and frescoes. No writer on the history of art can be said to have successfully dealt with this period. Indeed, it is only the wealth of unclassified discoveries made within the last six years or so which has now rendered it possible to establish any sequence in the history of fresco painting. The amount of detailed description and the profuse illustration of the book (no single important type in any of the arts having been omitted) make it of special value as a class-room book, while the able way it is indexed and headlined greatly facilitates reference to any point under discussion.

The Churches of Coventry. By FREDERIC W. WOODHOUSE. (London: George Bell & Sons. 1909.)

WHEN perfect the three towers of the priory and cathedral church and the neighbouring spires of St. Michael's and Holy Trinity must have formed one of the finest architectural groups in the country. The cathedral church is now little more than a memory, its site has been partly built over, and only a small portion—the inner face of the west front—is visible. The churches have also suffered severely as regards the destruction of their internal fittings, and the fabrics themselves have been much restored. There are some interesting monuments, and a few stalls with elaborately-carved ends and misereres, still preserved at St. Michael's in the north aisle of the chancel, known as the Draper's or Lady Chapel, and at Holy Trinity a stone pulpit and a fine brass lectern. St. Michael's will, however, always be best known and remembered for the beauty and height of its western tower and spire, and for the great area covered by the church to which it is attached. Holy Trinity and St. John's are both cruciform churches, the former with a spire, and both with impressive interiors. The spire of Christchurch, once part of the Greyfriars church, forms the third of the "three spires" of Coventry; the present church is modern. This, St. Mary's Hall, and the remains of the Whitefriars monastery are all described in the book, and with the exception of the last-named are illustrated from photographs and from drawings by the author. Ground plans also are given of the three principal churches and St. Mary's Hall.

A History of Northumberland. Volume IX. By H. H. E. CRASTER, M.A. (London: Simpkin, Marshall, & Co. 1909.)

THE committee appointed to preside over the production of an adequate history of Northumberland has now issued the ninth quarto of the great undertaking. The contents relate to the thirteen townships in the chapelries of Earsdon and Horton, a district once belonging to various border families and monastic establishments, subject only to such disturbances as inroads from the Scots and visitations of the Black Death, but now a scene of commercial activity. We learn how Blythe, the site of the cottages of a dozen fishermen who carefully wrought a little coal out of the sea-banks in 1626, has grown into a busy port from which four millions of tons of coal are annually shipped. We read of salt pans, glass works, iron works, shipbuilding, and collieries that have changed the aspect of the locality from the quiet strength of the old fortified residences with peaceful villages in their neighbourhood into scenes of incessant enterprise and industry. Below this busy surface are the old traditions; and though there are but few antiquities to be still seen (Seaton Delaval Chapel with its two Norman arches and two effigies being the most considerable), there are a great many documents extant of which good use has been made. Only the moat remains of Horton Castle. All that is left of the Pele Tower at Seghill is the lower stage, which does duty for a cellar in the inn; Burroden Tower is in ruins, though the walls are as high in places as the corbelled-out parapet; Holywell Hall has the motto, Mediocria firma, 1654, over the doorway. There are numerous contributors of special information, such as Mr. J. C. Hodgson, who, with other heraldic scholars, gives many pedigrees and coats-of-arms; Professor Haverfield, who gives an account of the great "Backworth find" of jewellery and Roman coins; Mr. T. E. Forster, who tells of the iron and coal industries; Mr. W. H. Knowles, who has made some of the drawings, as have Mr. R. J. S. Bertram and Mr. W. H. Charlton; and, among others, Mr. Moberly Phillips, who tells the story of the Nonconformist chapels in the vicinity. Lady Morton, Mrs. F. E. Allhusen, and Miss B. M. Craster have contributed the excellent index.

The Organ and its Position in Musical Art. By H. HEATHCOTE STATHAM. Pp. 245. (Chapman & Hall. 7s. 6d.)

THIS is primarily a musical book, and as such of course would not be noticed in our columns; but the chapters on "The Organ in the Church" and "The Architectural Treatment of the Organ" contain information on matters connected with the planning and arranging of organs in churches and in concert-rooms which very few architects know anything about, and which they would do well to note. A great many concert-room orchestras and organs are completely wrong in planning and in section through want of proper information in regard to these subjects. In the chapter on "The Organ in the Church" practical reasons are given to show the mistake made by the section of clergymen and architects who are calling out for a reduction in the size of church organs, without knowing or considering all the circumstances bearing on the use of the organ in church.

An illustration of the organ-case at St. George's Hall, Liverpool, designed by Cockerell, is given as a frontispiece.

Valuation of Real Property: A Guide to the Principles of the Valuation of Land and Buildings, etc., for Various Purposes. By CLARENCE A. WEBB. Pp. 294. (London: Crosby Lockwood & Son. 1909.)

THE author in his preface states that the primary object of this treatise is to give students and candidates in the examinations of the Surveyors' Institution, the Auctioneers' Institute, etc., a general knowledge of the principles and practice of valuation of real property for the various purposes for which it is required, although he trusts it may be of service to those engaged in actual practice. The Budget and the Finance Bill were introduced when this volume was in the press, but the author, in a supplementary chapter, has set out those provisions of the Bill which relate to real property. In his prefatory observations to this chapter the author urges on surveyors the importance of understanding the provisions of this Bill (no mean task) seeing that "the duties are liable to be increased in the future, and that the principles may before very many years be extended to local rating."

The text appears to be clear and concise and the subject matter well arranged, and very recent cases in the Law Courts are cited. In connexion with these cases, however, a reference to the reports in which they are to be found would, in our opinion, add to the usefulness of the work. In some instances a date has been given, but this has not been consistently carried out; the possibility of reference to cases cited in a text book much enhances the value of that book to the regular practitioner, and we make this suggestion as possibly the author may consider it in a future edition.

The Lead and Zinc Pigments. By CLIFFORD DYER HOLLEY, M.S., Ph.D. Pp. 340. (New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1909. 12s. 6d.)

THIS is an American book, and is mainly devoted to a description of the methods of manufacture of lead and zinc pigments employed in the United States. Even in America most of the white lead produced continues to be made by the old Dutch process, but Dr. Holley is of opinion that within a few years this process will have been largely superseded by certain modern processes which are already being profitably worked on a large scale. These processes are the "Carter" process, the "Matheson" process, and the "Mild" process. Numerous photographic illustrations are given of the plant used in making white lead by each of these processes, and also of that used in the Dutch process.

Comparing the English white lead in oil sold on the markets with that of American manufacture, Dr. Holley says that the English white lead is much stiffer than the American product, and he ascribes this to the difference in the methods of grinding adopted in the two countries. Dr. Holley further remarks that the different English brands of white lead which he has examined show "evidence of most careful corrosion, resulting in great purity of colour, almost

Digitized by Google

theoretical chemical composition, and freedom from crystalline or sandy lead." In view of the fact that Dr. Holley is chief chemist in an American white lead factory this is a very generous tribute to English manufacturers.

The fact that in the United States the question of lead poisoning among the operatives has passed practically unnoticed, and that no Government restrictions have been placed upon the white lead industry as in England and France is due, says Dr. Holley, to the superiority of American methods and workmen and to the absence of female labour in the American industry. The effect of lead poisoning is more serious with women than with men. With regard to zinc oxide the author points out that most of the zinc oxide produced is used in the manufacture of mixed paints and for mixing with white lead. The proportions in which the zinc oxide and white lead are mixed should vary with the climate and locality in which the paint is to be exposed. Along the sea coast a paint with a large proportion of white lead has not proved satisfactory, and lighthouse specifications call for 75 per cent. of zinc oxide and 25 per cent. of white lead. For inland use the pigments may be mixed in equal proportions, and for indoor work 75 to 80 per cent. of zinc oxide may be used with advantage.

The book should be read by all who manufacture or use lead or zinc pigments. Dr. Holley writes with the strength of one who has an intimate acquaintance with the industries under review, and is often able to convey useful information deduced from the results of his own work.

Oxide of Zinc: Its Nature, Properties, and Uses. By J. CRUICKSHANK SMITH, B.Sc., F.C.S. Pp. 108. (London: The Trade Papers Publishing Co., Ltd. 1909.)

THE author of this little book shows how some of the troubles which have attended the use of zinc oxide as a pigment in the past may be avoided. The chief objections to pure zinc oxide paints are their low degree of opacity and their slow rate of drying, but in a chapter of the book which has been contributed by Dr. A. P. Laurie it is stated that when treated in a specified manner a pure zinc oxide paint will dry as quickly and yield as opaque a surface as the best white lead paint. As a drier in zinc paint manganese resinate, in quantity not exceeding 0·5 per cent. of the total weight of the paint, is recommended by Dr. Laurie. Or manganese borate, in quantity not exceeding 1 per cent., may be used. Lead driers are not admissible because they might cause the paint to become discoloured when exposed to the sulphuretted hyrdogen present in town air. Zinc oxide is an excellent pigment for enamel paints, but for some purposes it is not so good as white lead. In view, however, of its innocuousness to operatives, its increasing use as a substitute for white lead must be viewed with satisfaction. But zinc oxide is chiefly valuable for mixing with white lead and as a white pigment for admixture with coloured pigments. The author does not describe the details of zinc oxide manufacture, but discusses at some length the methods of preparing and using zinc oxide paints.

The Householder's Duty Respecting Repairs. By M. F. CAHILL, Solicitor. Pp. 255. (London: Effingham Wilson. 1909. 3s. 6d.)

THE author in his preface to this little volume states that nearly three years have been occupied in its preparation, and it appears to us that the time he has spared from the exercise of his profession in the production of this work has been well spent, as he has produced a very clear treatise, dealing with a branch of the law which although it touches a very large class, is extremely complicated and hard to be rightly understood. The form of the work is excellent, the various propositions being supported by cases quoted in the text, of which the author states nearly three thousand have been referred to, and the only point we find reason to regret is that he has not furnished a table of cases, as this would have enhanced the value of the book and facilitated reference. We, however, prophecy that a second edition will soon be called for, and we trust the author may then see fit to act on this suggestion. The scope of the work may be illustrated by quoting the headings from some of the chapters, as it is not only confined to the strict relationship of Landlord and Tenant, thus the Liability to Passers-by, to Customers and Guests, to Servants, to Neighbours, and to Local Authorities are specifically dealt with.

The author, besides producing a law book in the strict sense of the term, has incorporated therewith some very practical suggestions which should enable laymen to perceive some of the many pitfalls of the law which occur in such profusion in connexion with the relationship of landlord and tenant, and the text is well expressed and succinct. Of course, in Chapter I., where the author states that in the absence of agreement there is no obligation whatever on the landlord as to the state of repair or condition of the premises, he is speaking of unfurnished houses; this is the only point we have discovered where the text might be misunderstood by a layman. We have nothing but commendation to express on this little volume, which is offered at a most moderate price.

MAGAZINES AND REVIEWS.

THE *Burlington Magazine* contains an article by Mr. Solon on "The Ceramic Art of Orvieto during the XIIIth and XIVth Centuries," and one by Mr. A. J. Butler on "The Origin of Lustre Ware"; both of them subjects of interest to some of our readers. The number contains an editorial article on the position of art generally, in which we are gravely informed that "the patronage which was once the monopoly of the Royal Academy has been transferred to such bodies as the New English Art Club and the International Society." So much the sadder for the patrons. A good deal of commonplace comes out of the Academy, no doubt; but it has at all events never sunk so low as to exhibit such things as can be found in the other two exhibitions mentioned.

The *Art Journal* is rather an architectural number. It contains an article on "London" by Mr. Yockney—London considered in its picturesque aspect, and illustrated by excellent drawings and etchings by various artists. The frontispiece is a fine etching of the "Porte des Pélicans" at Dinan, by Miss Hester Frood. The interesting subject of "Coffers and Caskets" is treated by Mr. Luther Hooper, in an article continued from last issue.

The *Architectural Record* (New York) contains an illustrated article on "The Architecture of American Colleges," of which the old buildings, "in good old colony days," are far the best; it is surprising how coarse Richardson's Austin Hall (Harvard) looks in comparison with them. A short article on "A French Theatre in Ferro-Concrete," at Agen, is of some practical interest. In the small view given of the exterior the architecture of the ferro-concrete theatre (which includes an order of columns) looks pretty well; how it would bear close inspection in reality is another question.

Neither the *Rundschau* nor the *Berliner-Architekturwelt* contains anything of special interest this month.

The *Antiquary* gives an interesting article by Mr. Moray Williams on "The Romano-British Buildings at Stroud." He suggests that the plans of houses found here, small and simple and more like farmhouses than villas, may represent what he calls "the Romanisation of the native Celt." More light is expected to be thrown on this subject by the continuance of the excavations.

The *Illuminating Engineer* contains an illustrated historical article on the lighting of the Houses of Parliament and the Palace of Westminster, by "an engineering correspondent." Reference is made to the strong opposition which was aroused when it was suggested that gas should be used as an illuminant in place of wax candles, and it is stated that owing to the defective condition of the gas-fittings which were at first used much of the gas escaped from the pipes and burners and contaminated the air of the House. Mention is also made of the ventilating arrangements introduced by Christopher Wren and others into the old Houses of Parliament.

In *Scribner* Mr. Birge Harrison (who, we gather, is an art teacher) writes a short but thoughtful article on "The True Impressionism in Art," in which he gives the reason for the uselessness of photography for the painter of men, animals, and objects (such as waves) in motion, in a new way. The painter, to produce a truthful effect, can only paint what the eye sees, and as his own eye sees it. The photograph reveals points in action which the eye cannot see and did not suspect, but for that very reason they are useless to the painter, who has to paint nature as he sees it. As an example of optical illusion as to facts the author gives an interesting diagram representing two straight lines of equal length, each with two shorter lines attached to it at each end at an angle of 45°, but the angle being taken in the reverse direction in the two instances. As he says, nothing will convince the human eye that the two central lines are of the same length. It is a good lesson in appearances. "The Field of Art" is occupied by a description of the Museo Barracco at Rome, a museum of antique sculpture collected by Baron Barracco, and about three years ago presented, with the building which contains it, to the City of Rome. Visitors to Rome may be glad to have their attention called to it.

The *Century* contains No. X. of the articles on "Romantic Germany," in this case a journey "From the Harz to Hildesheim," pointing out to the reader who may follow in the same track some places of interest that might otherwise be missed, and going into picturesque description and illustration of Romanesque Hildesheim.

MESSRS. BELL'S BOOKS.

A Full Illustrated Catalogue of Architectural Books will be sent to any Address on application.

Imperial 8vo. **15s.** net.

MODERN HOMES.

Selected examples of Dwelling Houses.

Described and Illustrated by

T. RAFFLES DAVISON, Hon. A.R.I.B.A.

With a Foreword by SIR ASTON WEBB, R.A., and over 300 Illustrations, chiefly from Pen Drawings by the Author.

"A very good selection, including some of the best work by Norman Shaw, Ernest George, Sir Aston Webb, Basil Champneys, T. E. Colcutt, and others. The book is just the volume to put into the hands of a possible client, and will help young architects to realise that houses may be designed with individual artistic character, whatever their size and cost."—*Building News.*

UNIFORM WITH BELL'S CATHEDRAL SERIES.

Profusely Illustrated. Crown 8vo. **1s. 6d.** net.

THE CHURCHES OF COVENTRY.

By FREDERICK W. WOODHOUSE.

"Messrs. Bell have done wisely in adding to the excellent series of handbooks on the cathedrals and abbeys of England one devoted to the churches of this manufacturing town. Mr. Woodhouse has the qualification for his task of a lifelong acquaintance with the city and its buildings. . . . Handy in size and well got up, and will be indispensable to every citizen of or visitor to Coventry."—*Building News.*

Write for full List of the Series.

London: GEORGE BELL & SONS, York House, Portugal St., W.C.

Digitized by Google

London: Printed for the Proprietors of "THE BUILDER" by HORACE COX at Windsor House Printing Works, Bream's-buildings, E.C., and Published by JOHN MORGAN at the Office of "THE BUILDER," No. 4, Catherine-street, Strand, W.C.—October 16, 1909.

THE BUILDER

VOL. XCVII.—No. 3481. OCTOBER 23, 1909.

Contents.

PAGE

THE CHURCH OF THE SACRÉ-CŒUR, PARIS 427
THE BUILDING TRADE AND CHANGES IN RATES OF WAGES 428
WORKMEN'S COMPENSATION STATISTICS 428
NOTES 429
THE RENAISSANCE OF ARCHITECTURE IN ITALY .. 430
THE BRITISH SCHOOL AT ATHENS 431
ART-NOTES FROM PARIS 432
THE SOCIETY OF ARCHITECTS 432
THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS 433
THE ENGINEERING MODEL EXHIBITION 434
PICTURE EXHIBITIONS 435
NON-PROVISION OF QUANTITIES BY BUILDING OWNERS 435
THE LONDON COUNTY COUNCIL 436
APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1908 436
ARCHÆOLOGICAL SOCIETIES 437
BUILDER COMPETITION FOR NEW FAÇADE TO No. 9, CONDUIT-STREET 437
MEETINGS 438
FIFTY YEARS AGO 438

ILLUSTRATIONS:—
A DESIGN FOR THE GLAMORGAN COUNTY HALL.. 438
STEPNEY AND BOW FOUNDATION, COOPERS' COMPANY'S SCHOOL 438
HOUSE AT IVER, BUCKS 438
DESIGN FOR PRESENTATION TROWEL AND BAG.. 438

ARCHITECTURAL SOCIETIES 438
LEGAL COLUMN 439
COMPETITION NEWS 439
TRADE CATALOGUES 440
BOOKS RECEIVED 440

CORRESPONDENCE:—
SOCIETY OF ENGINEERS 440

SEWAGE DISPOSAL 440
LONDON AND DISTRICT BOROUGH COUNCILS 441
MASTER BUILDERS' ASSOCIATIONS, ETC. 441
PROJECTED NEW BUILDINGS IN THE PROVINCES .. 441
WESTMINSTER CITY COUNCIL 442
LONDON COUNTY COUNCIL EDUCATION COMMITTEE 442
GENERAL BUILDING NEWS 442
SANITARY AND ENGINEERING NEWS 444
STAINED GLASS AND DECORATION 444
MISCELLANEOUS 445
CAPITAL AND LABOUR 446

LAW REPORTS:—
ARCHITECTS AND BUILDERS SUED FOR ALLEGED NEGLIGENCE 446

PATENTS 447
SOME RECENT SALES 447
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN .. 448
PRICES CURRENT 450
TENDERS 451

Illustrations.

COMPETITION DESIGN FOR GLAMORGAN COUNTY HALL. DETAIL OF PRINCIPAL ENTRANCE. BY MESSRS. WARWICK & HALL.

THE COOPERS' COMPANY'S SCHOOLS, BOW. MESSRS. T. PHILLIPS FIGGIS & A. E MUNBY, JOINT ARCHITECTS.

HOUSE AT IVER, BUCKS. PROFESSOR SIMPSON, F.R.I.B.A., ARCHITECT.

DESIGN FOR PRESENTATION TROWEL AND BAG (GOLD MEDAL, NATIONAL ART COMPETITION, 1909). BY MR. SILAS PAUL.

The Church of the Sacré-Cœur, Paris.

THE Church of the Sacré-Cœur, whose lemon-shaped white domes have for some years past dominated the grassy heights of Montmartre, is practically complete as to its exterior with the exception of its campanile—at present about half finished. But this campanile will revolutionise the appearance of the whole group. As our readers will remember, what would be in an English cathedral the "west front," but which in this case faces south, has no striking feature; the crossing is crowned by the principal dome on a very high drum, and the four re-entering angles between the arms of the cross are filled in with smaller domes, making a picturesque if somewhat crowded pyramidal group. Now, directly behind the northern apse (our "east end") will rise the campanile, with a height sufficient to be seen well above the central dome and roofed with a cupola of somewhat similar outline. It is difficult to judge of the effect, but to us it appears as if a double central point of interest will be set up, and we cannot help preferring Mr. Bentley's position at Westminster, following the Italian tradition. M. Abadie's original design for this campanile has been considerably altered and materially improved.

The interior of the church is complete as regards its structure. It is lined throughout with the same stone as the exterior, a sort of coarse oolite somewhat like the roach bed of our Portland stone, and set in large even blocks with black mortar. The whole interior at present is cold and bare; the stone inside does not bleach to the same beautiful grey and white colour that it does outside, but remains the colour of cement, an effect which is enhanced by the extreme regularity of the masonry—a striking contrast to the warm and rather rough texture of the brickwork inside the Westminster Cathedral. The Sacré-Cœur calls loudly for colour. The banded treatment of the interior masonry which was shown on the original drawings, resembling the interior of Pisa Cathedral, has not been carried out, unless it be intended to paint the whole surface of the stonework. There is little sculpture or moulded work, the capitals and archivolts being flat and plain; the exception to this treatment occurs in the four angels in high relief carved on the pendentives. The semi-dome of the main apse is to be covered with a mosaic or fresco of the Crucifixion, and the barrel vaults over the main arms of the church will also be decorated in the same way, which should help to take off from the coldness of the present appearance. It must be borne in mind that this is not a Byzantine interior with an unbroken surface for mosaics flowing over vault and pier and capital; here the main constructional features are all in dressed stone, with the mosaic decoration filling up the plain spandrils of wall surface and vault bounded by these constructional lines. Of course, it is possible that the moulded stonework may be picked out with colour and gilding, as has been done in the choir of St. Paul's, and the large use of broad flat fascias will lend itself to this treatment in a way that the orthodox Renaissance mouldings of Wren by no means do.

At present the only coloured decoration is the stained glass, and the most definite piece of effect is in the ring of windows in the drum of the dome, which are the chief source of light to the interior. These windows are filled with a plain diaper pattern of rich yellow glass within a bluish border, throwing a golden glow over the part of the church on which the light falls. This type of lighting has been borrowed from Napoleon's tomb, where, it will be remembered, the whole body of the church is suffused with a cold bluish light with the exception of the altar, which is lit by a brilliant orange colour from two side windows—the contrast is so striking as to be theatrical. In the Sacré-Cœur this definite scheme of lighting by means of a general prevailing colour effect is not carried out in the rest of the church, the other windows being filled with two absolutely opposed types of stained glass arranged apparently at haphazard. In one type of window the design is on a very small scale, filled with repeating medallions resembling the geometrical windows of the Ste. Chapelle, only with a more dominant blue tone. The other type is a large-scale naturalistic treatment with a landscape background and the glass used in large pieces. Some of these windows are rather fine in colour, others are crude and garish. On the whole we think that the larger scale is more suitable to the character of the interior, but a more decorative and less naturalistic treatment should have been adopted; anyhow, in a complete and regular church of this nature it seems a pity to mix the decorations in this uncontrolled way.

All the furniture in the main body of the church is temporary, with the exception of the high altar. The rails round the seated portion of the nave, the pulpit, and main lamp standards are all in pitch-pine, while the altar rails are in wood painted white. The high altar is in white marble of very simple design, with a small gilt baldachino over the central Crucifix, illuminated by hidden lights. The large baldachino covering the entire altar shown in the original design has not been adhered to. So far the usual restraint found in most of the

Digitized by Google

large French churches as to ornaments, etc., round the high altar has not been departed from.

The general plan of the church is nearly square, the four subsidiary domes almost filling in the outside square between the arms of the cross. In the interior these arms are vaulted with barrels, and the smaller domes treated as Byzantine domes without any ring of lights round their bases; the lighting of these four square bays is effected by means of circular windows under the arches carrying the pendentives. The main dome alone shows its drum and ring of lights inside, so that it is even more emphatic inside than out. In spite of its vast size and this simple and lucid arrangement, which is almost identical with a plan in one of Leonardo da Vinci's notebooks, the interior of the Sacré-Cœur is at present hardly impressive—the hardness of the detailing, the regularity of the masonry, the sad colour of the stone all combine to produce a chilling effect which is not removed by the doubtful quality of the modern glass and the pitch-pine fittings. Exactly the contrary impression is produced in the Westminster Cathedral—here one naturally mistrusts what will be the result of the mosaic and decorations—the interior is satisfying as it stands; but the Sacré-Cœur, in spite of its dressed stonework, imperatively demands the richest decoration throughout; its present appearance could hardly satisfy the most frigid taste.

THE BUILDING TRADE AND CHANGES IN RATES OF WAGES.

IN the Board of Trade Report on Changes in Rates of Wages and Hours of Labour which has just been issued, it is important to remember that the figures relate to the rates of wages of those in employment, and do not necessarily indicate average "earnings" in any trade as representing the extent of employment. The two questions are distinct; a fact often lost sight of by those who quote these statistical figures.

Apart from railway servants, agricultural labourers, and seamen, 464,000 workpeople sustained decreases which represented a sum of 66,400*l.* per week; 119,000 received advances amounting to 7,200*l.* per week, but of these 57,000 were workpeople employed by Government departments and public authorities. The net result of all these changes was therefore a decrease of 59,200*l.* per week. Calculated from the time each change was effected to the end of the year, the aggregate decrease due to these changes is 873,800*l.* as compared with an increase of 5,821,000*l.* in 1907 and an increase of 1,419,000*l.* in 1906. Nor are the prospects of the current year encouraging, for during the first six months, whilst the advances in wages are only 263*l.* per week, the decreases are 68,007*l.*, the net result being a decrease of 67,744*l.* compared with 16,110*l.* for the same period in 1908.

How has the building trade fared? In 1908 the net result of all changes was an increase of 226*l.* per week, and in regarding this figure attention must be directed again to our prefatory remarks that changes in rates of wages do not indicate the prosperity or dulness in a trade, but only show the wages received by those in employ. Thus the above figures are followed in the Report by the following observations: "Employment in the building trades was bad during 1908, and, judged by the mean percentage of trade unionists unemployed in those trades for which statistics are available (carpenters and plumbers), it was considerably worse than in previous years. The mean percentage was 11·5 in 1908 as compared with 7·3 in 1907. The mean for the ten years 1899–1908 was 5·9 per cent." For the first six months of the current year the changes show a net decrease of 106*l.* per week.

The changes in hours of labour affected 26,500 workpeople—23,000 had their hours reduced, of whom 9,400 were engaged in the building trade. The net result of these changes in the building trade was a reduction of 8,290 hours per week.

The changes in rates of wages in the building trade were affected as regards 11,496 individuals without strike, and as regards 705 individuals after strike. Conciliation or mediation settled the change in the case of 5,075 persons, arbitration in that of 4,182 persons, the total number of workpeople affected being 12,201.

WORKMEN'S COMPENSATION STATISTICS.

THE volume containing statistics of workmen's compensation now issued stands by itself, for it shows the working of the Act for one complete year since the principle of compensation was extended, and since provision was made for compulsory returns where the Secretary of State should direct. An order for such returns was made January 15, 1908, in respect of mines, quarries, railways, factories, harbours, docks, etc., constructional work and shipping, but in the case of such industries as building, agriculture, inland transport, and domestic service the statistics have had to be prepared, as heretofore, from such information as was available.

In the seven groups of industries made subject to returns, in which the number of persons employed is estimated at about seven and a half millions, the gross total of compensation paid amounted to 2,080,672*l.*; but even this sum does not represent the total charge on these industries, since sums paid under contracting-out schemes, sums payable under the former Acts or under the Employers' Liability Act, sums paid under the Merchant Shipping Act, and costs, are not included in it. This total leaves also out of consideration the sums paid in compensation to persons employed in industries not subject to returns. No exact estimate can be arrived at of the sums paid in these latter industries, but the figures relating to sums awarded in arbitrations give some idea that they must be considerable, especially when it is remembered that a very small proportion of cases come before the courts. In the case of those industries compelled to make returns the fatal cases dealt with by the courts represented only about 22 per cent., and the disablement cases 36 per cent. of the number of cases dealt with in the returns. It is a pity that no exact idea can be furnished of the sums payable in compensation to all classes, for it must be borne in mind that compensation forms a direct charge on employers and industry.

Some of the particulars furnished as to the industries which made returns may be briefly referred to. For instance, the number of persons employed in mines was in round numbers 1,047,862; there were 1,301 fatal cases, the compensation totalling 226,226*l.*, an average of 147*l.* a case; 137,622 non-fatal cases, with 601,848*l.* paid in compensation; 139 cases of industrial disease, with compensation 13,382*l.*, making a total of 841,456*l.* For factories the total amount of compensation was 802,044*l.*, the number of persons covered by the returns being five and a half millions. these latter figures being in excess of the returns under the Factory Act for reasons explained in the Report.

"Constructional work" does not include buildings, except when forming part of an engineering work. The returns include the construction of railways, canals, harbours, docks, bridges, tunnels, sewers, roads, waterworks, and undertakings that were formerly within the Acts as "engineering works." The returns are not so certain as regards these classes of undertakings, but they comprised 127,106 employees, and the compensation totalled 51,928*l.*

The building trade is not subject to returns, and therefore only slight information can be gathered from the Report in connexion with this trade; and the Report, when dealing with trades where notification is not compulsory, does not appear to us quite so clear as it could be made. It appears that 543 cases were taken into court affecting the building trade under the Act of 1906. The results in those disposed of in court are not given, but the cases which were settled involved lump sums amounting to 9,223*l.* and weekly payments of 88*l.* Besides these cases, memoranda were filed in some 1,743 cases, and lump sums were payable representing 35,478*l.* and weekly payments of 253*l.*

In addition, sixty-five cases were brought under the Employers' Liability Act, in which 770*l.* were awarded as damages. The Workmen's Compensation Act is displacing the Employers Liability Act, as might be anticipated. For the whole of England only 260 cases were taken into court under the latter Act, but of those 143 related to factories and sixty-five to the building trade. Many of these cases were settled, and in those relating to the building trade only twenty-five were disposed of in court.

PROPOSED PAVILION, LLANDRINDOD WELLS.—The Llandrindod Wells Urban District Council have approved plans for a pavilion which they propose to erect. The plans provide for a building 120 ft. long by 70 ft. wide, and 30 ft. high, surmounted by a terra-cotta balustrade, to be constructed of ferro-concrete, with a flat roof of the same material, covered with ruberoid, and surrounded by a verandah 10 ft. wide, to be constructed of steel and cast iron. The estimated cost is 5,500*l.*, being made up as follows:—4,500*l.* for the erection, including lighting and heating; 550*l.* for furnishings; and 450*l.* for fees and other expenses. Messrs. R. Wellings Thomas and W. A. Millward are the authors of the plans.

NOTES.

The Building Trade and the Finance Bill.

THE builders of another London district, describing themselves as of "West London," have entered a protest against the proposals contained in the Finance Bill to tax land, much on the lines of the protests made by builders in South London and North London, to which we referred in our issues of October 2 and September 25. The memorial contains over fifty signatures, and the signatories refer to the unprecedented increase in unemployment, and state that they have suspended all purchases of land until they can feel assured that freedom of contract will be respected.

St. Paul's Bridge.

IN July last the report made in favour of the proposed new bridge across the Thames was referred back to the Bridge House Estates Committee by the City Corporation, the idea being that the relief to traffic afforded by the widening of Blackfriars Bridge might render unnecessary the suggested addition to cross-river communications. The committee, however, still consider the new bridge to be required, a view which we also entertain. The report will again be brought before the Corporation with a slight alteration in the line of the southern approach. It is now recommended that the starting point shall be at the junction of Marshalsea-road and Southwark Bridge-road, the approach passing along and absorbing Guildford-street, crossing Sumner-street, and then proceeding to Bankside, where the bridge proper will commence. We regret to see that the improvement in the line of the northern approach mentioned in our "Note" of September 25 has not been adopted. Although the termination of the approach opposite the dome of St. Paul's would interfere with the ultimate creation of a main north and south thoroughfare, the objection could easily be got over by a bifurcation just beyond Knight-rider-street—one arm leading direct to Aldersgate-street and the other providing for westward traffic through St. Paul's-churchyard.

The Whitgift Hospital, Croydon.

AT a recent meeting of the local Ratepayers' Association at Croydon, reported in the *Croydon Guardian*, the subject of Whitgift Hospital came up in connexion with the consideration of the "North-end Improvements," and Councillor Ambler, in a most sensible speech, we are glad to see stood up manfully for the preservation of the Hospital. He said the whole history of the scheme was the desire to have a double line of tramway through North-end, which would cost 300,000*l.*, and he was convinced would not add 1 per cent. to the receipts of the tramways, for reasons which he gave in regard to the normal working of the traffic. It was no doubt necessary to adduce this argument in order to appeal to the merely commercial mind, but Councillor Ambler went on to defend the building on its own merits, and pointed out that the very fact that all England was taking an interest in the building ought to convince them that there was something worth saving. The reference to the desire for a double line of tramways at that point explains the attitude of the vandals of Croydon towards the Hospital; the old building narrows the street somewhat, and would not leave room for a double tramway line; but our observation on the spot convinced us that for the ordinary requirements of the traffic there is ample space. The proposal to destroy what is probably the only old building in Croydon of real interest, in order to get two tram-lines past it, is something really too silly for words.

Shoolbred v. Wyles.

IN this case, which is fully reported in another column, the architects were sued by their client for alleged negligence which had resulted in dry-rot setting up in the floors of a new house. Mr. Justice Grantham, in his summing up, implied that no negligence had been proved against the defendants; nevertheless, the jury gave the plaintiff a verdict of 165*l.* damages, while at the same time finding that the architects were only negligent "in a minor degree." Taking the evidence as reported, the verdict seems rather illogical, and we do not think the architects have been quite fairly treated. They say that they knew nothing whatever of the pugging which was put in between the joists; it may be said that they ought to have known; but when the client (as the evidence states) frequently gave his own orders to the builder or the workmen, and seems to have done so in this instance of the pugging, the architect is placed in a difficult and unfair position. The moral of the case is that an architect should insist on the client not giving orders without his knowledge, and that it is not safe to pug a floor with mortar which is wet in the first instance, and subsequently to lay linoleum over the boards, thereby stopping up the last remains of ventilation. But the further question which is suggested by the case is—why use mortar at all for pugging, when slag wool offers an equally efficient and perfectly safe method of deadening sound?

Dover Harbour.

THE ceremony performed last week by the Prince of Wales marks the completion of a great engineering work which, by enclosing the whole of Dover Bay has virtually extinguished the claim of the town to rank as a seaside resort. A good deal of work still remains to be done before the national harbour will provide all the accommodation necessary for its utilisation as a naval base, one very important point being the improvement of the entrance so as to obviate disconcerting mishaps such as those which have temporarily checked the career of Dover as a port of call for Transatlantic liners. The inner area known officially as the commercial harbour with the low-water area of 80 acres remains under the jurisdiction of the port authorities, by whom a reclamation scheme is now in progress from the designs of Mr. A. T. Walmisley, the harbour engineer. The site reclaimed with the area of nearly 12 acres will take the ultimate form of an addition to the inner side of the Admiralty pier, providing space for the construction of a new marine station enabling travellers to and from the Continent to embark and disembark in comfort whatever may be the condition of the weather.

The American Report on Reinforced Concrete.

IN the *Proceedings* of the American Society of Civil Engineers the opinions of five members on the report of the Special Committee on Concrete and Reinforced Concrete are printed as part of the discussion now in progress. Captain Sewall, U.S. Corps of Engineers states that after careful study he is compelled to agree with the minority in practically every criticism offered, and that he strongly concurs in the recommendation that the report be referred back to the committee for revision. Mr. Clarence W. Noble, another well-known engineer, rather avoids discussing the report and devotes most of his remarks to the statement of personal experience. Mr. S. Bent Russell expresses the conclusion that some of the objections in the minority report are not without good foundation. Mr. J. R. Worcester believes the criticisms of the minority can be fully answered, and Mr. W. J. Douglas is of opinion that the report of the majority should be adopted with certain corrections and additions. From these comments it will be seen that, as we anticipated in our recent article, the majority report is not likely to be regarded as an entirely satisfactory document by American engineers. As an interim report for discussion and amendment it is well enough, and will doubtless serve a useful purpose by eliciting many useful hints from members of the societies to whom it has been submitted.

Nickel Steel for Bridges.

MR. J. A. L. WADDELL, in the *Proceedings* of the same Society, for 1908, records experiments, investigations, and his deductions therefrom as to the relative value of nickel steel and carbon steel for bridges. In this study, which occupied a period of three years, the first step was to find the percentage of nickel which would give the best all-round results. This percentage is limited by the fact that, if high, the material becomes too refractory for shop-working. The best percentage was ascertained to be 3·5. The allowance of other ingredients—impurities—in the nickel steel was put as:—Silicon, 0·04 per cent.; phosphorus, 0·03 per cent.; sulphur, 0·04 per cent.; whilst that of manganese was put at 0·75 to 0·85 per cent. Eleven tests of low nickel steel gave an average of 61,300 lb. (27½ tons) for the elastic limit, and 99,300 lb. (44½ tons) for the ultimate strength, each per square inch of cross-section. For high nickel steel these figures respectively were 71,600 lb. (32 tons) and 114,000 lb. (51 tons). Impact tests showed that the resistance of nickel steel was less than that of carbon steel, the relative values being as follows:—Carbon steel, 100; low nickel steel, 87; high nickel steel, 73. Other tests, such as hammering flat and drifting, close punching, shop-tooling, and corrosion, were also made. Mr. Waddell expresses the opinion that at present prices it would be more economical to use nickel

Digitized by Google

steel for all kinds of railway bridges, and the larger the bridge the greater the economy. It would also be possible to construct bridges of greater span with nickel steel. Taking the usual limit of span for carbon steel bridges, namely, 2,000 ft., he estimates that for nickel steel the limiting value could be increased to 2,600 ft.

Church of the Holy Sepulchre, Northampton.

A FUND is opened for completing the reparation of this church whose foundation with that of St. Peter's Church and the St. Andrew's Priory is commonly ascribed to Simon de St. Liz, Earl of Huntingdon and Northampton, a Crusader, who built the castle and the town walls of Northampton in the closing years of the XIth century. The Round retains a considerable portion of its exterior wall with traces of Norman windows; within it has a middle clear space measuring about 30 ft. across; the aisle which, it seems, had formerly a barrel vault is 11 ft. wide; the eight columns, about 14 ft. high and nearly 4 ft. in diameter, carry sharply pointed arches and walls of XVth-century date; a high arch, opening into the tower, replaces the original west door. The embattled tower has large angle-buttresses and is surmounted with an elegant octagonal spire pierced with spire-lights, as are the XIVth-century broach-spires of Ringstead and Wollaston, Northants. The chancel gave place to the rectangular nave, the north aisle and eastern bay of which have been rebuilt, and a chancel with aisles and organ-chamber have been added by Sir G. G. Scott, who used deep yellow Duston (local) stone and white Bath stone for alternated voussoirs and courses.

THE RENAISSANCE OF ARCHITECTURE IN ITALY:

CARPENTERS' COMPANY UNIVERSITY LECTURES ON ARCHITECTURE.

AT University College, on Tuesday, Mr. Halsey Ricardo, F.R.I.B.A., delivered the public Inaugural Lecture of his course of lectures on "The Renaissance of Architecture in Italy," the Master of the Worshipful Company of Carpenters (the Rev. C. B. Bartlett) presiding.

Mr. Ricardo, who showed a number of fine lantern views in illustration of his remarks, said that of the outward characteristics of the Italian Renaissance we all, he assumed, had some general notion; and those who had read Vasari, and were ready to accept his statements without demur, were able to date the actual beginning of this new art and see it arising from Nicholas the Pisan's workshop. But though it might be convenient to mark out critical moments in the history of art, those moments were the symptoms of some cause or causes—they were not the cause itself. They were the germs. What was it that caused the great outburst of artistic feeling common to all human life in Europe in the XIIIth century? What were the conditions that brought about these culminating periods of art? Any explanation of the social conditions that created the artistic fervour of the century failed to account for the revival of this activity in the XVth century. The evolution of the human race was an obscure process; it had its latencies and its activities, but we were not at present physicians enough to predicate the result of any given set of conditions. In attempting to follow out the manipulations of the Renaissance which occurred in the XVth century, and to analyse the force which produced what we understood as the modern spirit, we must turn our attention to the earlier period and consider what was life and what was being done in mediæval times. The essential difference between the middle ages and modern times was the emergence of the individuality of the man from out the commercial life and commercial ideas of the XIIIth or XIVth centuries.

The lecturer then drew a picture of the communal life in Italy. Each considerable town had, for its own defence, to enclose itself within its own walls. Every town considered itself as a whole, as an independent state. Each citizen felt an ardent patriotism, not for the kingdom of Italy, or for the Empire, but for his own city. It was from the year 900 to the year 1200 that the most prodigious works were undertaken and accomplished by the towns in Italy. They began by surrounding themselves with strong walls, ditches, towers, and counter-guards at the gates—immense works which a patriotism ready for every sacrifice could alone accomplish. The maritime towns at the same time constructed their ports, quays, canals, and custom houses, which served also as vast magazines for commerce. Every city built public palaces for the Signoria, or municipal magistrates—and prisons; and constructed churches which to this day fill us with admiration by their grandeur and magnificence. The inhabitants undertook the immense labour of making dykes to preserve the plains from the inundation of the rivers, and of deriving from those rivers innumerable canals of irrigation. The *naviglio grande* of Milan, which spread the clear waters of the Ticino over the finest part of Lombardy, was begun in 1179, resumed in 1257, and terminated a few years afterwards. The cities, surrounded with thick walls, terraced, and guarded by towers, were for the most part paved with broad flagstones, whilst the inhabitants of Paris at the same date could not stir out of their houses without plunging into the mud. Stone bridges of an elegant and bold architecture were thrown over rivers; aqueducts carried pure water to the fountains. The palace of the podestas and signoria united strength with majesty. The most admirable of these, of Florence, was built in 1298. The loggia in the same city, the church of Santa Croce, and that of Sta. Maria del Fiore, were begun by the architect Arnolfo di Cambio between the years 1284 and 1300. A pure taste, boldness, and grandeur struck the eye in all the public monuments, and finally reached even private dwellings; while the princes of France, England, and Germany, in building their castles, seemed to think only of shelter and defence. Sculpture in marble and bronze soon followed the progress of architecture. In 1336, after six years of labour, Andrea Pisano, son of the sculptor and architect Nicholas, cast the admirable bronze gates of the Baptistry at Florence—Nicholas himself had carved the famous pulpits at Pisa and Siena. About the same time Ciambue and Giotto revived the art of painting, Casella music, and Dante his divine poem. Italy, ennobled by freedom, enlightened nations till then sunk in darkness. The wages of workmen, interest of capital, and the profit of trade rose simultaneously, while everyone gained much and spent little.

The lecturer, having referred at some length to Dante's poetical works, said that the church raised to the memory of San Francesco at Assisi testified to the veneration in which the "little brother" was held. The foundations were begun only two years after the death of St. Francis, and the decoration that covered the walls and vaults made the church one of the richest and most sumptuous in Italy, representing in fresco the legends of the church, the history and "rule" of St. Francis. Some of the contemporary stained glass still remained. Giotto was credited with some of the frescoes, and the church itself proved a school of religious art and decoration. It was in 1245 that the people of Siena started building their cathedral, to be the monument of their prosperity and their ambition. It was the people rather than the clergy who determined its form and its dimensions. As it neared completion, a proposal was started that the choir, which consisted of only two bays, should be prolonged to contain four. There was much opposition, and five expert advisers were called in, amongst whom was Lorenzo Maitani, the architect of the Cathedral of Orvieto then building, who declared that the proposed lengthening would not only injure its architectural effect, but would endanger its stability. But the work was proceeded with, and the addition was made. This east end of the cathedral, which, from its position on the edge of the cliff, dominates the city, was undertaken after the abandonment of the great scheme for the extension laterally of the cathedral, by which the present cathedral was to become the transept of the completed edifice, a new nave and aisles being added to the south of it. It was resolved that a new nave should be built according to the plan proposed, provided that the work now in progress should be proceeded with diligently; and the new building was begun and seemed to have gone forward with vigour, until in 1348 Siena was stricken with the "Black Death," which carried off in a single summer 80,000 of her people and paralysed for a generation the life of the city. Had the project been carried to completion, Siena would have possessed the finest church in Italy. It was begun eleven years before the Palazzo Vecchio at Florence, and the tower, built early in the XIVth century, was a marvel of grace, of beauty in colour, and of construction.

The lecturer, having described the Bargello at Florence, formerly the palace of the Podesta—sternly eloquent of the civil life of which it was the heart, and whose rugged walls were so well able to sustain the violent shocks of faction, and with its slender look out bell-tower—and the Palazzo dei Priori, now known as the Palazzo Vecchio (which was built for the housing of the magistracy or signoria, which succeeded the podesta), referred to the guild or trade system of government in Florence before the end of the XIIIth century. It was important to notice that, at the time of Florence's highest prosperity, the citizens themselves conducted their own management entirely, and this was so of the other republics in Northern Italy.

Mr. Ricardo then referred to what was doing in our own country during this century, and took Lincoln and Salisbury cathedrals as examples of buildings which were substantially created during the XIIIth century. It was in the XIIth century, following on the Norman invasion and conquest, that the great outburst of church building occurred, when the cathedrals were planned on so large a scale and in such quantity, that it was almost a rare thing to find either a church or a monastery that could not date back to the XIIth century for its inception. Henry III., who might be called our artist king, prevailed over most of the century, and it was he who was building Westminster Abbey, whilst the canons of St. Paul's were adding the choir to the cathedral. There was incessant correspondence going on between the directors of the works in one country and the other. French and German masons crossed the Channel to help us in our structures, and English masons went abroad, took notes, and when they returned their experience was at the service of their brothers in the craft. The noticeable thing about these matchless buildings was their organic unity of structure; the decoration grows out of the piers of stone as an integral part of the masonry—it was the very blossom and flower of mason craft. The carved work was not the *tour de force* of some external sculptor called in to embellish the portals and the arcades; it had grown out of the mason's yard—grown out of the joy and pride of the craftsman and out of

Digitized by Google

the sincerity of his feelings. One could not look at the porches of Chartres and Rheims or the west front of Wells Cathedral without being conscious of a very noble ideal, of an attempt to charge stone with a gospel at once grave and tender, to endue stone with a mission both to instruct and to comfort. We must remember that at the time these statues were carved, they were also charged with colour and made to look as much like living people as the conventions of the time would allow. Divested of their panoply of colour the figures now looked frozen, stark, and unnatural, and yet the essential majesty of their forms survived the cold denudations of their splendour. And how part and parcel of the structure they were! How they enforced and dignified the lines of the buildings they adorned! What damage was done to the beauty of the architectural design if so much as one statue was torn from its place or mutilated within its niche! Even the painted windows had this severe subordination to the whole effect. At this epoch, so much of achievement seemed to have been universal and in everybody's hand. Speaking generally, we did not know the names of craftsmen; the work they did was what was to be naturally expected of them; there was no differentiating one branch of a craft above another.

This wave of universal and splendid craftsmanship grew from the effort of the craftsman to realise the high ideal of life and service that in the century before the votaries of the Church had preached and the brothers of the Church had trained. Passing from Rome to Canterbury, London, etc., were a stream of prelates, and these and also merchants did much to familiarise Italy with what was being done in the countries north of the Alps. Illuminated missals, etc., from England and the Ile de France influenced similar work being done in Italy. The quatrefoils giving the month's labours and the signs of the zodiac on the base of Amiens Cathedral was a foretaste, and, if one must make comparison, more admirable than Giotto's panels on the base of his campanile, whilst they were executed 100 years earlier. It was impossible to contemplate Fra Angelico's work without feeling that his painting—or panel, at any rate—was an extension of the illuminated missal. Before the end of the XIIIth century Pisa was the most important city in Tuscany, and she was the first to introduce into Tuscany the arts that ennobled wealth, and her dome, her baptistry, her leaning tower, and her Campo Santo had been successively built from the year 1063 to the end of the XIIth century. The panels in the Pisan pulpit had a breath of northern atmosphere upon them; and so, too, had the tomb of St. Peter Martyr in the church of Sant' Eustorgio at Milan, by Giovanni di Balducci, who also was a Pisan. The crowned heads of Europe attended the consecration of the choir of Lincoln, and some notice of its incomparable sculpture must have diffused itself as far south as Italy. They saw what was being done at St. Paul's and Westminster, and the seed sown by these northern kingdoms was harvested in after-years in Italy. Thirty years before the presence of these royalties in England had the nave of the cathedral of Amiens been built, and when it was finished Niccolo was a young man of twenty years, and the famous pulpit in the baptistry at Pisa was not sculptured till some years afterwards. Giotto did not live to see his campanile completed, dying some hundred years after the completion of the Amiens quatrefoils; and many of the panels were carved by Andrea Pisano, who carried on Giotto's work and died before seeing the campanile finished.

Contemporary with Giotto was Lorenzo Maitani, who devised the façade of Orvieto Cathedral and carved the bas-relief on the lower parts of the great piers. The cathedral itself was founded somewhere about 1285. The guardians were unwearied in providing for its ornamentation and did all in their power to obtain the services of the first masters of the day for its embellishment. If we recalled to our memory the porches of Chartres and the south door of Lincoln we were struck by the difference between masons' sculpture and goldsmiths' sculpture. At Chartres and Lincoln the enrichments grew out of the stonework; and from sheer love of his material, joy in his dexterity, and delight in the exercise of his fancy, the mason developed the articulations of the building and paid a decorative homage to their functions. But the splendour of the façade of Orvieto was that of the jeweller, of the worker in ivory and in silver; it was, as was the campanile at Florence, goldsmiths' architecture rather than masons'. The wealth of colour that, by its mosaics, made it appear to us to-day so striking was nothing so exceptional in the early days of the XIVth century; but, being executed in glass instead of the usual medium of coloured plaster, the effect of what the designer aimed at had survived to justify what seemed to us so incredible and so fantastic, the representations in high colours, both in pictures and in illuminations, of mediæval buildings. The west front of the cathedral was a great book, which all except the blind could read, and they took a pride in having its pages so brilliantly ornamented and so conspicuously placed, riding majestically above the roofs and walls of their town.

The strength of the early Renaissance artist was due to his having been brought up in the lap of mediæval tradition and helped forward in his career by the sympathy and appreciation of his fellows and the making of the noblest building that ever was: all were in accord as to that. It was not a matter of having the best sculpture only, the finest windows, the tallest steeple—the piers that carry the vaults, the walls that enclose the church, shall have a distinction and a beauty that shall be as much a prodigy of masonry as the kings and prophets at the entrance-doors. For a short period only was it possible for such *camaraderie* to be: the standard of execution rose to such a pitch that the man who attained the next step onwards inevitably separated himself from his fellow craftsmen. Moreover, the actual requirements multiplied and by consequence specialised. But this short period was the crucial one in the history of modern art. For 200 years this passionate art had been forming itself, unconsciously, as a social and protective art, concerned with the needs of defence and the necessities of the ritual of religion. In the XIIIth century it rose to its greatest achievements and its greatest strength; and the force which culminated then, lasted in scarcely diminished quantity for the next three centuries to come.

On the motion of the Chairman, a hearty vote of thanks was accorded to the lecturer.

The Provost, Dr. T. Gregory Foster, in the names of the College authorities, thanked the Chairman for presiding and the Carpenters' Company for what they were doing in the matter of architectural education. They owed a great deal to the Company.

Professor Simpson seconded the vote of thanks, which was heartily agreed to, and the proceedings terminated.

The second lecture will be given next Tuesday.

NEW SKATING-RINK, ABERDEEN.—A site has been acquired in Justice Mill-lane, Aberdeen, for the erection of a roller skating-rink. The new building is being erected from designs by Messrs. Sutherland & George, architects, and will comprise manager's-room, ladies' and gentlemen's cloak-rooms, with lavatory accommodation attached, skate store and repairing-room, and two tea terraces. A feature of the establishment will be the provision of two smaller rinks, which are to be set aside for the exclusive use of beginners. The rink will be capable of accommodating 400 to 500 skaters.

THE BRITISH SCHOOL AT ATHENS.

THE annual meeting of the British School at Athens was held on Tuesday at the rooms of the Society of Antiquaries, when there was a large attendance, the room, in fact, being so inconveniently crowded as to lead to a protest from one member present in regard to the necessity of securing a larger and more commodious room for future meetings.

Professor Murray occupied the chair, and in a charming written address spoke of the necessity for solidarity of treatment in the study of Greek literature and art, and of the interest which lay in the unearthing of the actual things which Greek workmen had made and handled, and gave some information as to communications he had received showing how widely the interest in Greek literature and Greek archæology had extended of late. He concluded by moving the adoption of the Report (copies of which had been circulated in the room).

Mr. H. H. Statham, in seconding the Report, expressed his sympathy with the Chairman's expressions as to the interest that lay in seeing and handling the actual objects which ancient sculptors and masons had put their hands to; while, in addition to this interest of association, there was the practical value of such an Institution as the British School at Athens in training young archæologists, or giving them the opportunity of training themselves, in the more difficult task of reading and elucidating the actual meaning of remains which were sometimes, to the untrained eye, little more than confused layers of stones.

The following excerpts from the Report will serve to give a general idea of the nature of the work done during the past year:—

"In presenting their annual Report the Managing Committee have first to congratulate the Director and staff of the School on having brought to a successful conclusion the work on which they have been engaged for the past four sessions, the excavation of the shrine of Artemis Orthia at Sparta. They wish once more to emphasise the debt the School owes to Mr. W. W. Astor for the munificent donation which has enabled the work to be carried out on an extensive scale and with success. . . .

The sanctuary of Artemis Orthia has now been finished, the Menelaëum has been excavated, and the more promising parts of the site of the ancient city examined by a series of trial-pits, with the result that it seems hardly likely that any site of importance remains for future excavation. A large trench was made in the theatre from the top of the auditorium to the orchestra, and it appears that the building is very much destroyed. In the lower parts the depth of earth is very great, and houses have been built at a higher level, a process which has probably left very little of the theatre remaining. . . .

Sanctuary of Artemis Orthia.—The additions made to our knowledge by this last year's campaign are best seen by comparing the latest plan with the plan published a year ago. The walls of the sacred enclosure at different periods have been found in great part, especially behind the temple and to the east of the altar. An investigation of the lowest strata has shown that the archaic altar and primitive temple are later than the cobble pavement with which the *hieron* was paved, and the walls of the *hieron* at this early period have now been found. This gives an earlier stage of the sanctuary than had before been clearly made out. In this earliest stage the precinct was smaller than in subsequent periods and the centre of the cult nearer to the centre of the hollow in which the sanctuary stood. This is shown by the position occupied by the deposit of black sacrificial ashes. At this stage there seems to have been no temple, but there are remains of what was probably the altar. The first stage of all is represented by the ashes and geometric pottery found below the cobble pavement. In order to carry through this work a further small portion of the foundations of the Roman amphitheatre was removed.

In the first year of the work, part of a large subterranean water channel was discovered, and this has now been fully excavated. It dates probably from the IVth century B.C., and was broken into and largely destroyed by the building of the Roman amphitheatre. Solidly built of dressed stones and roofed with large slabs, it is a remarkable work, and very probably

Digitized by GOOGLE

D

was constructed to carry off the water of a natural brook that in early times may have flowed down to the Eurotas through the hollow in which the sanctuary lay.

The archaic deposits proved to have been nearly exhausted in previous campaigns. Some important objects were, however, found, notably an ivory plaque representing the winged Orthia with a bird and a snake. This absence of finds from the outlying parts of the site satisfactorily proves that the whole sanctuary has now been exhausted and the full harvest reaped. The final publication of the objects found has still to be undertaken.

The Menelaëum.—In May we were led to excavate the building which has been for long identified with the Menelaëum. This building stands on a hill overlooking the east bank of the Eurotas with a commanding view of the site of Sparta. The work, which was completed in three weeks, was under the charge of Messrs. Wace & Thompson. The result is a plan differing materially from the sketch-plan published by M. Kastriotis, who had already excavated the site. The building now reveals itself as an oblong platform which may have supported a small temple or other monument. This platform stood upon another, from which it was reached by a ramp, the traces of which are preserved. To this structure a terrace was added later on two sides. The date may be the Vth century.

An interesting series of bronzes, notably an archaic figure of a woman, terra-cottas, and lead figurines were found. The pottery was especially interesting as filling up a period (Laconian II.) which is not well represented in the series from the Orthia Sanctuary. The majority of these finds were made on the slope below the building in a position which showed that they had been thrown out from it. Some of these certainly belonged to a period earlier than the present building, and some blocks were found which probably formed part of an antecedent structure.

Below all the other finds some undoubtedly Mycenaean sherds were discovered, and some Mycenaean houses, as yet only partially examined, were found a short distance away. This Mycenaean settlement will form the subject of future work. . . .

Plans for the Coming Session.—The site of Sparta itself hardly promises much further. The Mycenaean settlement found this year near the Menelaëum should be further explored, and there are some other sites in Laconia which should be tried before the School undertakes any new scheme of excavation. The publication of the finds from the Orthia Sanctuary will involve so much work for the staff that they will probably do well to confine the School's official excavations during this session to these points."

Professor Dawkins then gave a description of some of the work done at the sanctuary of Artemis Orthia, with lantern illustrations showing the walls as excavated, and some of the figurines and pottery discovered on the site.

ART-NOTES FROM PARIS.

M. BESNARD has now finished his four great decorative paintings for the central cupola of the Petit Palais, which will be fixed in place next month. The subjects are "La Mystique," symbolised by figures of the Virgin and of St. George slaying the dragon; "La Plastique," represented by a composition of "The Judgment of Paris"; and "La Pensée" and "La Matière," which were successively exhibited at the New Salon, and are very fine examples of decorative painting with a symbolic meaning. M. Cormon, who has been commissioned to decorate a part of the vault of the sculpture gallery which stretches along the front block of the building on each side of the central dome, has chosen for his subject "The History of Paris from Clovis to the Revolution." Among the ten subjects illustrated will be the building of Notre Dame, the ancient Mediæval University, the sculptors and architects of the Renaissance, and the Comedies of Molière. The other half of the sculpture gallery vault has been intrusted to M. Roll; who, however, has not yet submitted any sketches to the Municipal Council. At the two ends of the gallery the semi-domes of the two apses will be decorated respectively by M. Ferdinand Humbert and M. Georges Picard; the former has chosen for his subject "The great men of the modern period," the latter "The artistic and literary triumph of the City of Paris." Lastly, M. Paul Baudoüin is to decorate the ceiling of the colonnade surrounding the central garden of the Palais; this work, already far advanced, is being executed in fresco, and is to represent the Four Seasons, the Hours, and the Months of the Revolution Calendar.*

The decoration of the Petit Palais will ultimately be completed by the placing of sixteen busts of eminent men in the sculpture gallery, by the stone statues which are yet to be placed as part of the exterior decoration of the building, and by the decoration of the cupolas over the two staircases leading to the basement galleries.

The Académie des Beaux-Arts has this year awarded to M. Costel, a pupil of M. Louis Bernier, the Chaudesaigues prize, which consists of two annual payments of 2,000 francs to enable a young architect to go through two years study in Italy. The Roux prize has been awarded to M. Martello, a pupil of M. Paulin. The subject for the competition was—"A French Embassy in an Eastern Country."

The sculpture relief by M. Moreau-Vauthier, entitled "Le Mur des Revolutions," which was exhibited at the last Salon, has been erected in the Square Gambetta, where it is effectively placed with the ivy-clad boundary wall of Père Lachaise cemetery as a background.

A specially designed lift is to be established in the Louvre, which will take visitors not only to the main suite of galleries, but up to the attic story, where many things are to be seen for which space has not yet been found elsewhere. The design and carrying out of this lift, which is to include some fine wrought iron work, have been confided to M. Hulot, who is a pupil of M. Redon, the architect to the Louvre.

The death is announced, at the age of 70, of M. Antoine Soudée, Honorary Architect to the City of Paris, member of the Conseil Supérieur d'Architecture and of the Société Centrale. He was a pupil of Labrouste and of André, and has carried out important works for the municipal administration of Paris; among others the Firemen's barracks in the Rue Philippe de Girard, the Ecole Colbert, and the group of schools in the Rue Butles Chaumont. The death is also announced of M. François Nachon, architect, and Chevalier of the Legion of Honour, who was Inspector of Works at the Opera House, under Charles Garnier.

THE SOCIETY OF ARCHITECTS.

ANNUAL MEETING.

THE annual meeting of the Society of Architects was held on Thursday last week in the rooms of the Society, Staple Inn-buildings, High Holborn, W.C., Mr. G. E. Bond, J.P., President, in the chair.

Announcements.

The President announced that arrangements had been made for a social evening on November 8 for students, at St. Bride's Institute. He hoped that not only students, but members of Council and of the Society, would attend and see the exhibition of students' sketches made during the year.

The following gentlemen were then declared elected, *i.e.*:—

For Membership.—C. W. Ball, Southsea; H. W. Burton, Bloomsbury-square, W.C.; W. Dingwall, Streatham, S.W.; B. E. Evans, Llandilo, South Wales; O. B. Hatchard, Khartoum; C. H. Heathcote, Manchester; R. Morley, Kingsway, W.C.

For Studentship.—H. Pritchard, Pontymister, Risca, Mon.

Annual Report.

Col. F. S. Leslie, R.E., Hon. Secretary elect and Past Vice-President, then read the report of the Council for the past year.

Sixty members, two honorary members, and forty-two students have been added to the register during the past twelve months, and, after allowing for deaths, removals, and resignations, the total membership stands at 1,000, an increase of twenty-five over last year.

Registration.—Early in the session the Council was approached by the South African Branch for a donation towards the expenses to be incurred by the Transvaal Institute of Architects, in promoting a Bill for the Registration of Architects in that part of the Empire. The Council responded by at once sending a sum of 50*l.*, with an assurance that any further assistance which the Society could give would be at the disposal of the Branch and of the Transvaal Institute. The Society's Branch took up the matter energetically. The President of the Branch, Mr. R. Howden, and the Hon. Secretary, Mr. E. H. Waugh, visited Cape Town and other centres, when reciprocity was arranged between the architects of different South African Colonies. The Transvaal Institute also worked hard in the same direction, with the result that a Bill was drafted and read a third time and passed without opposition. While the Transvaal architects were so engaged, those at home were doing everything possible to bring about unanimity of purpose with the same object in view. A letter was published in the *Builder* of February 20, and signed by Mr. Percy B. Tubbs, Vice-President, and other supporters of registration. The correspondence which ensued culminated in a plebiscite taken by the *Builder* in April, as a result of which it was ascertained that, of those who took part, a majority of eight to one were in favour of registration. This result corresponds almost exactly with a similar plebiscite taken by the Council some six years ago and tended to confirm the view that the profession in England was practically unanimous on the principle, and that, where differences of opinion exist, it was on matters of detail connected with carrying the principle into practice. The Institute of Architects in New South Wales was also actively taking the matter up and had issued a petition with a view of strengthening its hands in approaching the Government.

Examinations.—The half-yearly examinations to qualify for membership have been held at London, Manchester, Johannesburg, Cardiff, and Oxford, the two latter being new centres. The Society's certificate is accepted by the Transvaal Government as a qualification for registration as an architect, under the new Act. Several alterations have been made in the syllabus, the principal being that candidates failing to qualify in any subject shall be allowed to sit again at either of the next two examinations without further fee, and that "Contracts and specifications" are now taken together. The Architectural Association Day School course and the P.A.S.I. certificate (Building Subdivision) are now accepted as exemptions in Sections I. and II. and Section III*b.* respectively.

Students' Section.—Early in the year a Committee was elected, which appointed Mr. H. V. M. Emerson, A.R.I.B.A. (member of Council), as Chairman, and Mr. H. Y. Margary (student), as Hon. Secretary. A feature of the work has been the series of sketching parties, organised by Mr. H. Y. Margary and his Committee. The President, Mr. G. E. Bond, J.P., has offered a prize of the value of 3*l.* 3*s.* for the best work done during the first session by the students, and arrangements are being made for a "Students' Night" early in the new session, when the sketches and drawings will be exhibited. The Travelling Studentship Competition continues to attract a good deal of attention, twenty-five sets being received and adjudicated upon. The subject this year was a secondary school to accommodate 100 boys and 100 girls. Mr. Chas. H. Hudson, of London, secured the first place, while the design of Mr. Geo. Ll. Evans (London) was placed second, and a special prize of 10*l.* awarded to him by the Council. Mr. Hudson—who has been successful in other smaller students' competitions—selected Oxford for his touring centre, as did also Mr. Evans. Mr. Edgar M. Leest, J.P. (member of Council),

* It seems a pity that the French authorities of the present day cannot agree to forget that absurd and futile attempt of the Revolution to invent a new calendar of months.

Digitized by Google

again offered a prize of the value of 3*l.* 3s., to be competed for by the students. The subject selected was "A Volunteer Fire Brigade Station for a Country Town," the competition being confined to students whose ages did not exceed twenty-three on March 1. Six sets of designs were received, but none were considered of sufficient merit to justify any award being made. The second year of the correspondence classes, which is in charge of Messrs. James Bartlett and Chas. H. Mead (members of the Council), came to a conclusion in June, when Mr. J. Pickup, of Blackburn, secured the Council's prize of 2*l.* 2s. for first place in the advanced class; Mr. D. H. H. Barry, of Eastbourne, being placed first in the elementary, taking the prize of 1*l.* 1s., which Mr. Pickup secured the previous year. It is proposed next session to offer prizes of the value of 1*l.* 1s., 2*l.* 2s., and 3*l.* 3s. to the students heading the lists in the first, second, and third years respectively. The Council has under consideration the question of awarding certificates of proficiency in connexion with the correspondence classes, but until the third year's course is completed the matter cannot be dealt with.

The Library and New Premises, etc.—In consequence of the increasing demand for books on loan, the Council has reduced the period during which they may be kept, and a fine is now payable on books retained without being renewed. The volumes are outgrowing the accommodation provided for them, and the Loan Library is extensively used, some hundreds of volumes having been issued during the year. Considerable additions have been made to the library by gifts and purchases of books, and a design for a bookplate has been approved.

New Premises, etc.—Reference having been made to the good work of the Architects' Benevolent Society and its need of more liberal help, and to the successful efforts of the South African Branch of the Society of Architects, the Council announce that the negotiations for permanent premises referred to in the last report have been completed, and that an agreement for a lease of 28, Bedford-square, W.C., has been entered into on favourable terms. Plans for adapting the premises have been prepared by Mr. FitzRoy Doll, F.R.I.B.A., and approved by the Council. The probable cost of the alterations will be about 2,000*l.*, and the Council hopes that the liberality of members will enable it to carry out the work without encroaching upon the Society's reserve fund.

It is anticipated that the balance-sheet to be submitted at the annual meeting next month will be a favourable one, and that the present surplus will be augmented.

The President, Mr. G. E. Bond, J.P., and the Honorary Secretary, Mr. Ellis Marsland, have been elected Honorary Members of the Royal Architectural Institute of Canada; Mr. Beardwood has been elected President of the Transvaal Institute of Architects; and Mr. Howden and Mr. E. H. Waugh have been appointed members of its Council. The Council has decided to revert to the original plan of appointing Local Honorary Secretaries annually.

Architectural Competitions.—With a view of securing, so far as possible, that all competitions shall be conducted under proper conditions, the Council is co-operating with the Royal Institute of British Architects in its endeavour to show that it is undesirable for members of either body to compete unless the conditions are such that no exception can be taken to them. It is only by concerted action that this end can be secured, and the Council invites the co-operation of members of the Society in this direction.

The Budget and the Profession.—The Society is co-operating with the British Constitutional Association in its efforts to obtain some revisions of the Budget proposals in regard to the Taxation of Land Values. Mr. Percy B. Tubbs, Vice-President, and Mr. G. A. T. Middleton, Past Vice-President, attended meetings on behalf of the Society, and the latter represented the Society at a deputation to Mr. Lloyd George in July.

Architects and Engineers, etc.—The Council was approached by the Society of Engineers with a view of securing reciprocity in the employment of qualified engineers for engineering work and architects for architectural work. The views of the Society of Engineers were made known to the members by a letter published in the *Journal*.

The Council has gone into the matter of Unemployment Assurance with great care, and, after long and careful consideration of the question and of the opinions of experts, has decided that it is not advisable at present for the Society to attempt to deal with it.

It has been found necessary to appoint a General Purposes Committee in addition to the other Standing Committees, in order adequately to deal with the many details involved in the Society's work. During the past session seventy-seven Council and Committee meetings have been held in addition to the ordinary meetings of the Society.

On the motion of the President, who referred to the satisfactory character of the Report, seconded by Mr. G. A. T. Middleton, the Report was adopted. Mr. Middleton said it was very satisfactory that at such a time of depression the Society showed an increased balance, especially as one important body, the Architectural Association, had to face a decreasing balance, which was attributed to the present bad times. The Report, so far as the Society was concerned, was a very good one. As to Unemployment Assurance, it was a matter of great regret that the Council had come to the conclusion not to carry out the project. It had been found impossible to put forward a satisfactory scheme, and one which would receive the endorsement of the Society. They were not strong enough to meet the calls which would be made upon them, and a great difficulty would be to prove *bona fide* cases of unemployment. The Architects' Benevolent Society deserved all the support it could get, for it could not meet all cases at present.

New Council.

Mr. E. W. Harvey Piper then read the scrutineers' report on the voting papers sent in for the election of officers for the ensuing year. One hundred and forty-four voting papers were examined, four being invalid. The following is the result of the voting:—

As President.—Geo. E. Bond, J.P., Rochester.
Vice-Presidents.—J. W. Dyson, Newcastle-upon-Tyne; Percy B. Tubbs, London.
Honorary Secretary.—Col. F. S. Leslie, R.E. (Past Vice-President), Woolwich.
Honorary Treasurer.—Henry Adams, M.Inst.C.E., London.
Honorary Librarian.—C. H. Mead, M.R.San.Inst., London.
As Council.—R. Geo. Bare (Past Hon. Librarian), London; G. A. Birkenhead, Cardiff; B. D. Cancellor, Winchester; T. R. Clemence, Guildford; R. Cecil Davies, Chester; R. A. Jack, London; Cholton James (Past Vice-President), Cardiff; E. M. Leest, J.P., Devonport; H. W. Matthews, Bath; G. A. T. Middleton (Past Vice-President), London; E. C. P. Monson, London; A. J. Murgatroyd, Manchester; Thomas Overbury, Cheltenham; E. J. Partridge, Richmond; J. H. Pearson, London; E. J. Sadgrove, London; B. R. Tucker (Past Hon. Treasurer), London; R. Willock, London.

Col. Leslie said he hoped that after a year's rest Mr. Marsland, the late Hon. Secretary, in whose footsteps it would be difficult to follow, would take up the work again.

Mr. Middleton proposed, and Mr. E. J. Sadgrove seconded, a vote of thanks to the retiring officers and members of Council. The motion was heartily agreed to.

Mr. Middleton said it was one of the rules—an exceedingly good rule—that no ordinary member of Council should retain office for more than three successive years, and that would account for some of the changes on the Council. In Mr. Marsland they had lost an extremely valuable member of Council.

The President remarked that the work of the Society was increasing, and by that time next year they hoped to be occupying their new premises.

Votes of thanks to the scrutineers, Mr. Harvey Piper and Mr. Sidney Marsland, and the Secretary and staff having been accorded, the proceedings terminated.

THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A SOUTH Wales district meeting of the members of the Association of Municipal and County Engineers was held in the City Hall, Cardiff, on Saturday last. Mr. W. Nisbet Blair (St. Pancras), President, was in the chair, and among those present were Messrs. W. Harpur (Cardiff), W. F. Loveday (Stoke Newington), W. C. Easton (Glasgow), A. C. Harpur (Caerphilly), W. J. Davies (Blaina), D. M. Jenkins (Neath), E. T. Watts (Bishop's Stortford), W. A. Collins (Bridgewater), F. W. Jones (Frome), E. J. Evans (Penarth), W. E. Clarson Thomas (Neath, Hon. District Secretary), G. A. Phillips (Bridgend), and others.

The Mayor offered the members a hearty welcome to Cardiff. He said he was a strong believer in the interchange of thoughts and ideas in connexion with municipal matters, not only so far as the officials were concerned, but also among the members.

The President, in acknowledging the civic welcome, said they were there to visit works which had been carried out by Mr. Harpur. He was glad to recognise the benefit of the inspection of works in progress, more particularly to younger members of the profession. They profited by the experience of other people.

On the proposition of Mr. W. F. Loveday, seconded by Mr. J. Jenkins, Mr. W. E. Clarson Thomas was re-elected Honorary Secretary for the South Wales district.

Sewage Works, Cardiff.

Mr. W. Harpur, M.Inst.C.E., City Engineer of Cardiff, then presented a paper descriptive of the western district main outfall sewer. He said that the western district, which comprised that portion of the city west of the River Taff, had developed very rapidly during recent years, the population having increased about 140 per cent. since 1881, and was still increasing, while the western district main outfall sewer had remained unaltered since its construction about fifty-five years ago. The necessity for the new scheme arose solely from the inability of the present system to cope with storm water.

The existing outfall basin was small, and the outfall tide locked for about five hours during every tide. The district was low-lying, and during the period that the sewage was impounded it backed up to a level within 3 ft. of that of the lowest basements; consequently a heavy storm during such times produced disastrous results.

To remedy this state of things, and at the same time provide for the natural extension and development of the district for many years, was the object of the present scheme. The ideal sought after was the free discharge of sewage and storm water at all states of the tide.

The invert level at the termination of the sewer, therefore, was fixed at 20 ft. above ordnance datum, which was about the same as high water of mean spring tides with an outfall conduit leading therefrom and terminating at low-water mark of spring tides. This necessitated pumping as one of the main features of the scheme.

In considering the question of the best site for discharge regard was paid to the following points, viz., that the outfall should be situated in such a position as to give no offence to neighbouring authorities, and be so placed that the tidal currents should immediately carry away and disperse the sewage without the possibility of fouling the foreshore.

Geographically Lavernock Point presented these advantages in an eminent degree, and a series of tidal experiments extending over every hour and description of tides proved

this. Spring tides at this point had a velocity of 5 knots per hour on the ebb.

After a careful study of the tide currents it was decided to discharge for four hours only at high water.

In calculating the required capacity of the proposed outfall sewer allowance had been made for the contributions from an ultimate total population of 200,000 from inside and outside the city, and the route, while largely following the contour of the land, had been planned with a view to the reception of sewage from certain outlying districts at present inadequately served.

The present main sewer would be intercepted at three points, whence the new intercepting sewers—two of which would be 4-ft. diameter barrel, and the third 3 ft. 9 in. by 2 ft. 6 in. egg-shaped—would converge to a junction in Penarth-road. From that point a 6-ft. diameter circular sewer would convey both the dry weather flow and storm water along Penarth-road for a distance of 1,500 yds. at a gradient of 1 in 1,650 to the pumping station. Before reaching the pump well the sewage would pass through a screening-chamber. The whole of the sewage up to a maximum rate of pumping equivalent to 150 gallons per head per day of the population would be pumped to a height of 56·5 ft. above ordnance datum, on a total lift of 61·5 ft., from whence it would gravitate to the outfall.

The storm waters over and above this quantity would discharge into the River Ely, which was a tidal river. Discharge would be free until mean tide level was reached, after which pumping would be resorted to, the maximum head of tide to be pumped against being 32 ft. The existing outfall into the estuary of the River Taff would also be available for the overflow of storm waters when the state of the tide would allow.

The construction of the 4-ft. diameter intercepting sewer along Sloper-road and the 6-ft. diameter main sewer along Penarth-road was now in hand. It was originally intended to construct both sewers almost wholly of cement concrete, the invert only being lined with a 4½-in. half-ring of brindled brickwork. This form of construction had been carried out in Sloper-road, where the work had been executed in open cutting; but in Penarth-road, where tunnelling was adopted, it was found that owing to the heavy nature of the ground excessively strong timbering was necessary in order to carry out the original idea. The contractors for the work (Messrs. H. B. Neal, Ltd.) therefore received permission to substitute cement concrete segments in lieu of timbering, and inside this lining the sewer had been constructed of two rings of brindled brickwork.

Along the route of the 6-ft. diameter sewer sludge-chambers and manholes had been built alternately 100 yds. apart.

The screening-chamber consisted of two compartments fitted with penstocks on both the inlet and outlet ends, so that one might be made accessible for cleaning or repairs while the other was in use. The screens, which were 7 ft. 6 in. wide by 13 ft. 6 in. deep, were composed of taper bars spaced ¾ in. apart. They were automatically cleaned by Stott's raking apparatus fitted with patent rake-cleaning gear.

Immediately beyond the screening-chamber a weir had been constructed for the purpose of forming a storm water overflow. The normal flow of sewage would thus be diverted to the pump well for delivery through the rising mains to the outfall at Lavernock, while storm waters would flow over the weir through the conduit for a distance of 130 yds. into the river Ely. The overflow conduit consisted of 4-ft. diameter cast-iron pipes, with turned and bored joints, laid on a bed of cement concrete 2 ft. thick. Over the outlet a double flap valve was fixed.

A by-pass from the storm-water pump deliveries was connected to the overflow conduit for the purpose of pumping the water against the head of tides should discharge be necessary at any period above mean tide.

A convenient site for the required pumping station was acquired adjoining the river Ely, thus affording opportunity for the discharge of storm water, while near at hand the ground rises sharply, from whence sewage, after being pumped, would gravitate to the outfall.

The buildings, which were of plain but substantial character, consisted of an engine-room, gas-engine-room, boiler-house, pump-chamber, workshop, office, messroom, stores, etc.

The pumping plant consisted of vertical plunger pumps driven by steam-engines for dealing with the ordinary sewage and centrifugal pumps driven by gas-engines for the storm water.

The steam-driven plant comprised four sets of compound condensing vertical steam-engines, each of about 60-i.h.p., and capable of pumping continuously at the rate of 150,000 gallons per hour, and two smaller sets, each of about 20-i.h.p., and capable of pumping 50,000 gallons per hour. Provision had been made for the extension of the plant when required by the addition of two sets of the larger engines and pumps.

The storm-water plant comprised two sets of centrifugal pumps direct coupled to vertical gas-engines, each of about 150-b.h.p., and capable of discharging 680,000 gallons per hour against the head caused by the highest tides.

There were two rising mains, each 30 in. diameter, laid side by side for a length of about 350 yds. from the pumping station to the head of the gravitation sewer. For the most part the mains consisted of cast-iron pipes having socketed joints caulked with lead. Through the soft ground the pipes were laid on a bed of concrete 2 ft. thick. Immediately after leaving the pumping station the rising main crossed the River Ely, which at this point was 200 ft. wide. The method of crossing formed an interesting feature of the works. The rising mains, consisting of two 30-in. diameter steel tubes, themselves constituted the bridge, which was constructed to form a segmental arch of 204 ft. span with a rise at the centre of 20 ft. 6 in. The twin lines of tubes were braced together, nearly touching at the crown of the arch and diverging towards the abutments where the distance from centre to centre was 12 ft.

At the head of the gravitation sewer a gauge-chamber had been constructed for the purpose of ascertaining that the stipulated quantity was being pumped to the outfall before overflow into the River Ely took place. The gauging capacity of the chamber was about 25,000 gallons, equivalent to two minutes' discharge at the ultimate full delivery of the mains.

From the head of the gravitation sewer to its termination at Lavernock was a distance of 4·4 miles, the last $1\frac{1}{2}$ miles of which consisted of a reservoir sewer 13 ft. in diameter, having a storage capacity of 4½ million gallons. The provision and storage was determined upon because after a careful study of the tides it was decided to limit the period of discharge to four hours at each tide, for one and a half hours before to two and a half hours after high water, this period being the most effective. Experiments proved that during these hours all sewage discharged would be rapidly carried out to sea, meanwhile becoming so mixed and disintegrated that there could be no fear of return on the next incoming tide or leaving any deposit on the beach. Thus it becomes necessary to provide storage for a certain reasonable maximum accumulation during the eight and a half hours that the outlet valves would be closed.

The trunk sewer, which was 4 ft. 9 in. diameter barrel, and laid at a gradient of 1 in 1,950, extended from the top of the rising mains to the commencement of the reservoir sewer, a distance of about 3·3 miles. The greatest depth below the surface of the ground to the invert was 172 ft., while for a length of 80 yds. the sewer cropped out above ground, where it was carried on a concrete wall. With the exception of about 450 lin. yds. the whole of the work had been carried out in tunnel at depths varying between 16 ft. and 172 ft. below the surface.

The sewer was constructed of 5 to 1 cement concrete of a minimum thickness of 9 in., tightly packed against the sides and roof of the heading, and the invert was lined with a 4½-in. half-ring of Callybrook brindled bricks laid in cement mortar.

The reservoir sewer was 1·08 mile in length and horse-shoe shape in cross-section. It had been carried out wholly in tunnel at depths from 22 ft. to 122 ft. to invert below the surface. The arch side walls and invert were all constructed of 5 to 1 cement concrete at least 18 in. thick, and the invert was lined with 4½-in. brindled brickwork.

The penstock and overflow-chambers forming the termination of the reservoir sewer was built near the face of the cliff at Lavernock Point. The chamber was constructed of brickwork built in cement mortar and roofed over to a semicircular arch 14 ft. 6 in. span. A masonry weir was carried up to a height of 17 ft. above the invert level, thus impounding not less than 4½ million gallons, and above which overflow would take place in case the sewer should become surcharged during the hours between the period sanctioned for ordinary discharge.

The outfall conduit from the penstock-chamber across the foreshore to low water of spring tides was 546 yds. in length, of which 41 yds. was in tunnel through the cliff. The conduit consisted of 36-in. diameter cast-iron pipes, with turned and bored joints, embedded in cement concrete in a trench through the rock, and the pipes were covered with concrete not less than 18 in. thick, the top of the concrete being practically flush with the surface of the foreshore.

The amount of the contracts at present entered into was, approximately, 191,000*l.*

The afternoon was devoted to a visit and inspection of the work in progress.

THE ENGINEERING MODEL EXHIBITION.

MODEL engineering, which is represented by a regularly-organised Association, termed the Society of Model Engineers, is a really useful branch of mechanical science, constituting something of far more importance than the construction of ingenious toys for children and grown-up people. Judged by the excellent collection of miniature engines, machines, and other appliances on view at the Royal Horticultural Hall, Westminster, model engineers are keeping pace with the march of invention in the field of mechanical and other scientific work. New developments in actual practice have been closely followed, and in some cases preceded by activity on the part of the engineer who works to a small scale. The beneficial results attained by the use of models in shipbuilding is well known, and the advances in model work during the past two years are illustrated by the fact that the speed of model motor-boats has been raised from 8·76 miles to more than 15 miles an hour. Improvement such as this points to careful study of all the factors involved in high-speed running and suggests the acquisition of knowledge that should be valuable to actual builders of mechanically-propelled vessels. Similar evidences of progress are furnished by model aeroplanes, various types of which are to be seen at the present Exhibition.

A special feature of the Exhibition this year is the complete model engineer's workshop, completely-equipped machine and other tools employed in model-making. There is also a model railway track, on which steam and electric locomotives are shown in

Digitized by Google

operation at intervals, the track being equipped with appliances for testing the hauling power of the engines. The work of amateurs is chiefly represented by the models submitted for adjudication in competitions, the bulk of the space in the main hall being largely occupied by various loan exhibits, and the stands of model-making firms and of those supplying tools and accessories.

Taken as a whole, the Exhibition must be characterised as a distinct success, and a convincing proof of the advance made during recent years in model engineering.

PICTURE EXHIBITIONS.

The Grafton Gallery.

The crowds which collect at the Grafton Gallery to see the "National Loan Exhibition" in aid of the National Gallery Funds afford evidence of a keener interest in painting than this country is generally credited with. The Annual Royal Academy Exhibition is a kind of social function attended by many who care little about the pictures, but one may presume that the crowd at the Grafton Gallery is really drawn by a desire to study the contents of the building.

These are all pictures or studies by old masters; some of the pictures rather dull and some doubtful, but there are some great works well known by repute and engraving, which it is a pleasure to see again, and some less known ones which are worth attention, such as Vermeer Van Delft's masterly and brilliant little picture "The Soldier and the Laughing Girl," which must be new to many visitors; and Watteau's beautiful little work called "French Pastoral," in the Octagon room—a little masterpiece of colour and composition, only a few inches square. In the centre of the same room is Giovanni di Bologna's graceful but rather mannered bronze figure of Venus, originally executed for the Villa Castello, near Florence.

Among the most noticeable contents of the large gallery are Lord Darnley's large Rubens, "Queen Tomyris"; characteristic of Rubens—forcible in execution and commonplace in conception. Velasquez' "Water-Carrier," next to it, serves to illustrate the difference between the first-rate and the second-rate order of genius in painting. Among other works in the large room are to be noted Rembrandt's portraits of "A Man with a Hawk" and "Saskia at her Toilette"; Tintoretto's "Allegorical Subject," with its curiously artificial but effective composition of the four secondary figures all leaning, in parallel lines, towards the principal one; Lawrence's "Mrs. Maguire"; Reynolds's wonderful portrait of Sterne, in which the whole genius of "Tristram Shandy," in its wit and its cynicism, seems to be embodied; and Van Dyck's bravura portrait of the Machesa Brignole-Sala in sumptuous costume; as a picture, the more quietly treated portrait of the same lady and her son is more pleasing, but it is less characteristic of Van Dyck.

In the centre gallery are one or two small Raphael Madonnas of the type illustrated by a well-known one in the National Gallery; charming pictures in bright colours, which would not in themselves account for Raphael's fame. Lippi's curious "Adoration of the Magi" is there; Correggio's really pathetic picture of "Christ Taking Leave of His Mother"; Dürer's conventional "Salvator Mundi," in which the painter was trying something foreign to his genius; Hubert Van Eyck's "Holy Women at the Sepulchre," and Bellini's "St. Jerome," in which the careful painting of the minute bit of distant landscape is remarkable. Lord Darnley has lent Titian's head of Christ called "Salvator Mundi"; a very different affair from Dürer's. "A Portrait of a Man" by Giorgione is one of the finest and most characteristic things in the Gallery, a finer example of the painter than the large composition, "The Woman Taken in Adultery," which hangs next to it, the authenticity of which has been much discussed.

One of the most interesting portions of the exhibition is the collection of sketches and studies by Claude, Watteau, Boucher, and others, in the end gallery. Two nude studies by Boucher, Nos. 74 and 84, are especially fine, and give one a new idea of the powers of this fashionable portrait painter of his period. This room contains also a fine landscape of Gainsborough's, lent by Lady Wantage, and a sufficiently amusing large canvas by Tiepolo, which fills the end wall, "The Finding of Moses," with Pharaoh's daughter in full late Renaissance costume.

The catalogue has been drawn up with much care, and contains a great deal of information as to the history of the principal works exhibited.

The Fine Art Society.

At the Fine Art Society's Gallery is a collection of water-colour drawings by Mr. Warwick Goble, in two perfectly different styles; some of them being fairy-subjects made in illustration of Kingsley's "Water-Babies," and the remainder broadly-handled landscapes of scenes in North Devon. It says much for the artist's versatility that he is equally successful in both these very different classes of subjects; the fairy scenes are full of grace and humour and decorative effect, and many of the nature landscapes are very fine little pictures. In the first of the "Water-Babies" subjects, however—"Play by me, bathe in me, and mother and child," Mr. Goble has misread his author by representing the mother and child on the seashore; the very point of the poem is the contrast between the river as it was by nature and the river as polluted by drainage.

In another room at the same gallery are oil paintings by Mr. Walter Donne, illustrating "Sunshine and Shadow in France," and "Cornish Seas" by Mr. Julius Olsson. Mr. Olsson's style in sea-painting has been familiar in our exhibitions for a long time; they are always good, with a certain degree of mannerism, but never reaching to the most impressive character in sea-painting, nor do we see why these particular examples are "Cornish" any more than others of his works. There is fine composition and effect in some of Mr. Donne's French landscapes.

Institute of Oil-Painters.

The large collection on the walls includes, as usual, a good many agreeable paintings which do not rise much above mediocrity, with a few fine works here and there. Mr. Wetherbee's "With Amaryllis in the Shade" is a charming idyll of the kind he has familiarised us with; and Mr. Yeend King's small picture "The Brook," next to it, is one of the best landscapes by him that we have seen. There are two fine and powerful portraits by Sir George Reid and Sir James Guthrie; and Mr. Kennington's "The Two Paths," a study of expression in the heads of three girls, is of real interest. Garrido's "Lady with the Gloves" is clever enough, but the very word "lady" is a mockery in connexion with such piece of vulgarity. Mr. John Collier's "Autocrat of the Breakfast-table," good and sound painting, has no interest commensurate with its size and the trouble bestowed on it. Mr. Glyn Philpot's "A Pianist," presumably a portrait, has original character. Among smaller things two small studies of figures by Mr. Van Someren are very clever; and Mr. Allan Davidson's two little nudes are most satisfactory, "The Snake-charmer" especially. Among landscapes not to be passed over are Mr. Harold Knight's "Mount's Bay"; Mr. Montague Smyth's small moonlight study, "Watering the Flock"; Mr. Cotman's very fine and successful "Rainbow—Hemingford Grey"; Mr. Leslie Thompson's "Near Southwold," a fine work on a large scale and in his best style; and Mr. Frank Walton's "An Old Surrey Farm," in which the principal subject is really the elaborate painting of a foreground tree. An equestrian statuette in the first room—"For the Right," by Mr. Gilbert Bayes, is one of the best things in the Exhibition, a fine piece of symbolism in sculpture, mounted on an original and well-designed pedestal.

The Leicester Galleries.

At these Galleries there are two remarkable collections of artistic work of a highly original kind. In one room is a set of pictures and drawings by Mr. Strang, of which the largest and most finished, "The Love-Song," is a good example of what might be called this painter's Titianesque manner; but some of the smaller studies are more interesting; we may mention especially the two figure-studies in gold-point, and the masterly little washed sketch, "Silenus" (No. 5 in Catalogue); the best thing among the set.

In the inner room are a number of M. Dulac's fanciful and imaginative illustrations to "Omar Khayyám"; an entirely conventional kind of art, but quite suited to the Oriental character of the poem, and full of charming fancies and beautiful colour. Mr. Lee Hankey's water-colour illustrations to "The Deserted Village" are good, but can hardly be classed with the other exhibits; they belong to a more everyday type of art.

Society of British Artists.

This Exhibition contains some works of more interest and importance than we have been accustomed to find there. Mr. Palin's large classicism, "Nymphs and Cupids," is a good picture of its kind, both in design and colour; and Mr. Walter Fowler has achieved, in "Overlooking an Estuary," a really fine and powerful landscape. Among other landscapes worth attention are Mr. Gardner Symons's "Winter Sun," Mr. Murray Smith's curiously old-fashioned bit of work "The Bridge," and Mr. Sheard's "The Rising Harvest Moon." Mr. Robert Morley has a good life-size study of a lion in the second room. As usual at these exhibitions, the general level of the water-colours is higher than that of the oil-paintings.

NON-PROVISION OF QUANTITIES BY BUILDING OWNERS.

A conference, convened by the President of the Quantity Surveyors' Association, to consider the question of the non-provision of quantities by building owners when inviting tenders from contractors, was held at the Holborn Restaurant on the 13th inst., at which the following were present:—

Messrs. W. F. Wallis, W. Shepherd, E. J. Strange, and J. Randall, representing the Institute of Builders; Messrs. E. J. Brown (London), S. Smethurst, J.P. (Oldham), J. Wright (Nottingham), J. W. White (Sunderland), W. Thomas (Cardiff), F. Higgs (London), and A. G. White (Secretary), representing the National Federation of Building Trades Employers; Messrs. F. C. Rice, F. May, J.P., B. I. Greenwood, and G. Bird Godson, representing the London Master Builders' Association; Messrs. H. T. A. Chidgey (President), Walter Lawrance, F.S.I., A. J. Gate, F.S.I., S. Chatfeild Clarke, F.S.I., T. E. Bare, T. J. Carless, H. Raven, H. Riley, S. A. Stanger, F.S.I., S. G. Thacker E. Ware (Liverpool), and A. G. Cross, F.S.I., (Honorary Secretary), representing the Quantity Surveyors' Association.

A very interesting and exhaustive discussion ensued, in the course of which the methods adopted by the Northern branches of the National Federation for dealing with this grievance were fully explained and met with much approbation.

Messrs. Brown, Wallis, Rice, Smethurst, White, Wright, Shepherd, May, Randall, Lawrance, Chatfeild Clarke, Higgs, Godson, Greenwood, Gate, Carless, and others took part in the debate, which lasted for upwards of two hours, and the following resolutions were unanimously passed:—

(1) That the Conference disapproves of the practice of asking for tenders in competition for works of a substantial value without quantities, prepared by a fully-qualified quantity surveyor, being supplied, and is of opinion that such quantities should be supplied in all cases when competitive

Digitized by Google

estimates are invited for works expected to cost 500*l.* and upwards.

(2) That the Conference recommends the Councils of the Institute of Builders, the London Master Builders' Association, and of the National Federation of Building Trades Employers to urge their members to refuse to tender in competition without quantities for works costing 500*l.* and upwards.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Hammersmith Borough Council 35,000*l.* for street improvements; Shoreditch Borough Council 4,110*l.* for electric lighting; and Stepney Borough Council 12,000*l.* for electric lighting. Sanction was given to Wandsworth Borough Council to borrow 1,130*l.* for contribution to street improvement, and to Chelsea Borough Council 22,500*l.* for extension of offices.

Remuneration of Quantity Surveyors.—It was agreed:—

That Mr. H. H. Robinson, quantity surveyor, be allowed 2 per cent. in respect of the "works to existing buildings" bill (1,320*l.* 2s.) in the quantities for the enlargement of the Essendine-road school (Paddington, N.).

That Mr. C. W. Brooks, quantity surveyor, be allowed 2 per cent. on 2,000*l.* of the amount of the "works to existing buildings" bill (2,049*l.* 10s. 3d.) in the quantities for the enlargement of Queen's Head-street school (Islington, S.).

That Mr. C. W. Brooks, quantity surveyor, be allows 2½ per cent. in respect of the "works to existing buildings" bill (493*l.* 11s. 8d.), and the exterior painting bill (71*l.*) in the quantities for the enlargement of the "Maryon-park" school (Woolwich).

Working-class Dwellings Demolished and Built during the Year 1908.—The Housing of the Working Classes Committee submitted a return which has been prepared showing the net addition to working-class accommodation provided in the County of London and in the adjacent districts during the year 1908. The returns for 1906, 1907, and 1908 deal with a larger area than the returns prepared for previous years, thirteen additional urban districts having been included, of which the principal are Barking Town, Enfield, Hanwell, Heston and Isleworth, Ilford, Southall-Norwood, and Southgate. The return also shows the number of rooms and tenements contained in the houses, as well as the average weekly rents charged per tenement and per room. One common lodging-house containing fifty-two beds was demolished during the year. The net addition to the number of rooms in the whole area in the years 1906 and 1907 was 52,755 and 40,017, as compared with 28,241 in 1908. The figures show that the diminution in the rate at which working-class accommodation is increasing has become more marked during 1908, the net addition for the year, both in the County of London and in the extra-London districts, being less than in any year since 1902, when this record was first obtained. In the County of London the net addition to the number of working-class rooms amounted to only 6,426 in 1908, as compared with 21,475 in 1903. In London, north of the Thames, only 382 rooms were added during 1908, for while a considerable amount of accommodation was provided in Fulham, Hammersmith, and Holborn, this was to a great extent counterbalanced by demolitions in St. Marylebone, St. Pancras, and Stepney. South of the river a considerable amount of building is still proceeding in the outlying districts of Wandsworth, Lewisham, Greenwich, and Woolwich. No dwellings for the working classes were provided during the year in the City of London or in the Metropolitan Boroughs of Hampstead, Paddington, and Stoke Newington. Of the 38,582 rooms provided during the year, 858 have been provided by the Council and 216 by other local authorities. Comparing the figures for the smaller area dealt with in the earlier years, the most striking feature is the falling off in the accommodation provided in the eastern and south-eastern sections. In the eastern section the number of rooms provided in 1908 was only 4,875, as compared with 15,716 in 1902, while in the south-eastern section 3,820 rooms were provided in 1908 and 8,627 in 1902. In considering whether the number of working-class houses is adequate to provide for the increase in population, it should be borne in mind that there is at the present time a large surplus of middle-class houses, many of which will doubtless in course of time be made available for occupation by persons of the working class. The rents charged for the new accommodation indicate practically no change from the rents ruling in 1907. For the central area the average weekly rent per room is 3s. 1½d., for the rest of London 2s. 7d., and for the surrounding districts 2s. 2½d.

Theatres, etc.—The following proposals have been agreed to:—

Drawings, submitted by Mr. B. Crewe, showing alterations proposed to be made at the Balham Empire, 75, Balham High-road.

A drawing, submitted by Mr. B. Crewe, on behalf of the Bijou Theatre, Camberwell, Ltd., of premises in Orpheus-street, Camberwell, which it is proposed to convert into a cinematograph hall. The hall will have accommodation for about 620 persons.

Drawings, submitted by Messrs. Charles Heathcote & Sons, of a skating-rink proposed to be erected adjoining Bradmore House, Queen-street and Great Church-lane, Hammersmith.

A drawing, submitted by Mr. F. J. Humphrey, showing a proposal to construct in the stage basement at the Camberwell Palace of Varieties, Denmark-hill, a chamber to accommodate two motor converters for the arc lamps.

Drawings, submitted by Mr. A. W. Hudson, on behalf of a Mr. B. J. Jackson, of a skating-rink proposed to be erected at the south-east corner of Church-street and King's-road, Chelsea.

Drawings, submitted by Messrs. Norfolk & Prior, of Hamilton Hall, South-road, Forest Hill, which is approaching completion. The hall will have accommodation for about 240 persons.

Proposals for the construction of blocks of offices above the halls at the Holborn Hall, Gray's Inn-road; for the adaptation of portions of the premises below the halls as a bank and a restaurant, etc. (Messrs. F. W. Dixon & Sons).

Drawings, submitted by Messrs. F. Matcham & Co., of a cinematograph hall to be erected at the corner of Church-passage, Camberwell New-road, and to be known as the New Grand Hall. The hall will have accommodation for about 1,250 persons.

Drawings, submitted by Messrs. Fair & Myer, of a skating-rink proposed to be erected on the site of Nos. 137-147, Lower Clapton-road, and to be known as the Premier Rink. It is estimated that the rink will accommodate about 1,380 persons, including about 1,000 skaters.

A proposal to adapt, for use as a concert hall, premises in John-street and Durham House-street, Adelphi, which were formerly a portion of Coutts' Bank premises (Messrs. Hayward & Maynard).

Drawings, submitted by Mr. R. A. Mansell, of a music-hall proposed to be erected at the junction of Battersea Park-road and Beechmore-road, Battersea. The premises will have accommodation for about 2,064 persons.

Drawings, submitted by Messrs. Wylson & Long, showing certain alterations proposed to be made at the Royal Adelaide Galleries, Strand, including the formation of a new restaurant on the first floor.

A drawing, submitted by Messrs. William Woodward & Sons, of the ground floor of premises in course of erection at Nos. 71-3, St. James's-street, and Nos. 1-6, Little St. James's-street, and to be used as a restaurant by Messrs. Rumpelmayer.

A drawing, submitted by Mr. B. Crewe, showing a proposal to construct a cinematograph chamber by enclosing a portion of a lavatory at the circle level at the Sadler's Wells Theatre, Rosebery-avenue.

Drawings, submitted by Mr. J. B. Roberts and Mr. E. E. Bird, of the South London Skating Rink, Varden's-road, St. John's-hill, Battersea, which will accommodate about 550 persons skating.

A drawing, submitted by the Rev. E. S. B. Whitfield, of St. Luke's Parish Hall, Gosterwood-street, Deptford. The hall has accommodation for about 480 persons.

Drawings, submitted by the Secretary, the Temperance Billiard Halls, Ltd., of the Temperance Billiard Hall proposed to be erected at the corner of High-street and Court Hill-road, Lewisham. The premises will consist of a billiard-room, café, and café lounge.

Drawings, submitted by the Town Clerk, Metropolitan Borough of Wandsworth, showing certain alterations proposed to be made to the Wandsworth Public Baths, High-street, Wandsworth.

Fleet-street Widening.—The Council is recommended by the Improvements Committee to contribute 200,000*l.* towards the cost of the further widening of Fleet-street. The Finance Committee, commenting upon the proposal, points out that payment of the contribution will be spread over the period 1910-14, but it is remarked that the capital commitments of the Council in respect of street improvements now amount to 2,045,000*l.*, while powers now sought from Parliament will, if granted, increase the amount by 187,000*l.*

Reconstruction of Highgate-hill Tramways.—Mr. Johnson, in moving that the recommendation of the Highways Committee be referred back, condemned the agreement made with Mr. Coles as to giving preference in employment on casual or unskilled labour to men *bonâ fide* resident in the locality of the work. He could understand the cry London work for London men, but he entirely objected to local work for local men as too exclusive. With respect to the matter of the withdrawal of tenders, he warned the Council that they were seriously threatened with being "jockeyed" in their contracting by having thrown away the only weapon that would save them from such a fate—the Works Department.

Mr. Gilbert seconded the amendment.

Mr. Shirley Benn, Chairman of the Committee, said the reason why Mr. Coles's tender was accepted was because it was the lowest. As to the clause with respect to local labour, it was inserted because some of the work was not in the County of London, but in the County of Middlesex. With respect to the withdrawal of Mr. Maunders's tender, he could only say that after inquiry they were quite satisfied he was justified in asking to withdraw.

The amendment was negatived by a large majority, and the recommendation agreed to.

The list of tenders for the work was given in our last issue.

Improvements.—It was agreed that the estimate of expenditure on capital account of 11,150*l.*, submitted by the Finance Committee in respect of the proposed construction by the Hammersmith Metropolitan Borough Council of a new road from Wood-lane to Latimer-road, in accordance with the plan, be approved.

That expenditure on capital account not exceeding 395*l.* in connexion with the purchase from the trustees of Zoar Chapel of their interest in land needed for widening and straightening Great Alie-street, be authorised.

The Council, having transacted other business, adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Fulham.—Bay windows and projecting balconies in front of six maisonettes on the eastern side of Kelvedon-road, Fulham (Mr. A. Lloyd Lawrence for Mr. A. Capes).—Consent.

Hackney, Central.—A shop front at No. 149, Lower Clapton-road, Hackney (Mr. G. Stapley for Messrs. Barrett & Power).—Consent.

Hackney, Central. — Buildings on the southern side of Darnley-road, Hackney (Mr. H. W. Rowlandson).—Consent.

Kensington, North.—Enclosures to the forecourt areas in front of Nos. 43A and 45A, Lancaster-road, Notting-hill (Mr. A. Graham for Mr. J. F. Gems).—Refused.

Kensington, South.†—A bay window in front of No. 67, Victoria-road, Kensington (Messrs. C. Saunders & Son on behalf of Mr. J. H. Lindsay).—Consent.

Lewisham.—Porches, bay windows, and oriels to houses on the eastern and western sides of Thornsbeach-road, Catford (Mr. W. A. Vercoe for Mr. T. A. Boughton).—Consent.

Marylebone, East.—A building on the northern side of Outer Circle, Regent's-park, St. Marylebone (Mr. J. Belcher, R.A., for the Zoological Society of London).—Consent.

Marylebone, East.—A balcony in front of the Radium Institute, Nos. 16 and 17, Riding House-street, St. Marylebone (Mr. T. P. Figgis for the Council of the Institute).—Consent.

Paddington, South.—An entrance doorway at No. 36, Westbourne-gardens, Paddington (Messrs. G. W. Higgins & Co. for the Dowager Lady Forbes).—Consent.

Strand.†—An illuminated sign on the iron and glass shelter at the Exeter-street entrance to the Strand Palace Hotel, Strand (Mr. W. J. Ancell for the Strand Palace Hotel).—Refused.

Wandsworth.—A house, with a projecting hood over the doorway, on the northern side of Church-lane, Tooting, to abut also upon the eastern side of Lucien-road (Mr. H. H. Foster for Messrs. Cox & Bissell).—Consent.

Wandsworth.—Projecting porches, bay and oriel windows, barge boards and half-timber work, to ten houses on the northern side, and ten houses on the southern side of Hilldown-road, Streatham, and also the erection of the party walls between the bay windows

Digitized by Google

(Messrs. H. Wakeford & Sons for Messrs. F. C. Trafford & Son).—Consent.

Wandsworth.—A building on the southern side of Upper Richmond-road, Wandsworth, to abut upon the eastern side of Rochampton-lane (Mr. H. G. Leslie).—Consent.

Wandsworth.—Buildings on the eastern side of Streatham High-road, Streatham, to abut also upon the northern side of Sunnyhill-road (Mr. F. Bethell).—Consent.

Wandsworth.—Projecting porches and bay and oriel windows to seventeen houses on the north-western side of Gracedale-road, Streatham (Messrs. Antill & Squires).—Consent.

Width of Way.

St. Pancras, East.—An out-patients' department to the Hampstead General Hospital, to abut upon Bayham-street, Hamilton-street, and Greenland-place, Camden Town, and to be at less than the prescribed distance from the centre of the roadway of Greenland-place (Messrs. Young & Hall for the Council of the Hospital).—Consent.

Width of Way and Lines of Frontage.

Bethnal Green, North-East.—A building on the eastern side of Ashwell-road, Bethnal Green, at less than the prescribed distance from the centre of the roadway of the street (Messrs. Taylor Brothers for Messrs. A. & G. Malins).—Consent.

Brixton.†—A one-story shop in front of No. 420, Coldharbour-lane, Brixton (Mr. W. Falkner for Mr. A. T. Roantree).—Consent.

Hammersmith.—A superstructure over the Shepherd's Bush Tube railway-station on the northern side of Uxbridge-road, Hammersmith, abutting also upon the eastern side of Providence-place (Messrs. Vigers & Co. for the Central London Railway Company).—Refused.

Hampstead.—Two houses on the eastern side of Fitzjohn's-avenue, Hampstead (Mr. S. C. Lathbridge for Mr. J. Russell).—Refused.

Lines of Frontage and Construction.

Westminster.†—The retention of a wood and iron shed of a temporary character at the premises of Messrs. J. I. Thornycroft & Co., Ltd., on the southern side of Vauxhall Bridge-road, Westminster (Messrs. J. I. Thornycroft & Co., Ltd.).—Consent.

Width of Way and Construction.

Camberwell, North.—An iron and steel shed at the rear of No. 561, Old Kent-road, Camberwell, at less than the prescribed distance from the centre of the roadway of Lovegrove-street, and without a layer of concrete over the site (Mr. W. Harbrow for Messrs. J. Liversidge & Son).—Consent.

Line of Frontage, Cubical Extent, and Uniting of Buildings.

St. George, Hanover-square.—A building to abut upon Grosvenor-road, Caledonia-street, and Glasgow-terrace, St. George, Hanover-square (Messrs. Clayton & Black for the British Motor Cab Company).—Consent.

Space at Rear.

Lewisham.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed re-erection of a back addition at the Plough and Harrow public-house, No. 68, Rushey-green, Catford (Mr. G. A. Lansdown for the New Westminster Brewery Company).—Consent.

Norwood.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building on the eastern side of Lyham-road, Norwood, immediately northward of the Ironmongers' Arms public-house, with an irregular open space at the rear (Messrs. Taylor & Sons for Mr. R. H. Miller).—Consent.

Deviation from Certified Plans.

Strand.—A further deviation from the plans approved for the erection of a building on the site of Nos. 71, 72, and 73, St. James's-street, and Nos. 1, 2, 3, 4, 5, and 6, Little St. James's-street, Strand, so far as relates to (i.) the adaptation of the ground and basement floors for one occupation instead of three, and (ii.) the provision on the ground and basement floors of lavatory and office accommodation, projecting into the open spaces (Messrs. W. Woodward & Sons).—Consent.

Westminster.—Deviations from the plan certified by the District Surveyor, so far as relates to the proposed re-erection of Nos. 16 and 18, Old Queen-street, Westminster (Messrs. Slade & Bousfield).—Consent.

Whitechapel.—Certain deviations from the plan certified, so far as relates to the proposed re-erection of a stable and cottage building on the south-western side of Size-yard, Whitechapel-road, Whitechapel (Mr. A. E. Pridmore for Messrs. Perrott & Co.).—Consent.

Formation of Streets.

Wandsworth.—A deviation from the plans approved for the formation or laying out of two new streets for carriage traffic out of the southern side of Southcroft-road, and a new street for carriage traffic out of the eastern side of Mitcham-road, Tooting, so far as relates to the alteration in the gradient of one of the streets out of the southern side of Southcroft-road (Messrs. Tweed, Stephen, & Co.).—Consent.

Alteration of Building.

City of London.—A modification of the provisions of sect. 70 (1) of the Act, so far as relates to the height of a bedroom at No. 152, Minories, City (Messrs. Gordon & Gunton).—Consent.

Uniting of Buildings.

City of London.—Two division walls of less thickness than required by the rules of the London Building Act, 1894, in a building erected on the site of Nos. 10 and 11, Old Bailey, City, and the old Session House (Mr. P. Hoffmann).—Consent.

City of London.—Formation of additional openings in the division walls on the ground and first floors of No. 22, Golden-lane, City (Messrs. J. Hamilton & Son for Messrs. Sutton & Co.).—Consent.

St. George, Hanover-square.—A deviation from the plans approved for the uniting of Nos. 15 and 16, Hanover-square, so far as relates to the erection of two additional stories to No. 16, Hanover-square (Mr. J. Belcher, R.A.).—Consent.

Dwelling-houses on Low-lying Land.

Rotherhithe.—That a licence be granted to Mr. A. E. Cast for the erection of a shop and two dwelling-houses at the corner of Albion-street and Swan-lane, Rotherhithe.—Consent.

The recommendations marked † are contrary to the views of the local authorities concerned.

Archæological Societies.

NEWCASTLE SOCIETY OF ANTIQUARIES.

On Saturday, the 9th inst., the Newcastle Society of Antiquaries paid a visit to Gilsland to view excavations which have been carried out there by Mr. J. P. Gibson and Mr. Gerald Simpson, two of the Society's members. Examinations on the same site were made some years ago, with but little result, but taking a new point of departure the present excavations have had more success, the most interesting find being the site of an old mile castle on the line of the Roman wall close to the well-known railway loop. The value of the find lies largely in the great amount of Roman masonry discovered, part of the walls rising to a height of ten courses. The building appears to have been considerably larger than the well-known castle at Housesteads, and had gateways to the north and south. The sides of the north gateway are in a very good state of preservation, rising to 6 ft. and 7 ft. on either side. This gateway, in the later period of the occupation, appears to have been closed for half its width. Portions have been found of a flight of stairs leading to the ramparts, and there are traces of a complete set of interior buildings, such as have been found nowhere else. The walls of the castle are 9½ ft. thick, and those of the interior building 2 ft. thick. One face of the north wall of the castle rises to 9 ft. in height. The chief smaller finds are three Roman coins, all of different Emperors.

"BUILDER" COMPETITION FOR NEW FAÇADE TO No. 9, CONDUIT-STREET.

ANSWERS TO QUESTIONS.

THE following are the questions we have received in reference to this competition, with the answers to them.

Two or three correspondents have asked practically the same question in slightly different wording; in that case only one of the questions has been inserted, as the repetitions are unnecessary:—

Questions.	*Answers.*
1. Is the frontage shown from centre to centre of party wall, or are they independent walls?	1. They appear to be independent walls; at all events they can be treated as such. The exterior dotted lines mark the width of the frontage.
2. What is the greatest projection allowed in front of the building line?	2. None; except as to cornices and string-courses, and projections as allowed by sect. 73 of the London Building Act.
3. May any floor space be taken off the rooms to enable one to design the front with recessed [word omitted]?	3. We will assume that the wall may be thickened internally by 9 in.—*i.e.*, taking 9 in. off existing floor space.
4. Would it not be permissible to allow to break back from the building above ground floor not more than say 1 ft. if required?	4. No: that means carrying the inner part of upper wall on a girder, which is not honest building. But see answer No. 3.
5. Can walls be thickened in certain places to help the artistic treatment of design?	5. Not externally; that would transgress the building line. See answer No. 3.
6. Does hall depend entirely on fanlight over entrance, for its light?	6. Yes, except for borrowed lights through doors. We are assuming that the internal plan remains unaltered.
7. The topmost story scales 7 ft. 6 in. from floor to ceiling; should this be increased to 8 ft. 6 in. in conformity with London Building Act (1894), sect. 70, 1, *a*?	7. Yes: or better 9 ft.
8. Should the windows be made to conform with sect. 70, 1, *c*, viz.: The opening being 7 ft. in height from the floor?	8. As a minimum height—yes.
9. Would any projection such as a portico, bay, or oriel be countenanced?	9. There is not to be a portico, or any other projection on the ground story. Above that projecting oriels may be introduced, as also balconies, subject to sect. 73 (subsects. 2 and 6) of the London Building Act.
10. It is stated that "sculpture in bas-relief may be employed." Does this imply that no sculpture standing free from the wall may be employed?	10. Bas-relief was mentioned because it did not appear that sculpture in the round could be well introduced without considerably increasing the thickness of the wall. But sculpture in the round can be introduced at the apex of the building, or in niches if they are practicable under the conditions.
11. May the drawings be sent in mounted on card, instead of strainers?	11. Mounted any way in which they will be stiff; the only point is that they should not be rolled or on loose sheets of paper.

N.B.—Attention is drawn again to the direction that the envelope containing name and address should be *attached* to the strainer, not merely packed loose with it. Some trouble was caused in our last competition by two or three envelopes dropping out of the packages, so that they could not be certainly identified with the accompanying drawing.

We may remind intending competitors that the full instructions for the competition are to be found (as stated in our advertisement under "Competitions") in the *Builder* of October 2, pages 362-363.

Digitized by Google

THE BUILDER

OCTOBER 23, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, OCTOBER 22.

The Architectural Association.—Mr. F. D. Clapham on "The Architectural Association Excursion to Cheltenham and District, 1909." 7.30 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. L. Watson on "The Autobiography of a Cathedral." 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "Calculation, Measurements, and Plans and Sections." 7 p.m.

SATURDAY, OCTOBER 23.

Junior Institution of Engineers (Caxton Hall, Westminster).—Conversazione. 7 p.m.

MONDAY, OCTOBER 25.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. H. D. Searles Wood on "Building Materials." 7 p.m.

TUESDAY, OCTOBER 26.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. H. D. Searles Wood on "Sanitary Building Construction (advanced)." 7 p.m.

Institute of Sanitary Engineers, Ltd. (Students' Lecture).—Mr. R. Horton on "Details of Plumbers' Work and Sanitary Appliances." 7 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture by Mr. Banister Fletcher. IV.—"Babylonian and Assyrian Temples and Palaces." 4.30 p.m.

WEDNESDAY, OCTOBER 27.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. H. D. Searles Wood on "Sanitary Building Construction and Planning: Soil and Local Physical Conditions." 7 p.m.

THURSDAY, OCTOBER 28.

Carpenters' Company, London-wall (Lectures on Sanitary Building Construction).—Mr. C. E. Varndell on "Fire-Resisting Materials." 7.30 p.m.

FRIDAY, OCTOBER 29.

Architectural Association Debating Society.—Mr. Halsey Ricardo to move "That External Colour Decoration is Necessary to the Completion of Town Architecture." 7.15 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "Sanitary Appliances." 7 p.m.

The Institution of Mechanical Engineers.—An extra meeting, when the discussion will be resumed on Professor W. E. Dalby's Report on "Heat Transmission." 8 p.m.

Fifty Years Ago.

FROM THE *Builder* OF OCTOBER 22, 1859.

"ARCHITECT AND BRICKLAYER."

A CORRESPONDENT obligingly sends us, from Hull, the circular of one who calls himself "Architect, Valuer, and Builder," and denies the truth of the report that he has given up the "bricklaying department." Our correspondent sends it, he says, "to show what the practice of architecture has come to in the country." The circular ends thus:—

"By employing T. to do the work, you save the expenses of engaging an architect, as he will make plans and give instructions without charge, and allow a liberal discount for cash."

Some greater men than "T." do exactly what he is doing; and we have such a strong feeling in favour of freedom of labour, that we must even allow them quietly to take their own way, and leave the public to follow that course which they may discover to be the best. It should be the aim of architects to make this strikingly obvious.

*** The then Editor's comment on the quotation is remarkable for its liberality of view. And in the present day there are certainly those who would think very well of any one who combined the acquirements of architect and bricklayer—provided he were really competent in both capacities.—ED.

Illustrations.

A DESIGN FOR THE GLAMORGAN COUNTY HALL.

THIS illustration is taken from a ½-in. detail recently submitted in the above competition. The design was mentioned fourth in the Assessor's report.

The stonework was to be executed in Portland stone to match the adjoining Law Courts and City Hall, and the gates and lamps to be carried out in bronze. The drawing was hung in this year's Royal Academy Exhibition.

The authors are Messrs. Warwick & Hall.

STEPNEY AND BOW FOUNDATION, COOPERS' COMPANY'S SCHOOL.

THIS school, for many years controlled by the Coopers' Company, was founded in the year 1538 by Nicholas Gibson, citizen and grocer. The new school occupies the site of the old buildings, the greater part of which were erected some forty years ago, and the necessity of carrying on the work of the school, without interruption, during the erection of the new buildings, was an influential factor in the arrangement of the plan. The accommodation is for 510 boys.

The general entrance for the boys is through the stone screen fronting the quadrangle, and from thence to senior and junior entrances leading directly from the covered ways adjoining the cloak-rooms, corridors being thus avoided.

The principal entrance is in College-street, in the administration department, giving direct access to a waiting-room, headmaster's-room, and assistant masters'-rooms, etc.; and also the main hall, which is 87 ft. by 47 ft., surrounded by twenty classrooms on two floors, and lighted by large clearstory windows over the flats.

The ceiling of the hall is cross-vaulted in plaster, the space above being utilised for the ventilation system, which is so arranged that each classroom is under separate control.

Every classroom is provided with left-hand light.

The art department is placed over the western cloak-room, and includes a top-lighted room, 43 ft. by 24 ft. The corresponding position in the east wing is occupied by the gymnasium, a room 74 ft. by 24 ft., with changing room, shower baths, and spectators' gallery attached.

The former science block, which was of more recent date than the old buildings, has been remodelled and extended, to incorporate it with the new structure, and now contains chemical and physical laboratories, each accommodating twenty-four boys; balance-room, optical-room, and two large lecture-rooms, each with seats for forty boys.

On the opposite side of the quadrangle, balancing the science school, is the dining hall block, also containing the work shop, which provides space for twenty-four benches. The dining hall accommodates 100 boys, and is 52 ft. by 24 ft., with panelled walls, and vaulted and panelled plaster ceiling. This block includes the necessary kitchen department, with maid's-room, porter's residence, and "tuck shop."

The materials used are Wrotham red bricks of varying tone, with Portland stone dressings, and green Buttermere slates for the roofs. The entire buildings are of fireproof character.

The new schools are heated throughout with an atmospheric steam system installed by Messrs. Wontner Smith, Gray & Co. The electric lighting has been done by Messrs. W. J. Fryer & Co. The carving is the work of Mr. E. Whitney Smith, from designs furnished by the architects. The constructional steel, etc., has been provided by Messrs. A. Dawnay & Sons.

The general contractors were Messrs. Jas. Smith & Sons, Ltd., of South Norwood, who have executed the work under the superintendence of the joint architects, Mr. T. P. Figgis and Mr. Alan E. Munby, whose design was placed first in the competition instituted by the Governors.

HOUSE AT IVER, BUCKS.

THE house stands in a small park of about 30 acres.

The walls are of yellow Cowley stock bricks; the quoins, plinth, apron, etc., are of Langley red bricks, both being local.

The plan of the house is symmetrical, one of the objects aimed at inside being to obtain vistas.

The builder was Mr. G. H. Gibson, High Wycombe, Bucks. F. M. SIMPSON.

DESIGN FOR PRESENTATION TROWEL AND BAG.

THIS is a design for a Presentation Trowel, such as is frequently made for the ceremonial laying of a foundation stone, and a decorative bag to contain it. The work is by Mr. S. Paul, a student of the Leeds School of Art, and received a Gold Medal in the last National Art-Schools Competition.

It is intended to be in wrought and chiselled steel, the blade being damascened with gold and silver. The leather case is ornamented with chiselled steel mountings.

It is always a gratification to see individual artistic work expended on a ceremonial object of this kind, which too often represents only commercial work.

Architectural Societies.

THE ARCHITECTURAL ASSOCIATION DEBATING SOCIETY.

The second meeting of the session was held at 18, Tufton-street, on Friday, October 15, Mr. A. H. Belcher in the chair. Mr. E. Greenop opened a debate upon the Royal Institute of British Architects' Conditions of Contract. He commented upon each of the conditions and spoke of recent legal decisions. A vote of thanks was moved by Mr. Pechell and seconded by Mr. A. E. Bullock. Other speakers were Messrs. W. H. White, T. Gregg, Louis Jacob, and the Chairman. The next meeting will be held on Friday, October 29, at 7.15, when Mr. Halsey Ricardo will move "That External Colour Decoration is Necessary to the Completion of Town Architecture."

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

At the opening meeting of the session, on the 14th inst., the President, Mr. W. J. Hale, delivered an address, in which, after pointing out that one great reason of unsatisfactory architecture in the present was the speed with which it was turned out, he proceeded to refer to the recent alterations in the Charter and by-laws of the Royal Institute of British Architects, the most important being the establishment of a new class of members to be known as Licentiates.

Digitized by Google

This was an attempt by the Institute to include within its borders all men over thirty years of age who might fairly claim to be pursuing architecture as a livelihood. The attempt might or might not be successful, but sooner or later there must be registration, and this must, in fairness, include all who were in practice as architects at the time the Bill was passed. Registration, of necessity, implied examination, and this Mr. Hale thought desirable. The President also referred to the Law of Artistic Copyright, into which a Committee of the House of Commons had been inquiring. As a result of this inquiry he hoped the law might be brought into conformity with the revised Convention of Berne, signed at Berlin last November. The question was one affecting the whole profession, for nothing was more unjust to an architect who had given thought and care to the production of a building than to find an obvious attempt at reproduction, with the details murdered through lack of knowledge. As to the Town Planning and other Bills now before Parliament, all would agree that some sort of Housing and Town Planning Act was necessary; but he thought that, so far as Sheffield was concerned, no stimulus was needed to quicken the erection of house property; it seemed almost that restraint rather than stimulus was required. The President referred in conclusion to the Department of Architecture, the promotion of which was probably the most important step ever taken by the Society. He asked for the earnest and continued support of members, and suggested that a practical way in which this support might be shown would be for practising members to refuse to take a pupil unless he were prepared to go through the University courses.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

The October Council meeting of this Institute was held at 31, South Frederick-street, Dublin, on October 4. Mr. F. Batchelor, President, occupied the chair. An exceedingly heavy correspondence was dealt with and nominations for a new Hon. Secretary and Hon. Treasurer for the ensuing three years were made. Some financial business having been transacted, the proceedings terminated.

ARCHITECTURAL ASSOCIATION OF IRELAND.

The twelfth annual Report of the Committee for the session 1908-1909 states that the session has been, in some ways, one of exceptional interest, but the Committee regret to report a decrease in membership, which now stands at ninety-four. They also deeply regret having to record the sudden demise of one of their most promising members, Mr. F. H. Tallan, and also that of Mr. J. W. Gardner, a member of the Association since 1896. The Committee this session adopted a new method of carrying on its work for the purpose of relieving the Hon. Secretaries of some of their labours, which heretofore proved to be very onerous. The system adopted was that of arranging the routine work of the General Committee under various heads, and having it carried on by Sub-Committees—entitled "Programme," "By-laws," "Museum," "Press," and "Publication"—all of whose recommendations were subject to the approval of the General Committee before being put into execution. Twelve General Meetings were held during the session—a novel feature being introduced in the form of discussions by the members of set subjects of architectural and artistic interest, an experiment which proved very successful.

MR. SEWARD AND THE CARDIFF CORPORATION.—At a special meeting of the Cardiff City Council on the 11th inst., the Town Clerk stated that a writ had been served on the Corporation on behalf of Mr. Edward Seward in respect of his claim against the Corporation for architectural services. After a discussion the matter was referred to the Museum Committee to decide upon the course of action to be taken.

Legal Column.

WORKMEN'S COMPENSATION.

A CASE under the Workmen's Compensation Act, 1897, Upper Forest and Western Steel and Tinplate Company, Ltd., *v.* Thomas (*Law Reports*, September), may briefly be noted, as it also has application to the new Act. On March 15, 1907, a workman sustained an injury, and his employers by agreement paid him weekly compensation until December 27, when the payments were stopped. On January 7, 1908, the doctor at the works certified the man as fit to follow his employment. Again on May 26 the man submitted himself to examination by a doctor named by the employers, and he was certified as not at that date suffering from incapacity. On June 26, 1909, the man, however, applied to register a memorandum of the agreement made to pay him compensation in April, 1907; the judge acceded to the application, but ordered a stay of execution to enable the employers to apply for a review. The employers filed the request for a review on September 11, 1908, and at the hearing the judge suspended the payments as from January 7, 1908. The Court of Appeal have held that, as the application to review did not specifically raise the point as to the man's incapacity having ceased before the application to review was filed, the arbitrator could only make the order as from the date of the application, *i.e.*, September 11, and the point was left undecided whether, had the application been in another form, the arbitrator would have had power to antedate his order; but in a subsequent case, Charing Cross, Euston, and Hampstead Railway *v.* Boots, under the Act of 1906, the Court of Appeal has expressed the opinion that where the question is specifically raised the arbitrator would have power to decide when incapacity actually ceased. The case seems to apply to the new Act, unless either party has availed himself of the provisions which enable the question to be referred to a medical referee, but it also calls attention to a point in which it would seem that the new Act could be improved. The registration of memoranda is there more specifically dealt with in Paragraph 9 of the second schedule, and amongst other things it is provided that, if the employer proves that the workman "has in fact returned to work and is earning the same wages as he did before the accident," the judge shall have a discretion as to registering the memorandum. It would appear that this provision could be extended by permitting the employer at that stage to prove that incapacity had ceased, whether the man had returned to work or not, as this would save the litigation involved in the case under consideration by a workman who was fit to follow his employment registering a memorandum of agreement no longer of practical application. The registration of agreements might as an alternative be made compulsory within a certain time limit in all cases.

WATER SUPPLY.

An important question has recently come before the Chancery Division for decision in the case South Suburban Gas Company *v.* Metropolitan Water Board. The plaintiffs, who carry on the business of manufacturing gas and supplying it to certain districts, have their business premises within the defendant Board's limits of supply. On these premises some 400 persons are engaged, and under the provisions of the Factory Acts the plaintiffs are compelled to supply them with sanitary conveniences, drinking water, etc. Nobody, however, slept upon the premises or resided there, and no part of the premises were charged with inhabited house duty. For their manufacturing purposes the water required by the plaintiff company was derived from other sources, but the water used by their employees for the purposes enumerated above up to April 1, 1908, were supplied by meter under agreement at a cost of about 50*l.* per annum. This agreement was then determined, and the defendants, without, any definite agreement, supplied the water until October, 1908, when the plaintiffs took their water from another source. The plaintiffs contended that the water so supplied was "for purposes other than domestic purposes," *i.e.*, purposes of trade, and that, therefore, under sect. 16 of the Metropolitan Water Board (Charges) Act they were entitled to a supply by meter, but the defendants contended that the supply was for domestic purposes, and that under the terms of their Act they were entitled to charge a rate equivalent to 5 per cent. on the rateable value of the plaintiffs' premises. Sect. 25 of the Act defines what are to be included in the term "domestic purposes," but a supply of water for "any trade, manufacture, or business" is not to be included; the same expressions are found in sect. 12 of the Waterworks Clauses Act, 1863. The judge therefore applied the decisions under this latter Act for a solution of the question, and as the purpose for which the water is used is the point to be regarded and not the use of the premises, he held that the water was used "for domestic purposes," and that sect. 16 did not apply. The case of South-West Suburban Water Company *v.* St. Marylebone Union, which bears on this point, will be found noted the *Builder*, June 18, 1904. The Court pointed out that sect. 9 of the Water Board Act supported the construction placed upon sect. 16, as it contemplates premises being occupied solely for purposes of business, and in such cases allows rebates in respect of water supplied for domestic purposes.

VALUATION OF PROPERTY FOR DIFFERENT PURPOSES.

A curious point in connexion with a valuation has just been raised in the City of London court. A firm of surveyors and valuers received instructions to value certain warehouse property as between a willing vendor and a willing purchaser for an agreed fee of ten guineas. The property was valued at 2,000*l.* Subsequently the surveyors discovered that their client desired to borrow 1,250*l.*, secured on the property by mortgage, and that the report was required for this purpose. The surveyors then wrote to the solicitors of the proposed mortgagees informing them that they did not consider the property suitable as security. In the action brought by the surveyors for their agreed fee the defendant urged that they had stultified their report by the communication to the mortgagee's solicitors. Judge Rentoul did not decide the case, but referred the dispute to the President of the Surveyors' Institution. The matter being still *sub judice*, we refrain at present from any comment, but propound the case to our readers, like one of the "hard cases" in "Vanity Fair" requiring solution.

Competition News.

HOSPITAL FOR WIMBLEDON AND DISTRICT.

Mr. D. D. Kirkcaldy, Hon. Secretary, has issued the specifications in the competition for the new general hospital for Wimbledon, Merton, and district, which is open to local architects as well as a limited number of others with special hospital building experience. The cost is not to exceed 6,000*l.* The hospital is to contain three wards, one for men and one for women, each of these having eight beds, while the third ward will be for children, and will have four beds. In addition there are to be four single-bedded rooms, one of which may be used for a paying patient. There will be an operating theatre, with an ante-room which may be used for anæsthetising patients and for sterilising purposes, a small dispensary, and a mortuary. Accommodation will be provided for a nursing staff consisting of one matron, two staff nurses, and two probationers, and the usual domestic staff, the kitchen, scullery, larder, pantry, and coal store being situated on the ground floor. The building throughout will be lighted by electricity, but a gas jet will also be provided in each room. A condition of the competition is that provision must be made for extending the accommodation at a future date to forty beds, and for the

Digitized by Google

possible addition of a laundry, this extension to interfere as little as possible with the original building. If possible the hospital is to be confined to two floors, which must include a committee-room so arranged as to serve as an office as well.

WARRINGTON ELEMENTARY SCHOOL COMPETITION.

The Secretary of the Royal Institute of British Architects asks us to announce for the information of architects proposing to take part in this competition that the Royal Institute of British Architects Competition Committee are corresponding with the promoters with a view to the amendment of the conditions of this competition.—We have received a report to the effect that at the meeting of the Warrington Education Committee on Monday night the Sites and Buildings Committee reported that communications had been received from the Royal Institute of British Architects and from architects in reference to the conditions of the architectural competition for the Evelyn-street Council School, but the Committee could not see their way to make any alteration in the conditions beyond allowing the return of the deposits to those architects who return the conditions and planning rules. In reply to Councillor Roberts, Alderman Bolton, the Chairman of the Committee, said the Committee had advertised for designs on certain lines, and left it to architects to send what they considered most suitable. The conditions had not suited everybody, but seventy had tendered on the lines laid down by the Committee, and twenty wanted particular conditions of their own, so that instead of getting a school at 10*l.* per scholar they might have to pay anything up to 20*l.* The Committee wanted the job done at a particular price, and that was the reason architects did not like the conditions. Councillor Roberts said it was stated that the dispute, if he might so call it, between the Royal Institute of British Architects and the Committee was on the question as to the fees to be paid to the architects, whether the usual standard fees were to be paid, or whether the Committee were trying to get a cheap job, and practically breaking their own rule of paying trade union prices. Alderman Bolton said the Committee left architects to settle their own fees. They gave the architects full scope to charge the regulation fees, or "do the other way" if they liked. The report was adopted.

Trade Catalogues.

We have received from Millars' Karri and Jarrah Company a copy of their new pamphlet, the principal feature of which is a series of sixty illustrations reproduced in nearly all cases from photographs. These include forest scenes, the company's mills, wharves, and harbours, and illustrations of works carried out in jarrah, among which are bridges and jetties, street paving, gates, buildings, and joinery. Some useful tests of jarrah are given, and there are also many testimonials from engineers and others as to the value of the timber. The catalogue is well bound in cloth, and is altogether an interesting production.

The Coalbrookdale Company have sent us a small pamphlet entitled "Some Burning Questions," and containing illustrations and description of their "De Luxe K.B. fire." This is Gibson's patent kettle-boiler fire for kitchen ranges. The boiler for the domestic hot-water supply is a shallow vessel placed over the back part of the fire, and the direct flue passes over it. The bottom grate curves downwards from front to back, so that there is always a good depth of fire under the boiler. Advantage is taken of the sloping bottom to form a grilling closet under the solid front part of it. There are other interesting features about the range, and we judge from the illustrations that it is well worth a trial.

The Improved Wood Pavement Company have sent us a copy of their new wood-block flooring catalogue, containing illustrations of ordinary grooved, tongued and grooved, and dowelled blocks, and a number of designs for block flooring and borders. The designs are good, and are well shown by photographic illustraions.

"Fortunes in Waste Timber" is the title of a small pamphlet sent to us by Messrs. Hill & Herbert (Lejcester). It describes the firm's patent firewood-splitting machine, and their "Agrippa" bundling machine and circular-saw benches. The splitting machine is said to be capable of chopping 8 fathoms of hard-wood per day, at a cost of 2s. 6d., "including attendance and power."

We have received from Mr. J. Attwood (Stourbridge) a copy of his new and useful catalogue on hot-water apparatus. It contains illustrations of many different kinds of boilers, radiators, pipes and fittings, and of tools required by the hot-water fitter. Bath-boilers, tanks and cylinders, pumps, etc., are also shown. A separate sheet contains illustrations of his simple apparatus for heating greenhouses, and of his ventilating gear for ranges of top-lights in greenhouses and other buildings.

Messrs. Twyfords (Hanley) have sent us a copy of their "Interim Catalogue," illustrating a few of their lavatory basins and water-closets. A special feature of the new designs is the absence of sharp angles and mouldings. Among the lavatory basins are four of the pedestal type; nearly all the water-closets are wash-down, but there are two examples of wash-out closet, and one siphonic closet. Three wall urinals are shown. The catalogue consists of forty pages, and is a handy little guide to some branches of the firm's work.

BOOKS RECEIVED.

A TREATISE ON MASONRY CONSTRUCTION. By Ira O. Baker, D.S. Tenth Edition. Pp. 732. (Chapman & Hall. 21s.)

STRUCTURAL DETAILS: Or Elements of Design in Heavy Framing. By Henry S. Jacoby. Pp. 363. (Chapman & Hall. 9s.)

BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND. By R. W. Billings. Part XVII. (Edinburgh; T. N. Foulis. 1s.)

STATISTICS OF PUBLIC EDUCATION IN ENGLAND AND WALES. Pp. 462. (Wyman & Sons. 2s. 3d.)

Correspondence.

SOCIETY OF ENGINEERS:

EMPLOYMENT REGISTER.

SIR,—Some time ago an employment register was instituted by this Society for the use of professional engineers seeking employment, and in view of the utility of such an organisation it is hoped that you will render any assistance in your power in giving publicity to the particulars stated below.

Where a vacancy is advertised the employer is immediately inundated with hundreds of applications, the examination of which involves considerable extra work and loss of time (to say nothing of temper), but the use of this register goes far to solve the difficulty of selection from among a large number of applicants personally unknown to the advertiser.

The principal features of the register are as follows:—

(1) No fees of any kind are charged, the cost of management being defrayed by the Society with a view to the ultimate benefit of the profession.

(2) Qualified engineers of all grades may have their names recorded, though in making a selection from a number of equally suitable men preference is naturally given to members of the Society, for whom the register was originally instituted.

(3) Only a few names of probably suitable candidates are put forward for each vacancy, so as to facilitate the employer's choice as much as possible.

(4) Every effort is made to get personal knowledge of candidates, together with full details of their qualifications, before sending in their names.

A number of well qualified men, representing the various branches of engineering work are now available, and it is thought that if the register were better known it would be widely used and appreciated by all who require draughtsmen, inspectors, and other classes of assistants.

Employers are invited to send inquiries by telephone or in writing to the Secretary, stating their requirements as regards age, qualifications, salary, etc.

A. S. E. ACKERMANN.

17, *Victoria-street, Westminster.*

SEWAGE DISPOSAL.

A MEETING of the Institute of Sanitary Engineers was held at Caxton Hall, Westminster, on the 6th inst., when Mr. W. J. Dibdin, F.I.C., F.C.S., etc., read a paper entitled "The Present Position of the Sewage Disposal Question." He said that the issue of the fifth Report of the Royal Commission on the treatment of sewage might be considered as a sign-post to mark the progress of the science and practice of sewage treatment. Of necessity such reports could not be quite up to date, as the time required for their compilation and printing, etc., permitted the march of progress to outstrip the labours of the workers and writers, whose published observations could not keep pace with events, and it was not surprising, therefore, to find that even at the moment of issue the official report was "out of date."

The lecturer dealt with the references in the Report to the slate beds for the primary treatment of crude sewage. He referred to the use of the word "sludge," and also to the average depth of the deposit on the slates. Proceeding, he said it was perfectly clear on the facts, without calling in the supporting statements of numerous engineers, medical officers of health, chemists, etc., which he had in his possession, that the action of the slate beds was precisely similar to that of "contact beds," the only difference being in the physical arrangement of the supports for the living organisms which were the active agents; and that by their use the sludge difficulty, or, in other words, nuisance, was absolutely overcome, without the cost of chemicals, sludge presses, or other expensive machinery. This result was the point aimed at in the establishment of the slate beds, and was made clear from the first.

The slate bed was an improved form of contact bed, which was filled with superposed layers of slate separated at convenient distances, about 1 in. to 3 in., as might be necessary, apart, by means of slate blocks, the whole thus forming an indestructible series of shelves on which the sewage suspended matters were deposited when the beds were filled with sewage. As in the case of the old clinker coarse contact bed, the sewage was allowed to remain quiescent for two hours, when the outlet valve was opened and the "primary effluent" run off for further treatment on land, contact or sprinkler beds, etc., as the case might be, or for direct discharge into tidal estuaries, the sea, etc.

This short, condensed description postulated several points, viz.:—

(1) Indestructibility of the slate "shelves."

(2) Deposition of sewage suspended matters thereon.

(3) Biological action on deposited matters.

(4) Action taking place in respect to finely divided matters, colloids, etc., during the two hours' quiescence.

(5) Necessity for secondary treatment of effluent.

(6) Extent to which such secondary treatment should be carried under varying circumstances.

Having dealt with the first point, the author said, as to the deposition of sewage suspended maters, that this took place during the period of quiescence, which followed the filling of the beds. Usually this was two hours, but under circumstances, say, to suit the exigencies of tidal flow, etc., this time might be varied. Experiments made under his direction with the London sewage at Crossness, at the time he was preparing the scheme for the treatment of the London sewage, which scheme had now been at work for some nineteen years, showed that practically absolute deposition of suspended matters in a sewage treated with small quantities of lime and iron took place throughout a depth of 15 ft. in forty minutes, the heavier matters settling down very rapidly. These results had been confirmed by many experimentalists since then. As the layers or "shelves" of slate were generally only 2 in apart, it would be seen that the two hours allowed for quiescent settlement was far more than ample for perfect sedimentation.

As to the biological action on deposited matters, the destruction of waste organic matters was not due to purely direct physical and chemical causes, but to digestion. On looking at a mass of the deposit on a slate which had been employed for some time in a bed the casual observer would notice nothing but a collection of *débris*. On smelling the mass it was at once realised that it differed from ordinary sludge in that it was inoffensive. On allowing a portion to dry, it did so rapidly and without the production of offensive emanations given off by "sludge." Judging from experiments made, it was evident that when the bed was first filled with sewage, and allowed to stand full in a quiescent state for a couple of hours, the solid matters settled on the slates. Until the "living earth" was fully developed, the destructive action was slow, but, in warm weather especially, the organisms rapidly developed and attacked the food thus provided for them, exactly as the organisms in a river mud attacked the matter deposited thereon from a tidal water receiving sewage, and if the ratio of organisms, food, and air supply were properly regulated, the action proceeded indefinitely without the evolution of nauseous odours.

As to the action taking place in respect to finely-divided matters, colloids, etc., during the two hours' quiescence, beyond the action on the coarser suspended matters, the slate bed, like the coke, etc., coarse beds which they were supplanting, exerted an influence on those substances which generally come under the head, in practice, of "matters in solution," and were measured in analyses as "albuminoid ammonia," etc. The finely-divided particles were subject to the action of gravity, and if sufficient time be allowed would, by gravitational action, be arrested by heavier particles—slate slabs, for instance—in the same manner as would a chip of wood floating in a stream be attracted by, and adhere to, a boat or other

Digitized by Google

larger particle. The more finely-divided particles of sewage matters, even those in true solution, could be arrested to a greater or less extent, according to the degree of fineness of the pores of the filtering media, and subjected to the attack of living organisms in a filter in the same way that food particles might be distributed among the rocks on a seashore, and there become the prey of the innumerable living creatures abounding thereon.

In reference to the necessity for secondary treatment of effluent from slate beds, the author said, as the slate beds were but a form of very coarse contact beds, it would be evident that the gravitational action would be insufficient in the case of the finely-divided matters, either in complete or semi-solution, and thus the effluent would seldom be sufficiently pure for final discharge into an ordinary running stream. In certain cases, as those in which the crude sewage to be dealt with was very dilute, the effluent from the slate beds would stand the incubation test for four days, and the chemical analysis would show a quality which would permit the discharge into, say, the Thames above lock; but in all ordinary circumstances a further treatment would be required.

The ability of a slate bed effluent obtained under favourable conditions, to stand the incubation test for four days, was confirmed by the results of the treatment of the sewage of Belfast, when the suspended matters were reduced from 20·4 to 0·93 grain per gallon, equal to 95·5 per cent. reduction. When the beds were filled once daily the purification by the albuminoid ammonia test was equal to 47 per cent., and when filled three times daily to 34 per cent., the resulting effluents being such as would be admitted to ordinary inland rivers. When secondary treatment was necessary, as in the majority of instances, the discussion of the action of the slate beds was not affected, as they had done their work, but it might be as well to point out in this connexion that as the great object of sewage treatment was to avoid nuisance, the process which accomplished the work with the minimum risk of nuisance would obviously be the one to be preferred. Also, that if one of the first laws of mechanics—viz., the avoidance of friction, in other words, "working parts"—was equally to be observed, then the contact beds had in fact, as well as in historical record, the first place.

Fine contact beds, such as those at Barking (1 acre), Sutton, Leatherhead, Ewell, Cobham, etc., had been steadily at work in some cases for sixteen years without giving any trouble, and, on the showing of the Royal Commission, were less likely to cause nuisance than the more modern percolating filters which had moving gear, require frequent cleansing, and were more likely to cause nuisance both from smell and flies than the older method which they claimed to displace. If maximum efficiency, therefore, be the object, there was no question but that the contact beds were the best.

The extent to which secondary treatment should be carried entirely depended upon local conditions. If the discharge of the final effluent was to be into a tidal estuary, etc., away from possible risk to oyster, etc., fisheries, then, in many cases, there need be nothing beyond the primary treatment on the slates. If the shell-fish question, or possible contamination to water supplies had to be considered, then doubtless secondary treatment on fine contact beds, followed by sand filtration, or sterilisation by chlorine, ozone, etc., would be desirable.

As an instance of sand filtration, the author described the installation for the treatment of the sewage from the county asylum of the Surrey County Council at Netherne.

In most cases it was sufficient to adopt only a secondary treatment on fine contact beds. But if these beds were not properly constructed, as was the case in too many instances, the effluent might not at all times comply with the requirements of the river authorities, and in that case one of the most simple and efficacious expedients was to allow the effluent to flow over grass land to effect further clarification both by deposition of any suspended humus, gravitational action, as in a contact bed—the stems of the grass, etc., acting as contact media—and aëration, with the result that a bright effluent would be at all times obtained, such as those from contact beds properly made and worked. A similar result could be secured on heavy clay lands by burning the clay and replacing it as a layer on the surface. In this way an excellent effluent was obtained in the case of one installation of slate beds, the effluent from which simply flowed over the layer of burnt ballast, and thence over the grass land to the river.

It would be seen that the slate bed system was the most economical and efficacious for the treatment of the solid matters in the sewage, and did, in fact, abolish the sludge difficulty, and enabled an excellent effluent to be secured by the most simple and least expensive means, which at the same time were less liable to nuisance than other methods. Thus, by the combination of slate beds with fine contact beds, we had, in fact, as indicated by the Royal Commission in their various reports, perfect freedom from nuisance in all stages of the process, and we must therefore have the maximum of efficiency, as the whole crux of the sewage question was summed up in one word —"nuisance"—to show how to abolish which the Royal Commission had itself expended large sums and given much valuable time. Slate beds constituted the only known method of abolishing the sludge nuisance, and that at practically but little working cost, while the fine contact beds finished the work, also without involving the use and consequent repair of working parts, and with the minimum expenditure for labour and renewals.

LONDON AND DISTRICT BOROUGH COUNCILS.

Bermondsey.—The Borough Council has passed plans as follows:—Grain conveyor, Shad Thames, Mr. J. M. Kennard, architect, 13, Railway-approach, London Bridge; workmen's dwellings, Leroy-street, Messrs. Murray, Delves, & Murray, 1, Racquet-court, Fleet-street, E.C.

Deptford.—In regard to the erection of the New Cross Branch Library, quantity surveyors are to be invited to submit quotations at the rate per cent. at which they are prepared to take out the quantities.

Greenwich.—Bramshot-avenue is to be paved as a new street, at a cost of 238*l.* H.M. Commissioner of Works is to be asked to substitute iron railings for the existing brick wall at the south-east corner of Greenwich Park. Plans have been passed for the London Buildings Estates Development Company to build five houses in Hervey-road.

Hendon.—The approach road to the Chase Estate is to be made up by the Rural District Council. The same Council has passed plans as follows:—Messrs. Cannon & Fisher, country residence, Moss-lane, Pinner; Messrs. Clarke & Co., branch offices at the Metropolitan Railway Station, Pinner.

Islington.—Three roads are to be repaired, at an estimated cost of 550*l.*

Stepney.—Sewer work is to be carried out in Grafton-street by the Borough Engineer, at a cost of 420*l.* The Borough Engineer is also to have carriageway paving done in Mile End Old Town, at an estimated cost of 1,172*l.* Negotiations have ended successfully between the Council and Mr. Alfred Hannsom, architect, 27, Geraldine-road, Wandsworth, with regard to the setting back of the shop fronts of 9, 9A, and 10, High-street, Whitechapel, in connexion with rebuilding.

Tottenham.—Plans have been passed as follows:—Mr. M. Bagge, twenty houses in Sirdir and Crawley roads; Mr. A. E. Broadberry, motor garage, Willoughby-lane.

Master Builders' Associations, etc.

NORTHAMPTON MASTER BUILDERS' ASSOCIATION.

The annual dinner of the Northampton Master Builders' Association was held on the 14th inst. at the Peacock Hotel. The President (Mr. R. W. Harris) was in the chair, and was supported by the Mayor (Councillor J. Brown), Councillor H. Martin, J.P., and many others. After the loyal toast, given by the Chairman, Mr. A. Smith submitted "The Mayor, Magistrates, and Corporation." The Mayor and Councillor Martin responded. Mr. Henry Green, submitting "The Architects," said they did not conspire to rob clients, but were willing to do work at moderate prices. He suggested that architects should only ask for bills of quantities from successful candidates, and should seal the quantities up till settlement, and not let them lie about in their offices for anyone to see.—Mr. J. A. Piccaver said he always made a practice of sealing tenders until one was accepted, and thought that was the general practice.—Mr. John Brown, jun., said the architects had to face a difficult problem. The client wanted a 2,000*l.* job done for 1,000*l.*, the builder wanted 3,000*l.*, the architect had to make both ends meet. The architect had no use for the quantities, and he agreed with Mr. Green. He also disliked the idea of deposits from builders for quantities.—Mr. Allen also spoke. Mr. S. S. Redwood proposed "Success to the Master Builders' Association," and pointed out that the success of the building trade depended on the success of other trades. He hoped and believed trade was getting better.—The President, in reply, said that evening's gathering showed one side of the Association, and he was glad at such a successful event. The other side was the working side. They had to discuss many important matters, and they always tried to do their best both for employers and employees, and to settle matters as amicably as possible.—Mr. W. Heap gave "The Visitors," which Mr. J. F. Stops, solicitor to the Association, Mr. Moulde, and Mr. Hall acknowledged.—Mr. J. J. Martin gave "The President," and the Chairman, in responding, appealed for more of the younger men to attend the meetings. He noted the recent visit of an expert on the question of forming a conciliation board. He felt such a board would be of great value, and would be ready to call a meeting to thoroughly discuss the question.—Mr. John Bird gave "The Vice-Presidents," and Mr. A. M. Dunham acknowledged. Among the remaining toasts was that of "The Secretary," proposed by Mr. E. Archer, and acknowledged by Mr. A. L. Airs.

SHEFFIELD MASTER BUILDERS AND COUNCIL REPRESENTATION.

The Sheffield Master Builders' Association are supporting the candidature of Mr. J. Kay for Crookesmoor Ward, as they feel that it is desirable that an important industry like theirs should be represented in the City Council. Mr. Kay attended a meeting of master builders at the Exchange last week, and in a brief address said he was opposed to the housing schemes of the Corporation. He contended that a local authority had no right in this way to enter into competition with the private tradesman. He was also strongly opposed to the Works Construction Department. Not only was the Department a great expense to the city in its management, but frequently the work it did could have been done quite as well and much cheaper by a private builder.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ARLINGTON.—Additions to school; Mr. F. J. Wood, architect, Shire Hall, Lewes.

Auchinleck.—Residence (2,000*l.*); Mr. A. C. Thompson, architect, Wellington-chambers, Ayr.

Balderstone.—Institute; Vicar, St. Mary's Church, Balderstone.

Barnoldswick. — Bank (3,500*l.*); Messrs. Clegg Brothers, builders, Burnley.

Belfast.—Extensions to General Post-office (20,000*l.*); Messrs. Curry, Ltd., University-street, Belfast.

Bilston.—Extensions to Springvale Steel Works; Sir Alfred Hickman & Co., Ltd., Bilston.

Birtle. — Church and school (6,000*l.*); Trustees, Wesleyan Methodist Connexion, Birtle.

Bolton.—Extension to mills; Messrs. A. Bromley & Co., Ltd., Folds-road, Bolton. Extensions to mills; Messrs. Woolfenden & Son, Marsh Fold-lane, Bolton.

Broughton.—Wesleyan church and school; Messrs. W. J. Morley & Sons, Kingsway, London, W.C.

Bury.—Church school (3,000*l.*); Mr. F. Porter, builder, 29, Walmersley-road, Bury. Rebuilding shops; Messrs. Hutchinson & Holt, builders, Croft-street, Bury.

Calder Grove.—Paper-mill; Messrs. C. Marsden & Sons, Ltd., Calder Grove.

Cardiff.—Enlargement of church and parish hall; the Vicar, St. Margaret's, Roath, Cardiff.

Chatham.—The Town Council has passed the following plans:—Two houses, Luton-road, Messrs. T. Fowle & Sons; six houses, Wyles-road, Mr. H. A. Phillips.

Chesham.—Additions to St. Mary's Church; the Vicar, St. Mary's, Chesham.

Chorley.—School (4,500*l.*); Mr. L. Fairclough, builder, Adlington.

Coatbridge (N.B.).—Extensions to works for Waverley Iron and Steel Company, Coatbridge (3,000*l.*). Extensions to works for Wilson & Union Tube Company, Coatbridge. Electric power-station (1,600*l.*); Messrs. Stewarts & Lloyds, Coatbridge, N.B.

Corby. — School; Education Secretary, County Hall, Northampton.

Cramlington.—Additions to workmen's club; Mr. Harkus, builder, Ashington.

Croydon.—Warehouse, Whitgift-street; Mr. T White, architect, Whitgift-street, Croydon. Workshop, Park-lane; Mr. C. H. Ridge. Theatre; Mr. E. Bates, architect, Croydon. Rink, London-road; Mr. R. M. Theobald, architect, 300, Goswell-road, E.C. Bakehouse and store, Windmill-road; Mr. A. S. Gover. Six houses, Macclesfield-road; Mr. A. W. Hudson. Mortuary at Elis David Almshouses; Messrs. J. Burton & Son, Parochial Hall, Handcroft-road; Mr. E. G. Cole.

Culverton Down.—Rink; Secretary, Tunbridge Wells Skating Rink Company.

Cwndu and Cwmfelinfach.—Additions to school; Mr. J. Bain, architect, County Hall, Newport, Mon.

Dumfries.—Extensions to Forest Lodge (2,500*l.*); Messrs. Hay & Thompson, architects, 10, Bank-street, Dumfries.

Durham.—Rink; Durham Rinking Company.

Eccleshill.—Weaving-sheds; Messrs. Mawson & Hudson, architects, 2, Exchange-buildings, Bradford.

Epsom.—Proposed additions to workhouse; Mr. A. E. Williams.

Exmouth.—Block of shops; Mr. E. E. Elles, architect, Exmouth.

Felixstowe.—Isolation hospital; Surveyor, Urban District Council, Felixstowe.

Forfar.—Extensions to Forfar Academy (5,000*l.*); Messrs. Gavin & Soutar, architects, 42, East High-street, Forfar.

Glenaftar.—Additions to sanitorium; Clerk to Board of Ayrshire Sanitorium.

Halifax.—Forty-six houses, Rochdale-road; Messrs. Sowerby, Ltd., Halifax.

Haltwhistle. — School (2,000*l.*); Messrs. Birkett & Sons, builders, Haltwhistle.

Hickling.—Additions to chapel; Wesleyan Methodist Trustees.

Ilford.—The Urban District Council has passed the following plans:—Four houses, Asngrove-road, Mr. E. T. Dunn; proposed new offices for Dr. Barnardo's Homes, Mr. H. Reancy; eight houses, Green-lane, and six houses, New-road, Mr. A. Thomerson for Messrs. Diprose & Knox.

Jarrow. — Entertainment hall; Messrs. Weddle & Son, builders, South Shields.

Keighley. — Eighteen houses; Messrs. Broster & Sons, architects, Keighley. School (5,000*l.*); Messrs. Moore & Crabtree, architects, Keighley.

Kilmarnock.—New church; Trustees, United Free Church.

Lowestoft.—The Town Council has passed plans for nine cottages, Albany-road, for Mr. J. T. Saunders.

Merton.—Rebuilding, Nelson Arms public-house, High-street; Messrs. Loxley, Elam, & Gardiner, solicitors, 80, Cheapside, E.C.

Miles Platting.—Co-operative stores; Secretary, Co-operative Society, Miles Platting.

Motherwell.—Academy (35,000*l.*); Messrs. Cullan, Lochhead, & Brown, architects, Motherwell.

Newbridge (Ireland).—Soldiers' Home; Messrs. W. H. Stephens & Sons, architects, Newbridge, Co. Kildare.

Newbridge (Mon.).—School: Mr. J. Bain, architect, Shire Hall, Newport, Mon.

Newcastle-on-Tyne.—Parish hall, Goldspink-lane: Mr. A. B. Plummer, architect, 13, Grey-street, Newcastle-on-Tyne.

Newton.—School; Mr. H. Beswick, architect, Newgate-street, Chester.

Northfleet.—Fire-station; Clerk to the Urban District Council.

Ormskirk.—Nurses' home (2,300*l.*): Messrs. J. Robinson & Son, builders, Ormskirk.

Oswaldthistle.—Seventeen houses; Messrs. G. Walsh & Son, architects, Blackburn-road, Oswaldthistle.

Pickering.—New wing, Lady Lumley's Grammar School; the Governors, Pickering.

Pinner (Middlesex).—Baptist church, Paines-lane (5,000*l.*): Messrs. Spalding, Spalding, & Myers, architects, Watford and London; Messrs. Brightman & Son, builders, Watford.

Pontardawe.—Additions to workhouse; the Guardians, Pontardawe.

Portslade.—School; Mr. F. J. Wood, architect, Shire Hall, Lewes.

Reading.—Skating-rink (5,000*l.*); Secretary, Reading Rink Company, West-street, Reading.

Rotherham.—Smallpox hospital (3,500*l.*); Mr. E. B. Martin, Engineer, Rotherham Town Council.

St. Asaph.—Isolation hospital; Surveyor, Rural District Council. St. Asaph.

Sale.—Parish hall (1,200*l.*); Trustees, Sale Memorial Church.

Sandyford.—Parish hall; Vicar, St. Barnabas, Sandyford.

Southampton.—The Town Council has passed the following plans:—Four houses, Lumsden-avenue, Messrs. Jurd & Sanders; twenty-two houses, Mayflower-road, and skating-rink, Northlands-road, Mr. W. B. Hill.

Spennymoor.—School (4,000*l.*); Mr. W. Rushworth, architect, Shire Hall, Durham.

Staines.—The Urban District Council has passed plans for a garage at Laleham, for Mr. T. W. Simpson.

Strathpeffer.—Hotel; Messrs. Cameron & Burnett, architects, Academy-street, Inverness.

Sunderland.—Bottle works and foundry, for Messrs. Avres, Quay, Sunderland. Brewery buildings, for Messrs. Vaux & Co., Sunderland.

Surbiton (Surrey).—Proposed fire-station; Mr. H. T. Mather, Surveyor, Surbiton Urban District Council.

Watford.—New church for St. Michael's and All Angels (15,000*l.*): Mr. A. G. Bond, architect, 115, Gower-street, W.C. Motor garage, Watling-street, Radlett, for the Herts Motors, Ltd.

Widnes.—Parochial hall; the Vicar, St. Paul's Church, Widnes.

Worcester.—Additions to Cherry Orchard School; City Architect, Worcester.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of this Council on October 14, the following matters were dealt with:—

National Gallery Extension.—It was agreed to consent to the formation of a subway under Orange-street in connexion with the National Gallery and extension of the National Portrait Gallery, subject to H.M. Office of Works bearing the cost of reinstating the public way.

Westminster Electric Supply Corporation Premises.—The receipt of a letter was reported from Mr. C. S. Peach, the architect of the Westminster Electric Supply Corporation, stating that the company found it impossible to carry out all the Council's conditions in respect of the drainage of their Horseferry-road premises. It was agreed to modify the conditions, but not to consent to all internal waste and soil pipes being of iron, as the County Council stipulated that a soil pipe constructed in a building shall be constructed of drawn lead with wiped joints.

Regent-street Rebuilding.—The Improvements Committee reported that a letter had been received from H.M. Office of Woods, etc., stating that Mr. Leveson Gower's attention has been called to the report in the *Builder* of a recent meeting of the Westminster City Council at which the question of the widening of Beak-street, Regent-street, was considered, and he would like to know whether it is to be understood that, so far as the City Council is concerned, the proposal to widen Beak-street had now been given up. He would also be glad to be favoured with the Council's definite decision with regard to other street widenings, as mentioned in the official letter of March 13 last. The Committee proceeded to deal with the negotiations which had taken place with H.M. Office of Woods and the London County Council, and recommended:—"That H.M. Office of Woods, etc., be informed that the City Council have no intention at present of proceeding with the widening of either Beak-street, Foubert's-place, Chapel-court, Regent's-place, or Heddon-street."—The report was adopted.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday, when the following matters were dealt with:—

Tenders Recommended for Acceptance:—

Bethnal Green, N.E. — Morpeth-street. — "Higher" school for 300 children: J. & C. Bowyer, Ltd.	£9,387
Brixton.—The "Reay."—"Higher" school for 304 children: Holliday & Greenwood, Ltd.	6,368
Islington, E.—Canonbury-road.—Enlargement by 317 places: Lole & Co.	8,519
Kensington, N.—St. Mark's-road.—"Higher" school for 304 children: J. & M. Patrick	9,579
Norwood.—Venetian-road.—School for 120 physically defective children: J. & M. Patrick	4,206
Paddington, N.—Amberley-road.—Enlargement by 644 places: J. & C. Bowyer, Ltd.	17,287
Essendine-road.—Enlargement by 413 places: Hall, Beddall, & Co.	9,040
St. George-in-the-East. — Berner-street. — Manual training, laundry, and housewifery centres: J. & C. Bowyer, Ltd.	2,866
Woolwich.—The "Maryon Park."—Enlargement by 250 places: Kirk & Randall	5,195

In connexion with the erection of a school on the St. Mark's-road site (Kensington, N.), the work of providing an additional science-room be done by J. & M. Patrick as an extra on their contract, at a cost not exceeding 632*l.*

Furzedown Secondary School, Wandsworth.—Revised plans for school for 456 girls were passed, and an estimate of 29,781*l.* referred to Finance Committee.

Lewisham Technical Institute.—It was agreed to make trial holes on the site of proposed institute in connexion with the preparation of preliminary plans for the building.

Brixton-hill Industrial School.—The sanitary authorities have found that the drains are unsatisfactory, and an estimate of 202*l.* 2s. by the Economic House Drainage Company was recommended.

Mayford Industrial School.—249*l.* was voted for precautionary measures against fire.

Upper Hornsey-road, Islington.—Messrs. C. Kite & Co. withdrew their tender of 335*l.* for heating, and now that of Messrs. J. & F. May, 348*l.* 10s., was recommended.

New Contractors.—The following were added to the selected list of contractors to be invited to tender for new schools, enlargements, structural alterations, repairs to buildings, painting and cleaning, subject to the condition specified in each case:—(i.) Messrs. J. Allen & Sons, Ltd., Kilburn, for works exceeding 10,000*l.* in value, on probation; (ii.) Messrs. R. A. Lowe & Co., Lower Camden, Chiselhurst, for works not exceeding 10,000*l.* in value; Messrs. E. R. Roome & Co., 36, Basinghall-street, for enlargements, structural alterations, repairs to buildings, painting and cleaning, for works not exceeding 5,000*l.* in value; Messrs. M. Calnan & Son, 242A, Commercial-road, structural alterations, repairs to buildings, painting and cleaning, for works not exceeding 1,000*l.* in value; and the undermentioned firms for repairs to buildings, painting and cleaning—Messrs. E. Crouch & Co., 7, Drapers'-gardens, Throgmorton-avenue; Messrs. Waddington & Son, 24, Brecknock-road, Holloway; Mr. A. H. Bird (trading as G. Nelson Watts), 31, Treadgold-street, Notting Hill, on probation; Messrs. J. Gower & Son, 27, Trinity-road, Upper Tooting, for small contracts; heating apparatus, Messrs. W. J. Fryer & Co., Bravington-road, Paddington; General Iron Foundry Company, Ltd., 43, Upper Thames-street, on probation; Mr. R. J. Key, Clifton-street Works, Notting-hill, for small contracts; Messrs. Mackenzie & Moncur, Ltd., 8, Camden-road; for providing and erecting iron staircases, General Iron Foundry Company, Ltd., 43, Upper Thames-street, on probation; Mr. R. J. Key, Clifton-street Works, Notting Hill, for small contracts; Messrs. J. Allan, sen., & Son, Ltd., Elmbank Foundry, 12, Possil-road, Glasgow.

Paddington Technical Institute.—91*l.* 12s. sanctioned for precautions against fire: the work to be done by Messrs. W. Lawrence & Son, the contractors of the institute, on schedule prices.

General Building News.

NEW CHURCH, LOWESTOFT.

A small church is being built in connexion with St. Margaret's, the parish church of Lowestoft, to serve the northern boundary of the parish known as Oulton. Mr. W. J. Roberts, of Lowestoft, is the architect, and Mr. Alfred Woolner has the building contract.

ST. MARTIN'S CHURCH, WORCESTER.

The foundation-stone of this church was laid but the Countess Beauchamp on October 9. The church, which is designed to accommodate 800 adults, at a cost of about 10,000*l.*, will be of Worcestershire red stone, rock-faced externally, and the interior facing will be of brick, with box ground stone dressings. Messrs. J. & A. Brazier, of Bromsgrove, are carrying out the work, from the designs of Mr. Geo. H. Fellowes Prynne, of Westminster. An exterior view of the church as proposed was given in the *Builder* of October 21, 1905.

WESLEYAN CHURCH, HORRABRIDGE.

A Wesleyan church is in course of erection at Horrabridge, in the Tavistock Circuit. The new building has been designed by Mr. F. A. Wiblin, of Plymouth.

PARISH CHURCH, DARTFORD

The Ecclesiastical Commissioners, as lay rectors, are about to effect a reparation of the chancel of Holy Trinity Church, conditionally upon the restoration, at the charges of the parishioners, of the tower, in which some fissures have occurred. The church contains many monuments and some fine brasses—one of the former is that of Sir John Spielman (1607), who established, on the site afterwards of the gunpowder factory, the first paper-mill erected in England.

NEW CHURCH, WESTCLIFF.

It is proposed to erect a new church, to be known as the Church of St. Saviour, at Westcliff. The cost of the building, without the tower, is estimated at between 10,000*l.* and 11,000*l.* The intention is to proceed first with the erection of the nave, which will cost about 5,000*l.* The architects are Messrs. Hoare & Wheeler, London.

GRAMMAR SCHOOL EXTENSIONS, HINDLEY, LANCS.

The premises of the Hindley and Abram Grammar School are to be enlarged and improved. The new buildings are to be finished externally to match the present school, faced with Appley Bridge parpoints and Parbold stone dressings. The floors will be of concrete, fire resisting, covered with pitch-pine blocks. The lower portions of the walls of the rooms and corridors, except cookery and scullery, will be wainscoted in pitch-pine, their upper portion and ceilings plastered, the cookery, scullery, and entrance porches having dado of glazed bricks. The internal doors, screens, cupboards, and roof principals are also of pitch-pine. The heating is upon the low-pressure hot-water system, the generator being the latest pattern of sectional triple-flued "Solar," with ventilative radiators. There is also, in addition, a service of specially-designed

Digitized by Google

draught-proof wall inlet boxes, with patent extractors fixed at the ridges. The artificial lighting is by gas, with incandescent burners. The plans and specifications have been approved by the Board of Education and the County Education authorities. The contractors are Messrs. A. Wigan & Son, and the architect is Mr. Richard Pennington, of Wigan.

NEW BOARD SCHOOLS, BLANTYRE.

The Blantyre School Board have decided to erect two new schools in Calder-street. One of the schools is to be for elementary education and the other for higher-grade education, the total cost being 10,000*l*. It was agreed to have competitive plans from eight architects, and for the new buildings Mr. William B. Dow, Glasgow, was unanimously appointed measurer.

PONTYCYMMER HIGHER ELEMENTARY SCHOOL.

The first higher elementary school within the administrative County of Glamorgan was opened recently at Pontycymmer. The new school, which has been erected on an elevated site with a southern aspect adjoining the existing boys' elementary school, provides on the main floor five class-rooms, central hall and art-room, joint chemical and physical laboratory, and lecture-rooms, besides ample cloakroom accommodation for boys and girls, teachers' rooms, and store-rooms. Owing to the fall in the ground playsheds, rooms for cookery and manual instruction, dining-room, heating chamber, and stores are economically and conveniently situated under the front portion of the main floor of the building, and thus the advantage of a southern aspect has been fully employed. The building at present will accommodate 248 scholars in the classrooms and lecture-room, but in view of the rapidly increasing neighbourhood the plan is arranged so that it may be extended without interfering with the working of the present school. Glazed brick dadoes are employed to all classrooms, corridors, central hall, etc., and wherever possible angles have been rounded, both for the safety of scholars and to simplify cleaning operations. The floors of classrooms and central hall are laid with solid wood blocks, while those in the corridors and cloak-rooms are in adamantine tiles. The ventilation is on the natural system, with opening casements to the top and bottom of windows, the lower lights having glazed hopper cheeks, which causes the incoming air to ascend, thus preventing draughts. Foul air extractors are fitted in the ceilings and in the chimney-stacks. The building throughout is heated on the low-pressure hot-water system, with radiators, whilst open fires are also provided in case of emergency. The exterior has Forest of Dean stone dressings, the roofs being covered with Welsh slates. The building was designed by Mr. D. Pugh-Jones, F.S.I., County Architect, Cardiff, under whose supervision the work has been carried out. The builders were Messrs. F. W. Lougher & Co. (Pontycymmer), the contract amounting to 7,746*l*. The heating apparatus was installed by Messrs. Bevan Brothers (Swansea), at a cost of 248*l*., and the decorative work was entrusted to Mr. G. R. Heycock. Mr. Thomas Roberts (Pontycymmer) acted as clerk of works.

ADDITIONS TO CHRIST'S HOSPITAL, HORSHAM.

A new manual training school has just been added to Christ's Hospital, West Horsham. It is built in red brick, with Bath stone facings and roofing of Broseley tiles. Its external dimensions are:—Length, 137 ft. 6 in.; width, 36 ft. 6 in.; height, 40 ft. The floors throughout the building, except the smithy, are finished with wood-block flooring. The heating is by low-pressure steam by radiators, supplied from a separate boiler-house. The whole structure is independent of the rest of the school buildings in all matters except electric light, which is supplied from the Hospital's generating-station. There are also at the back two accessory blocks, one for the use of the various sections of the Natural History Society, including a dark-room for photography, and the other a foundry. Each block is 43 ft. by 20 ft. and 21 ft. high. Another new building just being completed is a music school. This is a new one-storied building of red brick and Bath stone, with a front cloister and porch. The first room entered is the singing-room, with exposed framed roof timbers of Oregon pine. A raised platform in tiers will be used by the choir while practising or giving small concerts. The dimensions are 43 ft. by 21 ft., and 25 ft. high. There are two teaching-rooms, twelve piano practice-rooms (each 9 ft. by 6 ft., and 10 ft. high), a band-room (35 ft. by 20 ft., and 25 ft. high), and four band practice-rooms. The walls of the latter are specially constructed to resist the passing of sound; they are double, and built with composition slabs, and the ceilings are treated in the same way. The flooring, heating, and electric lighting are similar to those of the manual training school. The new buildings have been carried out from designs of Sir Aston Webb and Mr. Ingram Bell, the original architects of the school.

ACADEMY BUILDINGS, HAMILTON.

The new academy, which the Hamilton Burgh School Board have resolved to erect, will stand on a central site at the corner of Auchincampbell-road and Union-street, Hamilton. The design is by Messrs. Cullen, Lochhead, & Brown, architects, Hamilton, whose plans were placed first by the assessor, Mr. Bell, Glasgow, and were afterwards adopted by the Board. There were over thirty competitors. The selected design embraces a higher school, science and technical school, and art school, with a junior school separate from and west of the main block.

MESSRS. CHUBB'S FACTORY, WOLVERHAMPTON.

The new factory for Sir George Chubb & Co., at Wolverhampton, was opened last week. The chief feature of the new building is the large erection shop for the construction of steel strong-rooms, treasuries, and safe deposits, 350 ft. long and 40 ft. wide. Nearly the whole area is undivided by party walls, the general design of the building giving the maximum amount of light, avoiding as much as possible direct sun rays. The lower end of the main building is divided by partitions for smiths' shop, stores, welding-room, proofing, grinding, painting, safe store, packing, and plating-room. Electric power is used throughout, and power-rooms have been erected and plant therein fitted which will take its electric supply at 5,000 volts from the Corporation mains. This is reduced to 400 volts and distributed amongst thirty motors of various powers, from 2½ to 20 h.p., the total providing a nominal horse-power of 200. The general lighting will also be provided by electricity. Hydraulic power is laid on all over the works for use in bending presses, riveting machines, and for holding down work on other machines. The levelling blocks are made of armour-plate from H.M.S. *Dreadnought* (obsolete). A double furnace for hardening two large plates at once for strong-room work will be provided complete with electric mechanism for registering the temperature so as to ensure the plates not being overheated. Acetylene gas plant is provided for the welding process. A small block of temporary offices have been provided, adjoining the main factory, and a foreman's cottage is in course of construction. A large piece of land is retained at the back of the factory for future extension. The whole of the factory buildings have been designed and carried out by Mr. G. Gordon Stanham, architect, of London. Mr. C. H. M. Mileham, of Lincoln's Inn-fields, has acted with him as consulting architect, and Mr. F. T. Beck, of Wolverhampton, as local superintending architect. Mr. F. Simpson was the general clerk of works. The general contract for the buildings was placed in the hands of Messrs. Henry Lovatt, Ltd., of Wolverhampton. The steel construction is by Messrs. Drew Bear, Perks, & Co., of London. The electric plant is supplied by the British Westinghouse Company, the consulting electrical engineers being the British Engine Boiler and Electrical Insurance Company, Ltd., of Manchester.

IMPROVEMENTS AT THE EDINBURGH BOTANIC GARDENS.

The Edinburgh Dean of Guild Court have granted warrants to His Majesty's Commissioners of Works for the erection of new laboratories, etc., at the Botanical Gardens, and extensive alterations. The new building will contain on the ground floor a classroom, a water-culture room, also two photographic dark-rooms, dark culture-room, workshop and room for pathology and apparatus, while on the first floor will be placed the mycological laboratory, the photomicrography-room, and rooms for research work. There is also an assembling hall, 41 ft. long by 15½ ft. broad, and here is situated the main staircase. A secondary staircase is being provided near the west end of the south wing. The whole of the structure will be of the most modern fireproof and vermin proof construction and materials, the walls being built of two thicknesses of brick with cavity between, and the external faces finished entirely in rough-cast or harling with stone front to Inverleith-row. The roofs will be covered with stone slates. The plans have been prepared in, and the erection of the building is being supervised by, H.M. Office of Works, under the direction of Mr. W. T. Oldrieve.

POST-OFFICE, BRECHIN.

Messrs. Black & Son, builders, Brechin, have secured the contract for the whole of the building works in connexion with the new post-office which is to be erected in Clerk-street, Brechin. The building, which is to be constructed of Burntisland stone, will have a frontage to Clerk-street of 60 ft. It will contain a counter-room, measuring 26 ft. by 22 ft., and the usual accommodation for the telegraph, sorting, telephone, and the various other departments.

FACTORY EXTENSIONS, BELFAST.

Messrs. Gallaher, Ltd., the tobacco manufacturers, are, it is stated, about to make an addition to their premises in York-street by erecting a new building, a site for which has ben secured in the vacant ground at Meadow-street, off York-street. The new building will be over 204 ft. long and 56 ft. broad, and adjacent to it there will be a glass-roofed one-story erection 150 ft. long and 50 ft. broad, to be utilised for the storage of leaf and other purposes. It is also intended to put up a boiler-house at the end of the store. The plans have been prepared by Mr. Samuel Stevenson, architect, of Belfast, and the contract has been placed with Messrs. M'Laughlin & Harvey.

NOTTINGHAM SHIRE HALL REBUILDING.

Mr. M. K. North, M.Inst.C.E., recently held an inquiry on behalf of the Local Government Board into the application of the Notts County Council for sanction to borrow 4,300*l*., the estimated cost of the scheme for the enlargement and rebuilding of those portions of the county buildings damaged or destroyed by fire. Mr. E. P. Hooley, County Surveyor, attended, and furnished details of the scheme. The proposed new erection will consist of a basement, the ground floor, first floor, second floor, and third floor, with a Mansard roof. It will provide accommodation for the Medical Officer of Health, the Weights and Measures Department, and the Education Department.

NEW BUILDINGS, HULL.

The Hull Corporation Works Committee have approved the plans of the following:—J. H. Osborne, sixteen houses, Damsom-lane; G. J. Kennington, sixteen houses, Telford-street; W. H. Nicholson, six houses, Aberdeen-street; J. E. Wray, ten houses, Lee-street; J. W. Jordan, ten houses, New-street, Cottingham-road; A. Botham, fourteen houses, Buckingham-street; Norman & Cooper, four houses, Holderness-road; R. Robinson, one house, Victoria-avenue; J. B. McMaster, eight houses, Auckland-avenue; J. M. McMaster, six houses, Ryde-street; R. Airey, eighteen houses, Tavistock-street; W. Garbutt, six houses, Heathcote-street; E. Whitlock, thirty-two houses, Haltemprice-street; J. Beal, forty-five houses, Manvers-street; T. H. Brough, four houses, Park-avenue; J. Westfield, two houses, Alexandra-road; G. T. Spruit, twenty-seven houses, Westcott, Chaucer, and New streets; J. E. Wray, thirty-three houses, Lee-street; T. J. Davies, sixteen houses, Raglan-street; E. Russell, fifteen houses, Brindley-street; J. W. Smith, twelve houses, Essex-street; M. Garton, twelve houses, Cranbrooke-street; E. Whitlock, seventeen houses, Cranbrooke-street; W. Barnett, eighteen houses, Marlborough-avenue and Chanterlands-avenue; W. Garbutt, thirteen houses and shops, Frodsham-street; J. T. Taylor, eight houses, Southcoates-avenue and Whitworth-street; W. Garbutt, twelve houses, Desmond-avenue; F. W. Lewis, six houses, Stepney-lane; T. R. Ferens, M.P., lodge, Holderness-road; F. Neale, ten houses, Marlborough-avenue; A. N. Whincop, house and shop, Essex-street; Norman & Cooper, four houses, Holderness-road; E. Kirby, house, Stepney-lane; J. T. Taylor, house and shop, Southcoates-avenue; W. Nicholson, thirty-four houses, New-street, Holderness-road; C. D. Holmes & Co., Ltd., workshop, Alexandra Dock; J. H. Pearcy, shop, New Bridge-road and Victor-street; Major & Co., Ltd., mess-room, etc., Fountain-road, extensions, Church-street, and cooper's shop, Fountain-road; F. Atkin & Co., Ltd., extensions, Dairycoates; Garden Village, Ltd., club-house, Garden Village; Trustees, St. Andrew's Church, schools, Abbey-street; Raines, Porter, & Seddon, laboratory, Wincolmlee; Brekke & Howlid, offices, St. Andrew's Dock; Martin & Co., engine-house, Sculcoates-lane; Kingston Rovers Football Club, Ltd., club-house, Craven-street; Hull Hide and Skin Market, additions, Maxwell-street; British Oil and Cake Mills, Ltd., mills, Wilmington; Central Dry Dock Company, Ltd., offices, Humber-street; Sissons Brothers, Ltd., additions, Bank-side; Trustees, Wesleyan Church, additions, Great Thornton-street; British Gas Company, Ltd., offices, etc., Baker-street; Needlers, Ltd., extensions, Bournemouth-street; Trustees, Fish-street Memorial Church, schools, Duesbery-street; East Park Skating Company, rink, Holderness-road; Thornton-Varley & Co., alterations, Prospect-street; Mayfield Brothers, additions, Sculcoates-lane; A. Baxter, drying kilns, Little George-street.

PARISH ROOMS, ASHTON GATE, BEDMINSTER.

Premises are being built to serve the parochial needs of the parish of St. Francis, Ashton Gate. Mr. Graham C. Awdry is the architect, and the entire cost of the work is expected to be about 3,000*l*.

Digitized by Google

SEA FRONT IMPROVEMENT SCHEME, BURNHAM.

Schemes for the improvement of the sea front at Burnham have been prepared by Mr. W. H. Chowins, Surveyor. One proposal involves an expenditure of 2,900*l*., and comprises the erection of a promenade deck in concrete and steel, open underneath, and therefore at certain tides over the water. A larger scheme provides for a promenade 25 ft. wide from the pier to the north end of the promenade, and if a pavilion is built would cost 9,200*l*. A further proposal, to build a sea-wall and solid promenade without a pavilion, is estimated to cost 13,838*l*.

KURSAAL SCHEME, MATLOCK BATH.

The Matlock Bath Urban Council has received the approval of the Local Government Board on the question of the erection of a kursaal and pump-room, to complete the improvement scheme, which is costing the town altogether 50,000*l*. The building will be erected on a site by the fishpond.

SKATING-RINK, BEDFORD.

The London and County Rinking Company have opened a roller skating-rink in the grounds of Castle Close, Bedford. The architect for the work has been Mr. E. H. C. Inskip, and the builder Mr. Laughton. The building is 185 ft. long and 85 ft. wide.

NEW BUILDINGS IN SLOUGH.

The Slough Urban District Council have passed the plans of the following new buildings:—Stores and shops in Mill-street, for Messrs. A. Jackaman & Son; four houses in Ragstone-road, for Mr. T. Perrin; one house in Chalvey-road, for Mr. R. Cozens; one house in Alexandra-road, for Mr. C. Cullingham; two houses in Montem-road, for Mr. J. H. R. Atkins; and two houses on the Diamond Estate, for Mr. R. Cozens.

NEW BUILDINGS AND ROAD WORKS, GLASGOW.

The Glasgow Dean of Guild Court have granted the following linings:—The Steel Company of Scotland, Ltd., 23, Royal Exchange-square, to erect buildings at Blochairn; the Minard Building Company, to erect tenements and dwelling-houses on the south side of Killearn-street, Possilpark; Mathew Henderson, building contractor, Grant-street, to erect buildings at the corner of Great Western-road and Crow-road, and at the corner of Great Western-road and Ancaster-drive; William Anderson, joiner and builder, 30, King Edward-road, Jordanhill, to erect tenements and dwelling-houses at the corner of Pollokshaws-road and Mannering-road; William Cochrane, Auchinairn-road, Bishopbriggs, to erect two tenements of dwelling-houses in Ellangowan-road, Shawlands; Springburn Skating Rink Company, to erect a skating-rink on the east side of Campbell-street, Springburn; Richmond & Henderson, architects, 116, Hope-street, to erect a double villa in Blairbeth-drive; George Eadie & Sons, 405, Mathieson-street, to erect four tenements of dwelling-houses on the west side of Hollybrook-street; Henry Erskine Gordon, of Aikenhead, Cathcart, to form a street and sewer on the lands of Clincart Mount Florida; the Queen's Park Football Club, Ltd., 216, West George-street, to erect pay entrances and exit gates at Somerville-drive; the Dennistoun Roller Rink Company, to erect a roller skating-rink to the west of Finlay-drive, Dennistoun; the General Building Company, 159, Bath-street, to construct a road 40 ft. wide beginning at Johnstreet and terminating at Lochburn-road, also to erect four blocks of cottages at Lochburn; John Porter, house factor, 577, Dalmarnock-road, to erect four tenements of shops and dwelling-houses on the north-east side of Dalmarnock-road.

NEW BUILDINGS, YARMOUTH.

The plans of the following new buildings have been approved by the Yarmouth Town Council:—Eighteen houses, Avondale-road, Gorleston, for Mr. F. A. Osborne; house, Norfolk-square, Mr. A. E. Lark; two houses, Albemarle-road, Gorleston, Mr. H. Downing; four houses, Boundary-road, Gorleston, Mr. H. R. Middleton; new premises, Regent-street, and Rows 63 and 66; seven houses, Avondale-road, Gorleston, Mr. S. W. Blyth.

PROPOSED WORKHOUSE EXTENSION, GUILDFORD.

The Guildford Board of Guardians have resolved on a scheme to erect additional accommodation at the Workhouse. The scheme, as designed by Mr. E. L. Lunn, comprises alterations to the men's quarters so as to provide additional accommodation for thirty inmates, a new house for the master and matron, and the alteration of the central portion of the administrative block so as to provide bathrooms for each sex and bedrooms for the officers. An approximate estimate of the probable cost of the proposed alterations is 1,800*l*.

BUILDING WORK AT MAIDSTONE.

The Maidstone Urban District Council have on certain conditions given their approval to the plans of the following:—St. Philip's-avenue, four houses, for Messrs. Clarke & Epps; Hastings-road, five houses, for Messrs. Clarke & Epps; Union-street, bay window, for Mr. G. Barney; St. Michael's-road, addition to house, for Miss Coveney; and Tonbridge-road, house, for Mr. Frederick Corfe.

TRADE NEWS.

Messrs. Meggitt & Jones, timber importers (Cardiff and Barry), have recently acquired extensive premises at East Tyndall-street, East Moors, Cardiff, and are therein storing considerable quantities of timber—red deals, spruce deals, floorings, pitch-pine, oak, etc. They have also erected on this site large sawing, planing, and moulding mills.

Messrs. O'Brien, Thomas, & Co. have recently supplied D. O. Boyd "Hygiastic" ventilating grates to Trent Bridge new Council school, Nottingham; St. Mary's Roman Catholic Schools and Homes, North Hyde, near Southall; and St. Winifred's new Roman Catholic School, East Ham.

The Contract for the heating, ventilation, and hot-water service installation for the new Workhouse Infirmary, Norwich, has been secured by the Brightside Foundry and Engineering Company, Ltd., of Sheffield, London, and Birmingham.

The Improved Wood Pavement Company, Ltd., have some very extensive contracts in hand for their creosoted deal paving.

The Salford Corporation has resolved to adopt motor fire apparatus, and his decided to purchase two Merryweather "Hatfield" petrol motor fire-engines, each of a capacity of 450 gallons per minute. Both of these will be arranged to carry a fire-escape. The treble barrel-pump employed on this design of motor fire-engine is of the reciprocating type, and has been selected by the Salford authorities in preference to pumps of the turbine or series-centrifugal type. Salford is the fourth Lancashire town to adopt the "Hatfield" motor fire-engine, others being in service at Wigan, Rochdale, and Radcliffe, while it is also the latest type to be adopted by the London Fire Brigade.

The extensions to Napier Hospital, New Zealand, are being warmed and ventilated by means of Shorland's patent Manchester stoves, with descending smoke flues, and special inlet ventilators, supplied by Messrs. E. H. Shorland & Brother, of Manchester.

Messrs. A. & F. Manuelle, granite quarry owners, have supplied the Cornish granite for the new Harbour Offices, Yarmouth.

Messrs. E. A. Roome & Co., builders and contractors, have secured the contract for the erection of a country house and stables at Ashtead, the architects being Messrs. Whitfield & Thomas.

Some new quarter-chimes have been fitted to the clock of the parish church of Buckminster, near Grantham. The work has been carried out by Messrs. John Smith & Sons, Midland Clock Works, Derby, who have also lately received an order from Sir William Hartley for a large clock for Colne, Lancashire.

Messrs. Turnbull & Son are erecting at Baltic Wharf, Thomas-street, Limehouse, a factory for the British Radium Corporation, Ltd., the foundation-stone of which was laid on Saturday last by Lady Ramsay. This is stated to be the first factory of the kind erected in this country for the production of radium. The consulting engineers are Sir Douglas Fox & Partners.

Stained Glass & Decoration.

ST. ANNE'S CHURCH, BISHOP AUCKLAND.

The large east window of this church has just been filled with stained glass by Messrs. Percy Bacon & Brothers, of London. The window consists of three lights, and each light is divided into two tiers. The upper portion of the central light contains "Our Lord as Priest and King, Reigning on the Tree," and below are the two figures of the B.V. Mary and St. Anne; in the upper tiers of the side lights are St. Thomas in the left-hand light and St. Philip in the right, while below these are Bishop Cosin on the right and Bishop Butler on the left. The same artists have also put up a stained-glass window in Hessle Church, Yorkshire. This is a two-light window in the side chapel, the subject depicted being "Christ Healing the Blind Man."

Sanitary and Engineering News.

RECONSTRUCTION OF FERRY, EGREMONT, LIVERPOOL.

The new pier and landing-stage at Egremont have now been completed. The pier, which extends some 650 ft. from the shore, has iron piles filled with ferro-concrete, thus adding considerable strength to the structure. The deck of the pier is also of ferro-concrete. An iron bridge 150 ft. long, 16 ft. wide, and weighing about 70 tons, connects the pontoon and the end of the pier. Mr. J. J. Webster, M.Inst.C.E., was the engineer to the work.

PETERSFIELD WATERWORKS.

The Petersfield Urban District Council have decided to augment their existing waterworks, as in dry summer weather their consumption very nearly approached the available supply. The Council have now decided to increase their supply of water from copious springs issuing at the foot of the chalk escarpment, and have engaged Mr. Harry W. Taylor (Messrs. Taylor, Wallin, & Taylor, Newcastle-upon-Tyne and Birmingham) as their engineer for the design and execution of the works.

WEST FIFE WATER SUPPLY.

The scheme of water supply that the Dunfermline District Committee of the Fife County Council and the Admiralty are carrying out for the western district of Fife is now in its finishing stages. An idea of the magnitude of the works may be obtained from the following statistics:—The top water level will be 940 ft. above Ordnance datum, the area of the water surface will be 41 acres, the land taken for the reservoir was 53 acres, the maximum depth of the reservoir will be 59 ft., the embankment is 900 ft. long, the maximum height of the embankment is 65 ft. (with a width at the base of 363 ft. and of 38 ft. at the top), the capacity of the reservoir will be 205,000,000 gallons, the area draining into the reservoir is 1,377 acres, varying in levels from 940 to 2,100 ft. above Ordnance datum. The scheme, which is expected to cost over 160,000*l*., was designed by Mr. (afterwards Sir) William Copland, Glasgow, and since, shortly after his death, the supervision of the work has been entrusted to Mr. John D. Parker.

THE ROYAL SANITARY INSTITUTE.

At an examination of inspectors qualifying for membership, held at Liverpool on October 8 and 9, 1909, one candidate presented himself, and was granted a certificate, viz., E. A. G. Campbell (Brockley). At an examination in Sanitary Science as Applied to Buildings and Public Works, held at Liverpool on October 8 and 9, 1909, three candidates presented themselves, and the following two candidates were granted certificates:—Pindi Das Sabherwal (London); Percy Skelding (Montpelier).

EDINBURGH WATER SUPPLY.

The Edinburgh and District Water Trustees have had mechanical filters installed at their works at Fairmilehead. The process adopted by the Trust is that of Messrs. Bell Brothers, Ravensthorpe, Yorkshire, and known as the Bell patent process. Twelve of these filters have been fitted up. They are constructed of mild steel shells, 8 ft. in diameter, the bottom of the shell being fitted with strainers and piping set in concrete for collecting the water while filtering through the sand, with which the shells are about three-parts filled. Inside the filter are placed vertical hollow shafts, which are fitted with horizontal perforated wash-arms, so as to allow of jets of water being forced into the sand-beds when being washed. The beds are composed of silver sand, which is automatically graded when being washed. Each filter deals with from 6,000 to 10,000 gallons per hour. In the cleansing of the filter-beds by Bell's system, paddles are used to break up the bed and loosen the dirt, the paddles revolving at the rate of 80 ft. per minute. Chambers for the storage of the filtered water have been formed in the rear of the building containing the filters, capable of storing about three-quarters of a million gallons of water. The filters cost 5,000*l*., and the cost of the buildings and the water storage accommodation is estimated at about 10,000*l*.

PROPOSED BRIDGE, KIRKSTALL.

On the 8th inst. Mr. A. G. Drury, Inspector to the Local Government Board, held an inquiry at the Leeds Town Hall into an application of the Leeds Corporation for power to borrow 15,737*l*., the estimated cost of a new bridge over the River Aire, at Kirkstall. According to a statement read by Mr. Thomas Thornton, Deputy Town Clerk, the bridge at present in existence is an old structure, crossing the river near Kirkstall Railway-station, on the old main road between Leeds and Bradford. The new bridge will have three

Digitized by Google

spans each of 46 ft. 8 in., and the piers will each be 8 ft. wide, giving a total span of 156 ft. between the abutments, and a net waterway of 140 ft.

BURNTISLAND WATER SUPPLY.

The Burntisland Town Council has resolved to excavate and deepen the shallow parts at the margin of their reservoir. Plans for the work have been prepared by Mr. J. A. Waddell, Burgh Surveyor, and the tender of Mr. A. H. Robertson, Inverkeithing, has been provisionally accepted.

Miscellaneous.

THE OBSERVATORY ON MONT BLANC.

The second observatory, built at great cost in 1890-92 by Janssen on the summit of Mont Blanc, has had to be demolished, as it was placed on the glacier, and had gradually sunk into it. The demolition was carried out in a comparatively short time, and the costly instruments were saved. The work was conducted by the French savant Vallot, the builder of the first observatory, erected in 1889, somewhat lower down and on rock. This one has remained intact up to the present day.

A NEW BRIDGE OVER THE TIBER IN ROME.

It is proposed to throw another bridge over the Tiber to connect the Piazza d'Armi with the quarter known as Albero Bello, both of these open spaces being the site of the proposed exhibition of 1911. Out of five projects submitted by the largest engineering firms of Italy, that of the Porcheddu Society was selected. The bridge will be built of ferro-concrete on the Hennebique system, and will consist of one large circular arch, of 100-metres span, and will be 10 metres in width. The work will be completed in sixteen months, and cost 1,250,000 lire, or 410 lire per square metre (arch and approaches included). The other estimates varied from 426 to 536 lire per square metre.

THE FADES VIADUCT.

A gigantic viaduct has recently been completed in Auvergne, on the Saint Eloi-Pauniat Railway line. This viaduct, constructed of iron, rests on masonry piers, which are the highest in the world. The rail lies 132½ metres about the bed of the valley. The total length of the construction, which crosses the valley of the Sioule, a tributary of the Allier, is 465 metres. The viaduct consists of three bays; the central one measures 144 metres, the side ones 116 metres each.

INARTISTIC MEMORIAL TABLETS.

At a recent meeting of the Carlisle Consistory Court, the Worshipful Chancellor Prescott had before him a petition by Major Fetherstonhaugh, of The College, Kirkoswald, praying for a faculty to place on the south wall of the chancel of the parish church of Kirkoswald a tablet to the memory of his father, the late Timothy Fetherstonhaugh, D.L., who died in 1908.—The Vicar, the Rev. R. Duncan, in supporting the application, said the family had had a very long connexion with the parish, and had always been very good friends of the church. There was ample room for the proposed tablet on the south wall of the chancel. There were several other tablets of the same class there already, the last one having been put up about 1847.—The Chancellor: Do you think it will add to the beauty of the chancel?—The Vicar: There is just a bare wall.—The Chancellor: Yes, but the bare wall of the ancient chancel of Kirkoswald, a rather famous church.—The Vicar: I would prefer to see this memorial tablet.—The Chancellor: Is it not rather going back to the dark ages to erect a tablet of this character?—The Vicar: There are several there now.—The Chancellor: But they date from the dark ages. Is it in the minds of the parishioners and the Vicar that there will also be, as shown in the plan, this ghastly black border round the tablet?—The Vicar: I do not say that these tablets are to be commended, but there are several now in the chancel, and you won't by any manner of means make it worse than it is. As I said before, I would personally rather see the tablet than the bare wall.—The Chancellor: That is to say, that if you decorate or desecrate the wall of an ancient church with half a dozen tablets, one more would only be another, and the wall would accommodate it?—The Vicar: The tablets may not be very nice-looking, but one more would not make the thing any worse. This memorial is quite in keeping with the others.—The Chancellor said he could quite believe that. He could quite understand, too, the family wishing to put up a memorial to the deceased in this ancient chancel, but he thought we had got to an age or a century when there was more artistic taste and more desire to have memorials which were put in a church really beautiful and ornamental. He had since he had presided in that court had some very beautiful memorials before him, and he had no doubt that one such, or a design for such, could easily be procured. It was unfortunate that the one now proposed should be described as like those which were put up in the XVIIth, XVIIIth and XIXth centuries. He would adjourn his decision until the November court, and he hoped that in the meantime the Vicar and Major Fetherstonhaugh would consult as to whether some memorial more in accordance with the spirit of the age, and with the character of the church and the chancel, could not be provided.

BANNER, CHURCH CONGRESS.

The processional banner used in the Congress at Swansea and given by ladies resident in the diocese was made by the Welsh Industries Association School of Art Needlework at Cardiff, after designs by Mr. J. N. Comper. The banner has four divisions of red and yellow damask silk, set chequerwise, on which is a figure of St. David in episcopal robes, within four shields of the coat-arms of Swansea, and the sees of Canterbury, Llandaff, and St. David. The four pennants, countercharged in yellow and red silk, bear eight lions in red and gold, each pair forming the shield of Wales.

A "CUP AND RING" STONE.

By the kindness of Sir R. G. Musgrave, Bart., the Carlisle Museum has come into possession of one of the "cup and ring" marked stones, of which examples have been found from time to time in Cumberland and Westmorland. The one in question was discovered in June last upon the banks of the River Eamont, near Edenhall, upon a farm known as "Honeypot." It has nineteen double concentric circles, enclosing in each case a cupped depression, most of which are surrounded by a continuous groove. The stone is of hard whinstone—an unquarried and undressed boulder with a flat under surface bearing deep scratches, apparently glacier marks, and one side eroded by the action of water. An interesting example of this class of stone was found in 1881 by Dr. M. W. Taylor at Redhills, near Penrith, and is described in the *Transactions* of the Cumberland and Westmorland Society of Antiquaries. In this case the cup and ring marked stone formed the cover of a "kistaven" containing cremated remains.

FOWEY CHURCH, CORNWALL.

At a recent Consistory Court held at St. Austell, Mr. R. M. Paul, Chancellor of the Diocese of Truro, granted a faculty for the erection of a chancel screen in the parish church of Fowey. It was stated that the screen, which had been designed by Mr. E. H. Sedding, would cost about 450*l*. It would be an open screen, so as to obstruct the view as little as possible; it was not proposed to place any figures on it. There was evidence that a screen had existed in the church in ancient days. The one now proposed was intended as a memorial.

FITZWILLIAM MUSEUM, CAMBRIDGE.

A loan collection now to be seen in the museum embraces exhibits illustrative of the typographical productions of William Morris, and drawings by Rossetti, J. F. Millet, and Hokusai. Portraits of Edward Fitzgerald, by James Spedding, and of Rossetti, Swinburne, and Browning, by Rossetti, have just been acquired for the museum.

ST. PAUL'S CHURCHYARD.

The drinking-fountain, which was placed in the churchyard thirty years ago, has been presented by the Corporation to Hornsey Borough Council for re-erection in the Middle-lane Recreation-ground. The site is required to make room for the building, after designs by Mr. Reginald Blomfield, A.R.A., of the Paul's Cross memorial. The cost of the memorial is defrayed out of a legacy of 5,000*l*. to that intent bequeathed by the late H. C. Richards, K.C., M.P. The actual site of the Cross, close to the north-east angle of the Cathedral, is plotted in the plan published in our number of January 2 last. It lies within the old burial-ground of St. Faith's Church; the foundation-stones, laid octagon-wise, were discovered some years ago by Penrose, when the graveyard was laid out as a public recreation garden. Some historical particulars of Paul's Cross are given in the *Builder* of February 13 last.

CROSBY HALL.

The work of re-erecting Crosby Hall is making good progress. The houses in Danvers-street have been demolished, and the excavation of the foundations is nearly completed. The actual work of putting up the building is expected to commence shortly, and the new stonework to take the place of the rubble walls is being carefully prepared.

THE DETERIORATION OF PUTTY.

Putty of the best quality is a mixture of fine whiting and pure linseed oil, but owing to the high price of linseed oil some manufacturers are using linseed oil mixed with a cheaper oil. In order to meet the requirements of those architects and builders who are willing to pay for the higher-grade material, Messrs. Storry, Witty, & Co., Ltd., of Hull, are making a special brand of putty which they call "Stority" putty, which they guarantee is made with fine whiting and pure linseed oil only. A sample of this "Stority" putty has been sent to us, and it certainly appears to be of very good quality.

GOVERNMENT BUILDING CONTRACTS.

During the past month the following contracts were accepted by the Government Departments named:—War Office—Alterations, etc., to Hutment Buildings, R.E. Lines and R.E. Office, Longmoor, Messrs. Wigginton & Sons, St. Thomas-street, Portsmouth; addition to central workshop, Burscough, Mr. G. L. Desoer, Everton-road, Liverpool; dining and recreation hut and married quarters hut, Crosby Point Battery, Mr. J. Ridyard, Railway Saw Mills, Ashton-under-Lyne; erection of married soldiers' quarters, Burscough, Mr. R. Thompson, Dalton-square, Lancaster; erection of superstructure of cadet blocks, R.M. College, Sandhurst, Mr. T. Rowbotham, 560, Coventry-road, Birmingham; erection of principal foreman's quarters, Pembroke Dock, Messrs. Davies & Griffiths, King William-street, Pembroke Dock; erection of stables, Netheravon, Messrs. W. E. Chivers & Sons, 29, Sheep-street, Devizes; feltwork at Royal Arsenal and dockyard Woolwich (running contract), Messrs. F. McNeil & Sons, Lamb's-buildings, Bunhill-row, E.C.; improvements and additions to married quarters, Winchester, Mr. J. Hunt, South Wharf, Cleveland-road, Gosport; married quarters, Mullingar, Frazzi Fireproof Construction Company, Ltd., Essex Wharf, Whitechapel, E.; periodical works services, Enniskillen, Messrs. A. Bagnall & Sons, Shipley, Yorks; Caterham, Mr. D. E. Hutton, Shipley, Yorkshire; Wellington Lines, Aldershot, Messrs. Crosby & Co., Farnham, Surrey; provision of annexes to Families' Hospital, Netley, Mr. J. Hunt, South Wharf, Cleveland-road, Gosport; provision of annexes to married quarters, Cork Barracks, Mr. T. Kelleher, 4, Millend-street, Cork; rebuilding part of Ross Barracks, Shorncliffe, Messrs. G. Lewis & Sons, Widred-road, Dover; reconstruction of drainage at Ayr Barracks, Messrs. D. & J. Milligan, 46, Kyle-street, Ayr; reconstruction of drainage, Warrington Barracks, Mr. W. P. Meikle, 67, Dale-street, Liverpool; reconstruction of drainage, Perth, Messrs. Beat Brothers, 63, Canal-street, Perth; reconstruction of No. 3 store, H.M. Gunwharf, Portsmouth, Kleine Patent Fire Resisting Flooring Syndicate, Ltd., 136, High Holborn, W.C.; repair to roof of drill shed, Blenheim Barracks, North Aldershot, Messrs. G. R. Speaker & Co., 29, Mincing-lane, E.C.; slate beds to sewage farm, Curragh, Mr. L. A. Dibdin, Howick-place, Victoria-street, Westminster, S.W. General Post Office—Lay and joint lines of cast-iron pipes, Glasgow, Messrs. Greig & Matthews, 35, Queen Victoria-street, E.C.; between Penzance & Porthcurno, Messrs. Woodman & Son, Bartholomew-street East, Exeter; near Stockton, Messrs. Bennie & Thompson, 80, Liverpool-road, Warrington; lay and joint lines of cast-iron pipes and earthenware ducts in Paddington, Messrs. Fry Brothers, Lion Wharf, Greenwich, S.E. Office of Works, etc.—Building, Park-street, Windsor, Mr. Thomas Higgs, Moore-street, Northampton; new post-office, Winchester, Mr. W. E. Blake, Plymouth; extension of G.P.O., Edinburgh (fourth contract), Messrs. James Millar & Son, Millar-place, Edinburgh; new roofs, Victoria and Albert Museum, Messrs. Hall, Beddall, & Co., Pitfield Wharf, Waterloo Bridge, S.E.; new staircase, Royal Courts of Justice, Messrs. Foster & Dicksee, Ltd., Rugby; extension of lavatories, London University, Messrs. J. & M. Patrick, Point Pleasant, Wandsworth, S.W.; extension of Director's office, Natural History Museum, Messrs. J. Simpson & Son, 45, Paddington-street, W.; fireproofing, National Gallery, Messrs. W. Moss & Sons, Ltd., Queen's-road, Loughborough; fittings, British Museum, Messrs. Hall, Beddall, & Co., Pitfield Wharf, Waterloo Bridge, S.E.; heating apparatus, etc., Admiralty, Block IV., Messrs. G. N. Haden & Sons, Trowbridge; Bristol Post Office, Messrs. John Legg & Son, Nelson-street, Swansea; Liverpool Government buildings, Messrs. Mackenzie & Moncur, Ltd., Balcarres-street, Edinburgh. Office of Woods, etc.—New cottages and farm buildings, and alterations to existing cottages at Billingborough, Lincs. Mr. A. F. Freeman, 31, Railway-road, King's Lynn. Commissioners of Public Works, Ireland—Additions and alterations to General Post Office, Belfast, Messrs. Robert Corry, Ltd., 106, University-street, Belfast; fireproof flooring at General Post Office, Belfast, the

Digitized by Google

Irish Armoured Tubular Flooring Company, Ltd., Cooke-street, Belfast; additions and alterations to General Post Office, Dublin, Messrs. Alexander Hull & Co., Ringsend-road, Dublin; fireproof flooring at General Post Office, Dublin, the Irish Armoured Tubular Flooring Company, Ltd., Cooke-street, Belfast; additions and alterations to Royal Hibernian Military School, Phœnix Park, Dublin, Messrs. Alexander Hull & Co., Ringsend-road, Dublin. Metropolitan Police—Alterations at Vine-street Police-station, Messrs. Higgs & Hill, Ltd., Crown Works, South Lambeth-road, S.W.; new police-station at Northwood, Mr. C. F. Kearley, High-street, Uxbridge; new police section house, Beak-street, Messrs. Kilby & Gayford, Ltd., 87, Worship-street, E.C.; temporary iron building at the candidates' section house, Kennington-lane, Messrs. Croggan & Co., Ltd., 16, Upper Thames-street, E.C.

BRITISH CEMENT IN BRAZIL.

In an exhaustive review of the trade and commerce of Brazil, Mr. Cheetham, secretary of H.M. Legation at Rio de Janeiro, states that Portland cement is the only imported article in which the British share of import trade shows a marked increase. The important harbour improvement works in hand in various parts of Brazil and the extensive building operations incident on street improvement in Rio have created a much larger demand for supplies of cement. In the harbour works British cement is almost exclusively employed, but the foreign brands—German and Belgian—are those most frequently found on the market. It would seem (he adds) that British cement makers would do well to make an attempt to capture some share of the building demand, as their product is little known in the open market, so that its superiority fails to recommend it.

WAR MEMORIAL, WINCHESTER CATHEDRAL.

A four-light window and four inscribed brass tablets have been placed in the cathedral in memory of the officers and men of the 60th King's Royal Rifles who fell in the South African campaign, 1899-1902. The eight panels, in two groups, of the window, executed by Mr. Tower, of Messrs. C E. Kempe's successors, depict scenes in the life of St. George and his association with Windsor Castle.

Capital and Labour.

EMPLOYMENT IN THE BUILDING TRADES.

Employment in September was slack. It showed some seasonal decline, but was rather better than a year ago. The percentage of trade union carpenters and joiners unemployed at the end of September was 10·8, as compared with 9·6 a month ago and 12·3 a year ago; and for plumbers, at the same dates, the percentages were 13·3, 13·3, and 11·7 respectively. These percentages were always exceeded in the northern counties and Scotland, and in the case of the plumbers the increase in the percentage unemployed compared with a year ago is mainly confined to these two districts. Returns received from bricklayers, plasterers, painters, and labourers unions show a slight decline compared with a month ago, stone masons showing little change. For London the trade union returns show that 12·3 per cent. of carpenters and joiners were unemployed at the end of September, as compared with 10·0 a month ago and 13·2 a year ago. The percentage for plumbers (13·2) was the same at all three dates. Returns received from 688 firms employing 39,101 workpeople at the end of September show that there was a decrease of 4·0 per cent. in the total number employed by them as compared with a month ago, and a decrease of 4·7 per cent. as compared with a year ago. The decrease compared with both a month ago and a year ago was most marked in London, the Midland and Eastern Counties, and Scotland.—*Board of Trade Labour Gazette.*

Law Reports.

ARCHITECTS AND BUILDERS SUED FOR ALLEGED NEGLIGENCE.

IN the King's Bench Division on the 13th and 14th insts, the case of Shoolbred *v.* Wyles and others came before Mr. Justice Grantham and a special jury, in the King's Bench Division—an action brought by Mr. Claude Frederick Shoolbred, of Greenstead Hall, Halstead, Essex, an accountant, against Mr. J. W. Wyles and Mr. Alphonzo Migotti, architects, and Messrs. Mitchell Brothers, builders, of Shalford, Surrey, for damages for alleged negligence and breach of duty in carrying out alterations at the plaintiff's house, Greenstead Hall.

Mr. J. R. Atkin, K.C., and Mr. Valentine Bell appeared for the plaintiff; and Mr. Marshall Hall, K.C., and Mr. R. E. Moore for the defendants.

Mr. Atkin, in opening the case for the plaintiff, stated that in 1906 the plaintiff, wishing to make certain alterations to Greenstead Hall, appointed Messrs. Wyles & Migotti, a firm of architects, to prepare the necessary drawings, specifications, and the bills of quantities. Mrs. Shoolbred had her boudoir below the nurseries, and she wished the floor sound of those apartments to be deadened. Lime-pugging was used for that purpose. When putting pugging underneath floors it was very necessary when it was put in that there should be a complete ventilation. If that was not done, then the damp mortar would cause the boards and woodwork to rot. The pugging was put in in April, 1908, and plaintiff afterwards entered into possession of the house early in 1908. Something went wrong with the electric bells under the floors, and the plaintiff's chauffeur, who was called in, found the nursery floors were damp. Plaintiff, before going to Frinton for Easter in that year, called in a local builder named Sudbury, who found such extensive dampness and dry rot that he summoned the plaintiff back from Frinton. An interview then took place between plaintiff, Mr. Migotti, and Mr. Mitchell, and Mr. Migotti, when parting with the plaintiff on that occasion, said that Mr. Wyles and himself would have to pay part of the cost of the renewal work. The joists and floor were in such a state that it was necessary to remove every inch of woodwork. Mr. Sudbury's bill and the cost of fresh linoleum involved a further expenditure of 125*l.*

In reply to his lordship, Mr. Marshall Hall stated that the architects undertook no responsibility for the pugging. They never gave the order for it, and the floor was pugged without their consent and knowledge.

His lordship said it seemed incredible that Mr. Migotti, who was frequently at the house, did not know that lime-pugging had been put in.

Mr. Marshall Hall replied that both architects would swear they did not know it was laid.

His lordship said it seemed incredible that it was done without their knowledge unless it was done at night. The origin of the difficulty was that the day and night nurseries were put over the boudoir.

Mr. Marshall Hall said that was the plaintiff's order.

The plaintiff was then examined in support of his case. He said he had paid the architects under the contract 5 per cent. and out-of-pocket expenses. In October, 1906, after the contract was signed, he had an interview at Greenstead Hall with Mr. Migotti, Mr. N. Mitchell, and the latter's foreman. He then spoke to Mr. Mitchell as to something being done to deaden the sound of the nurseries. Mr. Mitchell said to Mr. Migotti that pugging had better be used, and he left the two to consult upon the matter. He (witness) repudiated the suggestion that he gave any orders concerning the pugging to the foreman. Mr. N. Mitchell and Mr. Migotti visited the hall after Mr. Sudbury had pulled the floor up, and Mr. Mitchell asked Mr. Sudbury what was the cause of the dry-rot. Mr. Sudbury replied that it was owing to the pugging being in a damp state when the floor-boards were put down. Mr. Migotti did not disclaim any responsibility, but he justified the use of the pugging by saying it was used in the best houses in Park-lane. Then Mr. Migotti said it would end in Mr. Wyles and himself having to contribute part of the cost. The repairs took four weeks, and on that account he had to hire a furnished house at Frinton at 10*l.* 10s. a week. A new linoleum cost him 14*l.*

Cross-examined,

He could not say that an interval of three months elapsed between the putting in of the pugging and the laying down of the floor. He could not accept the view that the delay was owing to his having selected a special and costly kind of wood, which was not put down because it was necessary the workmen should not damage it.

Mr. Frank Sudbury, builder, of Halstead, gave evidence as to pulling up the floor and finding that the joists were all rotten, and that fungus had started growing on part of the pugging. The wood was fit for nothing, and it was destroyed. He considered that the dry-rot was due to the fact that the floor was laid before the pugging was dry. He put in a dry pugging of silicate cotton, as he disapproved of lime-pugging altogether.

Reuben Edwards, formerly a bricklayer's labourer employed at the hall during the alterations, gave evidence as to the preparation of the pugging. He said it was prepared by him in October, and left outside in the open till the following February, and when he took it upstairs in the hod it was so sloppy from the rain that it fell over him.

Mr. H. Chatfeild Clarke, architect and surveyor, examined, said he attributed the dry-rot to want of ventilation. Pugging was dangerous stuff unless properly ventilated. He agreed that it was dangerous to put linoleum on a new floor. The linoleum might have aggravated the trouble, but the real trouble was due to the damp pugging being covered with boards before being dry.

Mr. Saunders, an architect, corroborated the evidence of the last witness.

This being the plaintiff's case, Mr. Marshall Hall, in opening the case for the defendants, said that the architects saw nothing of the pugging, that matter being settled between the builders and the plaintiff. The story about the making of the pugging was absolutely untrue. The flooring was not put down until three months after the pugging was laid, which was simply covered with scaffold boards. The fact that there was dry-rot in the room where the linoleum was laid, and none in the adjoining rooms, where there was no linoleum, but where the joists and floor-boards were the same, proved that the dry-rot was entirely due to the linoleum.

Mr. J. W. Wyles, one of the defendants, examined, said he had had fifteen years' experience as an architect. He did not know of the lime-pugging having been put in till he heard of the dry-rot. He did not approve of it, and if put in the place should have been ventilated. The trouble was due to the linoleum.

Mr. Paul Ogden, an architect, examined, said that while moisture induced dry-rot, the spores of the fungus were in every piece of cut timber. Lime was an antiseptic to dry-rot, and it was a safe thing to use. He was of opinion that the linoleum caused the dry-rot at Greenstead Hall, because it appeared in those rooms where the linoleum was laid, and not in those where it was not laid, notwithstanding that the wood and the joists were the same.

Mr. Alphonzo Migotti, a defendant, also gave evidence to the effect that he was not told that lime-pugging had been used until after the contract was completed. He also denied the statement that he said he and Mr. Wyles would have to bear part of the cost of the repairs. The trouble was caused by putting down the linoleum and stopping the current of air through.

Mr. William H. Brown, examined, said he was builder's foreman in the employ of Messrs. Mitchell, and that he worked more under the orders of the plaintiff than of the architect. It was the plaintiff who gave him the order for putting in the pugging. Plaintiff was constantly giving him orders. No one but witness was present in the room at Greenstead Hall when the plaintiff gave him the order for the pugging. He made a note of the order in his rough book, and then afterwards copied the entry in his diary. Pugging was made in the same way as plaster. The pugging was put between the joists in the first week in November, and it was absolutely false to say it was like thick milk. He superintended the putting in of the pugging, which was allowed to dry for three months before the flooring was put down. When the floor-boards were put down the first one was kept 1½ in. clear of the wall, and that provided for all the ventilation that was necessary. The architects at no time could have seen that pugging had been put in. He was in the house when the linoleum was laid, and the fact that it was put down with Stick-phast stopped all ventilation.

Cross-examined,

He did not advise the plaintiff that the linoleum was likely to cause danger, because his advice about other things had been disregarded.

Mr. N. Mitchell, junior partner in the firm of Messrs. Mitchell Brothers, gave evidence to the effect that the architects had never authorised him to put in pugging, and witness did not think he had ever mentioned the matter to them. He did not remember any interview at plaintiff's house in which witness consulted with Mr. Migotti as to the pugging. The putting in of the pugging was satisfactorily carried out, and it was dry when the floor was laid.

Mr. Edward Mitchell, senior partner in the firm of Messrs. Mitchell Brothers, examined, said it was not necessary to provide any further ventilation than was originally arranged for. He had never before experienced dry-rot from lime-pugging. There never would have been dry-rot in the present instance except for the laying of the linoleum, which was cemented down. The dry-rot was not in any way due to the pugging. He should not have advised a client under such circumstances to put down linoleum.

Mr. Edward Lunn, an architect, examined, said that in his opinion lime-pugging was a good sound "deadener." He attributed the dry-rot to the use of linoleum.

Digitized by Google

Mr. C. J. Newby, a builder, of Enfield, having given evidence, the defendants' case closed.

Mr. Marshall Hall, addressing the jury on behalf of the defendants, submitted that there was not a particle of evidence to show that Mr. Wyles and Mr. Migotti had any knowledge that pugging had been put in. Nobody knew what caused dry-rot, how to cure it, or how to prevent it. They did know, however, that when linoleum was used on a new floor, and when it was stuck, as in this case, dry-rot resulted. If, as he suggested, the linoleum caused the dry-rot, then the defendants were not guilty of negligence. Before the Jury gave a verdict against the defendants, they must be satisfied that the dry-rot was caused by the damp pugging, and that the use of it amounted to negligence on the part of the architects and the builders. He submitted that as against the architects there was absolutely no case, and against the builders the only evidence was that of two casual labourers.

Mr. Atkin, having replied on behalf of the plaintiff,

His lordship, in summing up the case to the jury, said it was unfortunate that the action had been brought, because all the parties, who were honourable men, had been charged with telling untruths. It was three years since the matters connected with the dispute arose, and though conflicting statements were made, it did not necessarily mean that perjury had been committed. After such a length of time it was only natural that mistakes should be made. The question was whether negligence had been proved against the defendants or any of them. He submitted that it had not.

In the result, the jury returned a verdict in favour of the plaintiff for 165*l.* damages, but found that the architects were only guilty of negligence in a minor degree.

Judgment was entered accordingly.

Patents.

APPLICATIONS PUBLISHED.*

12,979 of 1908.—Robert Adams: Closing and checking appliances for doors and the like.

17,634 of 1908.—William O'Keefe and Stephen Strettles: Machines for use in drawing patterns in moulding.

20,008 of 1908.—Die Firma Maschinenfabrik Wiengarten vorm Hch. Schatz. Akt-Ges: Machines for shearing sectional iron.

20,263 of 1908.—Arthur Martyn and James Edwin Gill: Moulding patterns and designs on composition surfaces.

20,345 of 1908.—William Edward Curran: Fire-bridges for furnaces.

20,398 of 1908.—Frederick Cottrell: Glass bevelling machines.

20,701 of 1908.—Andrew Robertson: Apparatus for conveying, screening, and delivering materials of all kinds.

23,479 of 1908.—John Strutridge Dreadon: Grindstone.

24,007 of 1908.—George William Johnson (Chemische Fabrik Greisheim Elektron): Preparation of iron or steel for casting.

25,461 of 1908.—John Joseph Rawlings, Henry William Handcock, and Alfred Herbert Dykes: Fixing of electric fittings such as switches, ceiling roses, and the like.

26,942 of 1908.—Augusta Amelia Gleitsmann: Building slabs.

665 of 1909.—Bernhard Nast: Construction of walls.

4,889 of 1909.—Bernhard Kaufmann: Shop counters.

5,529 of 1909.—William Sutherland, William Sparrow, and John James Storey: Devices for securing the shafts, shanks, or handles of tools and implements such as hammers, axes, adzes, pick-axes, mauls, mallets, shovels, and the like.

9,268 of 1909.—John Frederick Webb and Percy Tarbutt: Agitating devices for use with gritty materials.

10,464 of 1909.—George Austen: Brick-making machines.

10,850 of 1909.—Isaac Henry Storey and William Edward McCalla: Enamel-faced bricks, slabs, wall-tiles, and the like.

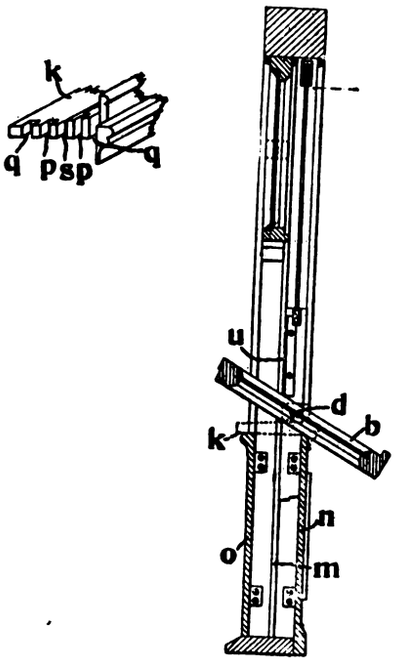
11,652 of 1909.—Richard Bowes: Household firegrates.

13,760 of 1909.—Vereinigte Pinsel-Fabriken: Method of making painters' brushes and the like with an oval metal clip, and apparatus therefor.

19,965 of 1909.—Otto Strigel and Karl Holste: Pipe connecting-piece for pipes in central heating systems.

SELECTED PATENTS.

9,100 of 1908.—Clifton West: Windows. This relates to windows with pivoted sliding sashes, which are provided with a compartment *m* beneath the movable sill *k*, into which one or both sashes may be lowered. The compartment *m* may have inner and outer folding doors *n*, *o*, which can be thrown open so as to provide a free passage when both sashes are raised. The sash *b* turns on pivots *d*. The removable sill *k* is provided with notches *q s*



to engage the stop and parting beads, and notches *p* to allow the passage of sash-cords. The sliding stiles are fitted with angle-irons *u* to form stops for the pivoted sashes, which are secured in a vertical position by sliding bolts. The sliding stiles alone may be lowered into the compartment to allow the sashes to be cleaned from the floor.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 7.—By H. S. HAWLEY & Co.

Stamford Hill.—87, Dunsmure-rd., u.t. 74 yrs., g.r. 8*l.* 8s., y.r. 45*l.* £400
72, Linthorpe-rd., u.t. 79 yrs., g.r. 7*l.* 10s., y.r. 46*l.* 425

By MARTIN, WHITE, & Co.

Dulwich.—87, Pellatt-rd, u.t. 70 yrs., g.r. 12*l.*, p. 490
1, Rye-villas, u.t. 69 yrs., g.r. 7*l.* 7s., p. 230

By STIMSON & SONS.

Old Kent-road.—23, Albany-rd., f., w.r. 41*l.* 12s. 420
3, 4, and 5, Willowbrook-gr., f., w.r. 105*l.* 6s. 960
Marlborough-rd., f.g. rents 6*l.* 13s. 6d., reversion in 41 yrs. 160
Peckham.—76 and 78, East Surrey-gr., f., w.r. 61*l.* 2s. 580
2, 6, 8, and 10, Sunwell-st. (off-licensed premises, etc.), u.t. 37½ yrs., g.r. 24*l.*, y. and w.r. 128*l.* 4s. 700
4, Sunwell-st., u.t. 57½ yrs., g.r. 4*l.* 10s., w.r. 32*l.* 10s. 175
12, 14, 16, and 18, Sunwell-st., u.t. 37½ yrs., g.r. 24*l.*, w.r. 130*l.* 480
Walworth.—31 to 43, 45 to 53, Bedford-st., u.t. 52½ yrs., g.r. 88*l.*, w.r. 600*l.* 12s. 3,025
86 and 88, South-st., u.t. 59½ yrs., g.r. 10*l.*, w.r. 72*l.* 16s. 370
76 and 78, South-st., u.t. 52½ yrs., g.r. 8*l.*, w.r. 78*l.* 400
132 to 140 (even), Portland-st., u.t. 59½ yrs., g.r. 25*l.*, w.r. 169*l.* 10s. 765
Kennington.—1, 3, and 5, Otto-st. (s.), u.t. 40½ yrs., g.r. 19*l.* 10s., y.r. 93*l.* 12s. 660

By HENRY H. COLLIER & MADGE (at Birmingham).

Birmingham.—Carver-st., f.g.r. 4*l.* 18s. 6d., reversion in 14 yrs. 380
Camden-st., f.g.r. 6*l.* 6s., reversion in 14 yrs. 300
Pope-st., f.g.r. 29*l.* 5s. 3d., reversion in 15½ yrs. 925

October 8.—By CHARLES VARLEY.

Peckham.—31, Linden-gr., u.t. 39 yrs., g.r. 7*l.* 10s., p. 340
Stoke Newington.—3, Allen-rd. (s.), u.t. 43½ yrs., g.r. 11*l.*, y.r. 32*l.* 170

October 9.—By H. W. & C. SPELMAN (at Norwich).

Fritton, Suffolk.—The Cottage, f. 180
Haddiscoe, Suffolk.—Grazing marshes, 45 a. 0 r. 37 p., f. 1,655
Norwich.—57, Northcote-rd., 144, Spencer-st., f. 300

October 12.—By MARK, LIELL, & SON.

East Ham.—105, Clement's-rd., u.t. 995 yrs., g.r. 3*l.*, p. 210
Bow.—24 to 32 (even), British-st., f., w.r. 176*l.* £1,470
13 and 18, Stafford-rd., f., w.r. 65*l.* 435
7 and 8, Harley-st., u.t. 17 yrs., g.r. 10*l.* 10s., y.r. 62*l.* 225
22, Harley-st., u.t. 17 yrs., g.r. 5*l.* 5s., w.r. 40*l.* 6s. 115
87, Morville-st. (s.), u.t. 43 yrs., g.r. 6*l.*, y.r. 31*l.* 4s. 175

By RUTLEY, SON, & VINE.

Euston-road.—107 and 137, Stanhope-st., u.t. 14 and 15 yrs., g.r. 18*l.* 10s., w.r. 163*l.* 16s. 340
Somers Town.—85, 86, and 87, Chalton-st., also 39 and 41, Churchway (s.), u.t. 17 yrs., g.r. 56*l.*, y.r. 146*l.* 400
Wandsworth-road.—No. 258 (s.), u.t. 26 yrs., g.r. 5*l.*, y.r. 70*l.* 370

By PEAT & HOLDSWORTH (at Reigate).

Reigate.—12, Reigate-heath, f., p. 265

By J. C. PLATT (at Hammersmith).

Hammersmith.—9, 11, and 13, Southerton-rd. u.t. 56½ yrs., g.r. 21*l.*, w.r. 187*l.* 4s. 680

October 13.—By HAMPTON & SONS.

Wimbledon.—20, Spencer-hill, f., p. 725

By EDMUND HORNE.

Staines.—8, 10, and 12, Farnell-rd., f., w.r. 50*l.* 14s. 495
18 to 28 (even), Farnell-rd., f., w.r. 101*l.* 8s. 760
31 to 41 (odd), Farnell-rd., f., w.r. 93*l.* 12s. 745
31, 33, and 35, Bremer-rd., f., w.r. 46*l.* 16s. 350
9 to 25 (odd), Stanwell-rd., f., w.r. 163*l.* 16s. 1,310
Hanworth.—1 to 4, South View cottages, u.t. 72 yrs., g.r. 6*l.* 16s. 3d., w.r. 46*l.* 16s. 185
Feltham.—Cardinal-rd., plot of land, f. 105
Hounslow.—Hanworth-rd., plot of land, c. 245
104, Hanworth-rd., f., w.r. 18*l.* 255
319, Hanworth-rd., f., y.r. 40*l.* 495
323 to 329 (odd), Hanworth-rd., f., e.r. 146*l.* 1,150
137 to 145 (odd), St. Stephens-rd., f., w.r. 93*l.* 12s. 600
140, 142, and 144, St. Stephens-rd., f., w.r. 55*l.* 18s. 470
39, 41, and 43, Bristow-rd., f., w.r. 54*l.* 12s. 595
1 to 4, New-villas, f., w.r. 93*l.* 12s. 850
7 and 9, Holloway-st., f., w.r. 42*l.* 18s. 175
Inverness-rd., Inverness Works, f., y.r. 50*l.* 300
72 to 80 (even), Wellington-rd., f., w.r. 100*l.* 14s. 900
1, Lampton-rd., u.t. 66 yrs., g.r. 12*l.*, e.r. 40*l.* 110
Lampton.—Lampton-rd., Ivydene, Hollydene, Fieldside, Floral Villa, Beaufort Lodge, Vernon Lodge, and 7 a. 3 r. 12 p., u.t. 49 yrs., g.r. 28*l.*, y. and e.r. 267*l.* 2,200
Whitton.—3 and 4, Maxwell-park, f., e.r. 54*l.* 410
Isleworth.—St. John's-rd., plot of land, f. 100
2, 2A, and 4, Church-st., f., e.r. 74*l.* 250
Twickenham.—2, Melrose-villas, f., y.r. 24*l.* 340

By DOUGLAS YOUNG & Co.

Brixton.—216, 218, and 222, Coldharbour-la. (s.), f., y.r. 190*l.* 3,300
224, Coldharbour-la. (s.), f., y.r. 100*l.* 1,310

By DRIVER, JONAS, & Co. (at Driffield).

Speeton, Yorks.—Manor Farm, 538 a. 3 r. 5 p., f. 9,000
Mr. Crowe's and Mill Farms, 569 a. 2 r. 23 p., f. 9,400
Freehold Farm, 259 a. 1 r. 22 p. 5,750
Skerne, Yorks.—Part of The Skerne Estate, 819 acres, f. 19,520

October 14.—By MORETON RICHES.

Battersea.—71, Marney-rd., u.t. 76 yrs., g.r. 7*l.*, e.r. 36*l.* 250
37, Kelmscott-rd., u.t. 80 yrs., g.r. 7*l.*, y.r. 36*l.* 230

By STIMSON & SONS.

Peckham.—Queen's-rd., Montpelier Tavern, l.g.r. 105*l.*, u.t. 40 yrs., g.r. 35*l.*, with reversion 1,100
3 and 5, Montpelier-rd. and l.g. rents 21*l.* 10s., u.t. 40 yrs., g.r. 11*l.* 1s., w.r. 83*l.* 4s. 530
Forest Hill.—4 and 6, Malham-rd., f., w.r. 57*l.* 4s. 520
Peckham.—Talfourd-pl., f.g. rents 24*l.*, reversion in 58 yrs. 580
Talfourd-pl., etc., f g.r. 15*l.*, reversion in 58 yrs. 400
Dulwich.—Crystal Palace-rd., f.g.r. 12*l.*, reversion in 56 yrs. 310
Notting Hill.—49, Cambridge-gdns., u.t. 54 yrs., g.r. 12*l.*, e.r. 60*l.* 300
Norwood.—37, Cintra-pk., u.t. 55 yrs., g.r. 5*l.*, e.r. 40*l.* 170
Walthamstow.—84, The Drive, u.t. 54 yrs., g.r. 11*l.* 5s., e.r. 55*l.* 340
Poplar.—Bath-st., f.g.r. 20*l.*, reversion in 53 yrs. 380
Plaistow.—Grange-rd., f.g.r. 5*l.*, reversion in 88 yrs. 125
Old Ford.—Old Ford-rd., f.g.r. 5*l.*, reversion in 79½ yrs. 105
Hackney.—Mace-st., f.g.r. 5*l.*, reversion in 79½ yrs. 105

By BUCKLAND & SONS (at Ealing).

Hanwell.—101 to 109 (odd), Boston-rd. (s.), f., y.r. 172*l.* 10s. 1,525

October 15.—By GREEN & SON.

Mortlake.—64, 66, and 68, St. Leonards-rd., u.t. 95 yrs., g.r. 19*l.* 10s., y.r. 90*l.* 620
Battersea.—90 and 92, Meyrick-rd., u.t. 37 yrs., g.r. 8*l.* 10s., w.r. 72*l.* 16s. 280
Canonbury.—54, Canonbury-pk. North, u.t. 26½ yrs., g.r. 8*l.*, y.r. 42*l.* 180

By HOBSON, RICHARDS, & Co.

Poplar.—322 and 324, High-st. (s.), c., y.r. 60*l.* 445

By MULLETT, BOOKER, & Co.

Hyde Park.—76 and 78, Inverness-ter., u.t. 38½ yrs., g.r. 24*l.*, y.r. 260*l.* 2,100
South Kensington.—4, Drayton-ter., u.t. 34½ yrs., g.r. 2*l.*, p. 480

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xviii.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

OCTOBER 27.—**Carrickfergus.**—SEWERAGE WORKS.—Larne R.D.C. invite tenders for furnishing a report, plans, sections, and detailed estimate of a scheme of sewerage for Greenisland District, Carrickfergus. Mr. S. M. Wallace, Clerk of Council, Union Offices, Larne.

OCTOBER 31.—**Pembrokeshire.**—FARMHOUSE, ETC.—The Pembrokeshire Small Holdings and Allotments Committee invite model plan and specification for a farmhouse and outbuildings. For further particulars see advertisement in our issue of October 9.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l.*, 30*l.*, and 20*l.* Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

* NOVEMBER 30.—**Workington.**—SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. For further particulars see advertisement in our issue of October 16.

* DECEMBER 17.—**London.**—DESIGN FOR A FACADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 25.—**Darlington.**—CENTRAL SCHOOL FOR DOMESTIC SUBJECTS.—The Corporation of Darlington invite tenders for the erection of a new central school for domestic subjects in Beaumont-street, Darlington. Plans, etc., may be seen, and bill of quantities, etc., obtained, at the offices of Mr. George Winter, Borough Surveyor, Town Hall, Darlington, on depositing a cheque for 2*l* 2s.

OCTOBER 25.—**Dublin.**—REBUILDING STORES.—Rebuilding the stores at rear of Nos 151, 152, and 153, Thomas-street, Dublin, for the Irish Agricultural Wholesale Society, Ltd. The plans, etc., can be seen at offices of Messrs. W. M. Mitchell & Sons, architects, 2, Stephen's-green, N. Dublin, and bills of quantities obtained from Messrs. Beckett & Medcalf, No. 6, Clare-street, on payment of a deposit of 1*l.*

OCTOBER 25.—**Inverurie.**—REBUILDING SCHOOL.—Mason, carpenter, plumber, plaster, slater, and painter and glazier works required in rebuilding Market-place School, Inverurie. Plans may be seen with, and schedules of quantities obtained from, Mr. Geo. Gray, architect, Inverurie.

OCTOBER 25.—**Keswick.**—HOUSES.—For two dwelling-houses at Greta-side, Keswick. Plan, etc., can be seen at Messrs. Banks & Co., Pencil Works.

OCTOBER 26.—**Cardiff.**—RESTORING PREMISES.—Restoring the premises, No. 40, Queen-street, Cardiff, after fire, for Mr. R. J. T. Hillier. Plans, etc., can be seen, and bills of quantities obtained, at office of Mr. John W. Rodger, architect, 14, High-street, Cardiff.

OCTOBER 26.—**Elland.**—SCHOOL.—Erection of new Secondary School, Victoria-road, Elland. Names to the architect, Mr. W. S. Braithwaite, 6, South-parade, Leeds. Quantities will be forwarded in due course.

OCTOBER 26.—**Harpurhey.**—WALLS.—Manchester Corporation Improvement and Buildings Committee invite tenders for the construction of retaining walls at Central-avenue, Harpurhey. Plans may be seen, and specification, etc., obtained, on application at the City Surveyor's office, Town Hall, Manchester, on payment to the City Treasurer of 2*l.* 2s. All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

OCTOBER 26.—**Nottingham.**—ADDITIONS TO ASYLUM.—The Committee of Visitors of the City Asylum invite tenders for additions to the City Asylum, Mapperley Hill, Nottingham. Plans may be seen, and copies of the specifications, etc., obtained, on application to Mr. Frank B. Lewis, City Architect, Guildhall, on payment of a deposit of 2*l.* 2s.

OCTOBER 27.—**Brampton.**—CEILING, ETC.—Erection of a wood ceiling and ventilator in the Primitive Methodist Church, Brampton. Plans, etc., on view at Mr. J. G. Atkinson's, The Sands, Brampton.

OCTOBER 27.—**Brixham.**—TOWN HALL ADDITIONS, ETC.—The Brixham U.D.C. invite tenders for additions and alterations to the Town Hall, Brixham. Drawings, etc., can be seen, and bills of quantities obtained, at the office of the architect, Mr. Fred. Wm. Vanstone, C.E., Palace-chambers, Paignton, upon payment of 1*l.* 1s.

OCTOBER 27.—**Dunfermline.**—PREMISES.—Tenders wanted for the mason, joiner, plumber, slater, plaster, and tile works in connexion with the erection of new premises, 125, High-street, Dunfermline, for Mr. Angelo Maloco. Plans may be seen, and schedules of quantities obtained, on application to Mr. T. Hyslop Ure, architect and surveyor, 43, Carnegie-street, Dunfermline.

OCTOBER 27.—**York.**—RAISING ARCHWAY.—Tenders are invited for the raising of the archway through the city wall at Leeman-road. Plans may be seen, and copy of specification, etc., obtained, from Mr. F. W. Spurr, City Engineer, Guildhall, York, on depositing 1*l.* 1s.

OCTOBER 28.—**Bradford.**—STABLING.—Works (painters' excepted) required in the erection of stabling for sixteen horses, off Wakefield-road, for the City of Bradford Co-operative Society, Ltd. Plans, etc., at office of Mr. William Rycroft, architect, Bank-buildings, Manchester-road, Bradford.

OCTOBER 28.—**Edinburgh.**—STEELWORK.—The Commissioners of H.M. Works and Public Buildings invite tenders for steelwork at the Royal Scottish Academy (New Galleries). Drawings, etc., may be seen on application to H.M. Office of Works, Edinburgh. Bills of quantities and forms of tender may be obtained at the same address on payment of 1*l.* 1s.

OCTOBER 28.—**South Brent.**—LYCH GATE.—Building enclosure wall and erecting lych gate for the South Brent Church Burial Ground at South Brent. Plans, etc., can be seen, and bills of quantities obtained, at the office of Mr. R. Hansford Worth, M.Inst.C.E., 42, George-street, Plymouth.

* OCTOBER 29.—**Cardiff.**—COUNTY HALL.—The Glamorgan C.C. invite tenders for erection of a County Hall in Cathays Park, Cardiff. See advertisement in this issue for further particulars.

OCTOBER 29.—**Halifax.**—ALTERATIONS, ETC.—Sanitary tower and fittings, and also alterations to existing conveniences at Battinson-road Mill, Halifax. Plans may be seen, and bills of quantities obtained, at offices of Messrs. Clement Williams & Sons, architects, Post-office-buildings, Commercial-street, Halifax.

OCTOBER 29.—**Leeds.**—ALTERATIONS.—The Unhealthy Areas Committee invite tenders for the whole of the work required in the alterations, etc., of shop premises into lodging-house for women, Nos. 52-54, Lady-lane, Leeds. Specification, etc., can be seen, and bills of quantities obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

OCTOBER 30.—**Hertford.**—BATHROOMS.—Building two new bathrooms at the Hertford Union Workhouse for the Board of Guardians of the Hertford Union. Plans, etc., may be seen on application to the Master of the Workhouse.

OCTOBER 31.—**Swinton.**—SCHOOL.—Swinton and Pendlebury Education Committee invite tenders for the erection of a new school, to accommodate 1,250 scholars. A deposit of 1*l.* 1s. will be required. Names (but not the deposit money) to Mr. W. T. Postlethwaite, Council Offices, Swinton, Manchester.

* NOVEMBER 5.—**Battersea.**—STORE BUILDING.—The Metropolitan Water Board invite tenders for construction of a store building and other contingent works. See advertisement in this issue for further particulars.

NOVEMBER 5.—**Bentley-with-Arksey.**—SCHOOL.—The West Riding Education Committee invite whole or separate tenders for Bentley-with-Arksey new school. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

NOVEMBER 5.—**London.**—STORE BUILDING.—The Metropolitan Water Board invite tenders for the construction of a store building and other contingent works on land situate at the Battersea Works of the Board, London, S.W. The drawings, etc., may be inspected at the offices of the Chief Engineer, Savoy-court, Strand, W.C. Form of tender, etc., from the Chief Engineer on the production of an official receipt for the sum of 10*l.*, which sum must be deposited with the Accountant at Savoy-court, Strand, W.C.

NOVEMBER 5.—**Shoreham.**—ROCKET APPARATUS HOUSE.—The Board of Trade invite tenders for the erection of a rocket life-saving apparatus house at Shoreham. Copies of the plan, etc., can be obtained on application at the Coastguard Station, Shoreham.

NOVEMBER 6.—**Shirebrook.**—SCHOOL.—The Derbyshire Education Committee invite tenders for the erection of proposed Council School for Girls at Shirebrook, to accommodate about 320 girls, with cookery room in addition. Drawings, etc., at the office of the Architect to the Committee, St. Mary's-gate, Derby. A copy of the bill of quantities, etc., can be obtained of the Architect, Mr. George H. Widdows, A.R.I.B.A., Architect to the Committee, upon payment of 1*l.* 1s.

NOVEMBER 6.—**Swansea.**—WORKHOUSE ADDITIONS.—The Guardians of the Swansea Union invite tenders for the undermentioned work, viz.:—(1) Male imbecile day room at the Union Workhouse; (2) lavatory accommodation at the Union Offices, Alexandra-road. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the offices of the architect, Mr. Charles T. Ruthen, Bank-chambers, Heathfield-street, Swansea, on payment of 2*l.* 2s.

NOVEMBER 6.—**Walkden.**—TECHNICAL SCHOOL.—The Worsley U.D.C. invite tenders for the erection of a Technical School at Walkden. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 3*l.*

NOVEMBER 11.—**Aberfan.**—HOUSES.—Erection of twenty-four or more dwelling-houses, together with the construction of roads and sewers, etc., at Aberfan, for the Pleasant View Building Club. Plans, etc., may be seen at the office of Mr. O. P. Bevan, architect and surveyor, Express-chambers, Merthyr Tydfil.

NOVEMBER 13.—**Widnes.**—MUNICIPAL SECONDARY AND TECHNICAL SCHOOL EXTENSION.—The Local Higher Education Sub-Committee invite tenders for the enlargement and extension of the Widnes Municipal Secondary and Technical School. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 3*l.*

NO DATE.—**Cardiff.**—REBUILDING OF MASONS' ARMS.—Messrs. R. E. Jones & Co., Ltd., invite tenders for the rebuilding the Masons' Arms, Queen-street, Cardiff. Name, together with a deposit of 3*l.* 3s., to Mr. Sidney Williams, architect, Wharton-street, Cardiff.

NO DATE.—**Darlington.**—REPAIRS.—Tender wanted for repairs to Coatham Grange Farm, Coatham Mundeville, Darlington. Particulars to be seen at the farm.

NO DATE.—**Holbeck, Leeds.**—PREMISES.—Tenders (labour only) for erection of premises in Holbeck. Mr. B. Houlden, Wellington House, 73, Bruce-street, Leeds.

NO DATE.—**Kincardine O'Neil.**—ADDITIONS TO MANSION HOUSE.—Alterations and additions to the Mansion House of Dess, Kincardine O'Neil, Aberdeenshire. Applications for schedules to be made to Mr. W. R. Davidson, architect, 8, New-square, Lincoln's-inn, London, W.C.

NO DATE.—**South Moor.**—ADDITIONS TO HOUSES.—Additions to nine houses at South Moor (bathrooms, etc.). Names to the architect, Mr. J. Wm. Rounthwaite, A.R.I.B.A., 13, Mosley-street, Newcastle-on-Tyne.

ENGINEERING, IRON, AND STEEL.

OCTOBER 25.—**Manchester.**—RAILS.—The Tramways Committee of the Manchester Corporation invite tenders for the supply of steel girder tramway rails. Specifications, etc., may be obtained on ap-

ENGINEERING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

plication to Mr. J. M. M'Elroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester, on deposit of 1*l.* 1s.

OCTOBER 25.—**Winchester.**—ELECTRIC LIGHT.—For the installation of electric light at the new offices, St. James's-street, Winchester. On deposit of 2*l.* 2s. tenderers may see plans, etc., and obtain all other information at the office of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. No information will be sent by post.

OCTOBER 26.—**London.**—BRIDGEWORK, ETC.—The South Indian Railway Company, Ltd., invite tenders for the supply of (1) stores—hardware, steel, etc.; (2) locomotive boilers—seven boilers and spare parts; (3) bridgework, 12-ft. to 30-ft. spans—about 205 tons. Specifications, etc., may be obtained at the company's offices, 91, York-street, Westminster, S.W. A charge, which will not be returned, will be made of 1*l.* for each copy of specifications Nos. 1, 2, and 3. Copies of the drawings may be obtained at the office of Mr. Robert White, M.Inst.C.E., Consulting Engineer to the Company, 3, Victoria-street, Westminster, London, S.W., on payment of 5s. per sheet.

OCTOBER 26.—**Sowerby Bridge.**—REFUSE DESTRUCTOR.—The U.D.C. invite tenders for the supply and erection of a refuse destructor at Sowerby Bridge. Full particulars may be obtained on application to Mr. George E. Wrigley, Engineer's office, Sowerby Bridge, on payment of the sum of 2*l.* 2s.

OCTOBER 27.—**Dundee.**—STEAM CRANE STEAMER.—The Trustees of the Harbour of Dundee invite tenders for the construction and delivery complete at Dundee Harbour of a 10-ton self-propelling steam crane steamer. Specifications, etc., may be obtained at the office of Mr. J. Hannay Thompson, M.Inst.C.E., General Manager and Engineer, Dundee Harbour Trust.

OCTOBER 27.—**Dundee.**—SWING BRIDGE.—The Trustees of the Harbour of Dundee invite tenders for the construction, on foundations to be supplied by the Trustees, of a footpath swing bridge, of about 60-ft. span. Drawings, etc., may be seen at the office of Mr. J. Hannay Thompson, M.Inst.C.E., General Manager and Engineer, Dundee Harbour Trust.

✱ OCTOBER 27.—**Wood Green, N.**—IRON ESCAPE STAIRCASE.—The Guardians of St. Leonard, Shoreditch, invite tenders for erection of an iron escape staircase and builders' work in connexion therewith at Branch Workhouse, Alexandra Park-road, Wood Green, N. See advertisement in this issue for further particulars.

OCTOBER 30.—**Benfieldside.**—BRIDGEWORK.—Reconstructing Snows Green Bridge, Benfieldside, (*a*) with steel deck; (*b*) alternatively in ferro-concrete. Plans, etc., may be seen, and bills of quantities obtained, at the County Engineer's office, Shire Hall, Durham.

NOVEMBER 1.—**Pontypool.**—FILTER BED.—The Directors of the Pontypool Gas and Water Company invite tenders for the construction of an additional filter bed at their Nantymailor Waterworks. Drawings, etc., may be inspected, and forms of tender, etc., may be obtained (on payment of 2*l.* 2s.), at the office of the company at Pontypool, and at the office of Messrs. T. & C. Hawksley civil engineers, Caxton House (West Block), Westminster, S.W.

NOVEMBER 4.—**Southwark, London.**—ALTERATIONS TO WELL AND PUMP AT NEWINGTON WORKHOUSE, WESTMORELAND-ROAD, WALWORTH, S.E.—Alterations to the existing well and pump. Forms of tender, etc., may be obtained on application to offices of Mr. Sydney Wood, Clerk, Union Offices, John-street West, Blackfriars-road, S.E., on payment of 1*l.* 1s. Drawings of the proposed works may be seen at the Newington Workhouse.

NOVEMBER 4.—**Walworth.**—For alterations to well and pumps at Newington Workhouse, Westmoreland-road, Walworth, S.E. — Southwark Guardians invite tenders for certain alterations to the existing well and pump at the establishment. Forms of tender and conditions of contract may be obtained on application to offices of Mr. Sydney Wood, Clerk, Union Offices, John-street West, Blackfriars-road, S.E., on payment of 1*l.* 1s. Drawings of the proposed works may be seen at the Newington Workhouse.

MISCELLANEOUS.

OCTOBER 26.—**Southampton.**—DESKS.—The Education Committee invite tenders for the supply and delivery of about 550 dual desks, in accordance with the sample to be seen at office of Mr. J. Cruickshank, Secretary, Education Offices, Southampton. Specifications and tender forms may be obtained at the office of the Borough Engineer.

OCTOBER 27.—**London.**—FURNITURE.—The Receiver for the Metropolitan Police District invites tenders for the supply of furniture for the service of the Metropolitan Police for three years. Printed forms of tender may be obtained from the Receiver, at his office, New Scotland-yard, S.W., and sealed patterns may be seen in the Surveyor's office.

✱ OCTOBER 29.—**Bournemouth.**—TEAK DECKING.—The Bournemouth T.C. invite tenders for laying about 230 squares of 1-in. grooved and tongued desiccated teak decking, with metal heading joints. See advertisement in this issue for further particulars.

✱ NOVEMBER 1.—**Hendon.**—COAL SLACK.—The Hendon U.D.C. invite tenders for supply of 200 tons of best nutty coal slack. See advertisement in this issue for further particulars.

NOVEMBER 2.—**Ewell.**—SCAVENGING.—Ewell P.C. invite tenders for the removal of house refuse and the emptying and cleaning of ashpits. Agreement and specification open for inspection at the Office of the Council, High-street, Ewell.

NOVEMBER 2.—**Warrington.**—TILING.—Tenders are invited by the Gas Committee for tiling floor at Longford Gas Works. Full particulars may be obtained on application to Mr. W. S. Haddock, engineer.

✱ NOVEMBER 2.—**Willesden.**—OAK CLEFT FENCING.—The Willesden D.C. invite tenders for supply and fixing of cleft oak fencing. See advertisement in this issue for further particulars.

NOVEMBER 11.—**Cork.**—STEAM ROAD ROLLER.—The Council of the County Borough of Cork invite tenders for a 15-ton steam road roller, complete. Mr. F. W. M'Carthy, Town Clerk.

DECEMBER 1.—**Wanstead.**—SCAVENGING, ETC.—Wanstead U.D.C. invite tenders:—(1) For the weekly collection of household refuse and ashes; (2) for providing water-carts with horses, harness, and men; (3) for providing carts with horses, harness, and men for general cartage in connexion with the roads, etc. For further particulars apply at the Council Offices, Wanstead, N.E. (Surveyor's Department), where forms of tender can be obtained and contract form inspected.

PAINTING, etc.

✱ OCTOBER 25.—**London, E.**—DECORATIVE REPAIRS.—The Guardians of St. George-in-the-East invite estimates for certain decorative repairs at their Dispensary, Raine-street, Old Gravel-lane, E. See advertisement in this issue for further particulars.

OCTOBER 26.—**Glasgow.**—PAINTING, ETC.—The Corporation invite offers for the cleaning and painting work required in the old portion of the Dead Meat Market, Moore-street. Specifications, etc., may be had on application at the Office of Public Works, City Chambers, 64, Cochrane-street.

OCTOBER 27.—**Belfast.**—PAINTING.—The Baths and Lodging-house Committee invite tenders for painting at Falls-road, Templemore-avenue, Ormeau-avenue, and Peter's-hill Baths. Specifications may be seen, and forms of tender obtained, at the City Surveyor's office.

OCTOBER 27.—**Chesterfield.**—PAINTING NEW-SQUARE LAVATORIES.—The Health Committee invite tenders for the painting of the New-square Lavatories. Particulars, etc., may be obtained on application to the Borough Surveyor's office, Saltergate.

OCTOBER 30.—**Latchford.**—DECORATING.—The Baptist Church Decorating Committee invite tenders for decorating, etc., the church inside. Can be seen by appointment. Mr. J. R. Conway, Secretary, 651, Knutsford-road, Warrington.

NO DATE.—**Deri.**—PAINTING.—Painting and graining of thirty-two houses at Deri. For particulars apply to Mr. John Edwards, Gwalia House, Deri.

NO DATE.—**Harrogate.**—PAINTING.—The Committee of United Methodist Church, Harrogate, invite designs and tenders for painting and decorating the interior of the church, schoolroom, lecture-room, vestries, etc. Particulars may be had on application to Mr. Geo. W. Byers, 20, Spring-mount, Harrogate.

ROADS, SANITARY, AND WATER WORKS.

OCTOBER 25.—**Accrington.**—LAYING OUT GROUNDS.—For laying out of the grounds and the work of planting shrubs, trees, etc., and the forming of paths, Victoria Hospital for Accrington and District, extensions. Particulars from Messrs. Haywood & Harrison, architects.

OCTOBER 25.—**Ashton-upon-Mersey.**—ROAD WORKS.—The U.D.C. invite tenders for the reconstruction of Glebelands-road. Plan, etc., may be seen, and bill of quantities obtained, at office of Mr. Fred. Hutton, Surveyor, Public Hall, Ashton-upon-Mersey, on payment of a deposit of 1*l.* 1s.

OCTOBER 25.—**Leeds.**—PAVING.—The Highways Committee invite tenders for the paving (labour only) of the sides of the carriageway in Stanningley-road. Forms of tender and bills of quantities may be obtained, and copies of the documents forming the contract inspected, at the Highways Office, 155, Kirkstall-road.

OCTOBER 25-NOVEMBER 15.—**Normanton.**—SEWAGE WORKS.—Normanton U.D.C. invite tenders for the execution of a scheme of sewage disposal. Full particulars may be obtained upon application to the joint engineers, Messrs. D. Balfour & Son, civil engineers, 3, St. Nicholas-buildings, Newcastle-on-Tyne, and Mr. Arthur Hartley, County-chambers, Castleford. Applications must be made on or before October 25, and must be accompanied by a cheque for 5*l.*

OCTOBER 26.—**Altrincham.**—STREET WORKS.—Altrincham U.D.C. invite tenders for the construction of 189 yds. of 9-in. and 12-in. sewer in Gaskell-road. Plans, etc., may be seen, and quantities, etc., obtained, on application to Mr. H. E. Brown, Surveyor to the Council, Town Hall, Altrincham.

OCTOBER 26.—**Caerphilly.**—SEWAGE TANKS.—Small temporary sewage tanks, with contingent works, near Llancaiach Station, Nelson, for Caerphilly U.D.C. Specification may be seen, and form of tender obtained, on application at the office of Mr. Alfred O. Harpur, surveyor, Caerphilly.

OCTOBER 26.—**Swansea.**—STREET WORKS.—The Corporation invite tenders for the execution of private street works in Rhyddings Park-road back road, Swansea. Plans, etc., may be seen at the office of the Borough Surveyor, 13, Somerset-place.

OCTOBER 27.—**Lambhill Farm, Lanarkshire.**—CLEANING DRAINS.—Offers wished for cleaning the sheep drains on the Farm of Lambhill, in the Parish of Avondale. Particulars will be given by Mr. David Cunningham, Manager at the farm.

OCTOBER 27.—**Soothill Nether.**—WIDENING LANE.—The U.D.C. invite estimates for the various work required to widen Walnut-lane, Chickenley. Particulars and plan may be seen at the Surveyor's office, Headland-lane, Earlsheaton.

OCTOBER 27.—**South Hiendley.**—SEWAGE-DISPOSAL WORKS.—The R.D.C. of Hemsworth invite tenders for the construction of sewage-disposal works at South Hiendley, such works comprising sewage tanks, filters, etc. Plans, etc., may be seen at the office of Mr. T. H. Richardson, surveyor, at Hemsworth.

OCTOBER 29.—**Richmond (Surrey).**—FILTER BEDS.—The B.C. invite tenders for the construction of filter beds, mainlaying, etc., at Petersham, Surrey. Copies of the specification can be obtained, and drawings inspected, at the offices of the engineers, Messrs. Joseph Quick & Son, 14, Victoria-street, Westminster, on payment of a deposit of 5*l.* 5s.

OCTOBER 30.—**London.**—DRAINING.—The Vicar and Wardens of St. Michael's Church invite tenders for the redraining of the church and premises, Stockwell Park-road. Plans, etc., may be seen, and all particulars obtained, at the Vicarage.

NOVEMBER 1.—**Beckenham.**—ROAD.—For construction of about 2,900 ft. of road at Kelsey Park, Beckenham. Plans, etc., accompanied by a remittance of 10s., to Messrs. W. Levens & Son, surveyors, Broadway House, Bromley, Kent.

✱ NOVEMBER 1.—**Hendon.**—SEWER, ETC.—The Hendon U.D.C. invite tenders for sewering, kerbing, and channelling works. See advertisement in this issue for further particulars.

NOVEMBER 1.—**Pewsey.**—WATERWORKS.—Pewsey R.D.C. invite tenders for 5,592 lin. yds. of 4-in. and 3-in. cast-iron water mains, with valves, etc.; the providing and fixing of duplicate deep-well pumps, together with a windmill and an oil engine; the building of an engine-house, and the construction of a covered storage reservoir. The drawings, etc., may be seen at office of Mr. S. B. Dixon, Clerk to the Pewsey R.D.C., Pewsey. Copies of specification, etc., may be obtained from the engineers, Messrs. Fairbank & Son, C.E., of Lendal-chambers, York, on deposit of 3*l.* 3s.

NOVEMBER 1.—**Teignmouth.**—SEWER.—Teignmouth U.D.C. invite tenders for the construction of about 47 lin. yds. of 9-in. and about 180 lin. yds. of 6-in. pipe sewers in Coombe-road. Plans, etc., may be seen, and a copy of the form of tender obtained, on application at office of Mr. Chas. F. Gettings, Surveyor, Town Hall, Teignmouth.

NOVEMBER 1.—**Whittington.**—STREET WORKS.—Whittington U.D.C. invite tenders for the materials and works required in metalling, paving, kerbing, channelling, and draining King-street, in accordance with plans, etc., prepared by the Surveyor to the Council. Plans, etc., by appointment at the office of Mr. S. J. Laver, Old Whittington, and the bills of quantities may be obtained, on payment of 1*l.* 1s.

NOVEMBER 2.—**Ealing.**—PRIVATE STREET IMPROVEMENTS.—The T.C. invite tenders for the making-up of roads. The drawings, etc., may be seen, and forms of tender, etc., obtained, from Mr. Charles Jones, M.Inst.C.E., Borough Engineer, Town Hall, Ealing, W., upon payment of a deposit of 10s. 6d. for each road (three).

NOVEMBER 2.—**Southgate.**—PRIVATE STREET IMPROVEMENTS.—The U.D.C. of Southgate invite tenders for the making-up of streets. Plans may be seen on application to the Council's Surveyor, Mr. C. G. Lawson, C.E., from whom copies of the specification, etc., may be obtained on depositing 2*l.* in cash.

NOVEMBER 3.—**Burntisland.**—WATER MAIN.—Burntisland T.C. invite tenders from contractors for laying a new cast-iron water main from Cullaloo Reservoir to the town. Schedules of measurement may be obtained from Mr. J. A. Waddell, Burgh Surveyor, Burntisland, on payment of a deposit of 1*l.* Plans may be seen at the office of the Burgh Surveyor in Burntisland, and the Surveyor will meet intending offerers at Aberdour Station at 11.15 a.m. on Monday, October 25.

NOVEMBER 5.—**Spaldwick.**—DRAINAGE.—Huntingdon R.D.C. invite tenders for drainage. Plan, etc., can be seen on application to Mr. Simeon Croot, Brampton, Hunts.

NOVEMBER 8.—**Bury.**—AINSWORTH MAIN DRAINAGE.—The R.D.C. of Bury invite tenders for the following works:—Contract No. 1—Construction of tanks, bacteria beds, etc.; contract No. 2—Construction of stoneware and cast-iron intercepting sewer, etc.; contract No. 3—Construction of main sewer No. 1, manholes, etc. Plans may be seen, and copies of the specifications, etc., obtained, at the office of the Engineer, Mr. E. T. Morland Johnson, Bank of England-chambers, Tib-lane, Cross-street, Manchester, on payment of a cheque for 2*l.* 2s. in respect of each tender.

NOVEMBER 9.—**Southall-Norwood.**—PAVING WORKS.—The Council invite tenders for providing and laying 1,050 lin. yds. of granite block channel and other incidental works. Plans, etc., may be seen, and quantities, etc., obtained, at office of Mr. Reginald Brown, A.M.Inst.C.E., F.S.I., etc., Engineer and Surveyor to the Council, Public Offices, Southall.

NOVEMBER 9.—**Southall-Norwood.**—PRIVATE STREET IMPROVEMENTS.—The Council invite tenders for the making-up of the following roads:—Beaconsfield-road (part of), Townsend-road. Plans, etc., may be seen, and quantities, etc., obtained, at office of Mr. Reginald Brown, A.M.Inst.C.E., F.S.I., etc., Engineer and Surveyor to the Council, Public Offices.

NOVEMBER 9.—**Southall-Norwood.**—SEWERAGE WORKS.—The Council invite tenders for the supplying and laying of stoneware pipe surface-water sewers. Plans, etc., may be seen, and quantities and forms of tender obtained, at offices of Mr. Reginald Brown, A.M.Inst.C.E., F.S.I., etc., Public Offices, Southall.

✱ NOVEMBER 11.—**Balham, S.W.**—PAVING.—The Wandsworth B.C. invite tenders for making-up and paving of Badminton-road, Balham. See advertisement in this issue for further particulars.

DECEMBER 7.—**Shanklin.**—CHILLERTON AUXILIARY WATER SUPPLY.—The U.D.C. invite tenders for the supply and delivery at Newport, Isle of Wight, of cast-iron pipes, etc. Specification, etc., may be obtained from the Engineer, Mr. Ernest Charles Cooper, on payment of 3*l.* 3s.

JANUARY 1.—**Newcastle, New South Wales.**—ASPHALT ROADWAY.—Tenders are invited for supplying and laying an asphalt roadway in Hunter-street and Hunter-street West, in the City of Newcastle, New South Wales. Copy of plan and specification can be seen at the office of the New South Wales Agent-General, 123-5, Cannon-street, London, E.C.

STONES, MATERIAL, AND STORES.

OCTOBER 26.—**London.**—TOOLS, ETC.—Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of Miscellaneous tools and stores. Forms, etc., can be obtained at offices of Mr. C. Crommelin, Secretary, Gloucester House,

STONE, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 1l. 1s. each (which will not be returned).

OCTOBER 28.—**Chatham.**—STONE PAVING.—The T.C. of the Borough of Chatham invite tenders for the supply of 600 super. yds. 2½-in. best tooled York stone paving. Specification and form of tender may be obtained on application at the Borough Surveyor's office, Town Hall, Chatham.

OCTOBER 29.—**Richmond (Surrey).**—PIPES.—The B.C. invite tenders for the supply of cast-iron pipes of 9-in. and 7-in. diameter respectively. Copies of the specification can be obtained from the engineers, Messrs. Joseph Quick & Son, 14, Victoria-street, Westminster.

OCTOBER 30.—**Walmer.**—QUARTZITE.—Walmer U.D.C. invite tenders for the supply of about 100 tons of quartzite. Mr. Herbert W. Barker, Surveyor to the Council, Council Offices, Walmer.

NOVEMBER 1.—**Glasgow.**—STORES.—The Directors of the Caledonian Railway Company invite tenders for the supply of stores for one or two years. Specifications, etc., may be obtained from Mr. John Fergusson, Stores Superintendent, Caledonian Railway, Charles-street, St. Rollox, Glasgow. Patterns can be inspected at the Company's Stores, Charles-street, St. Rollox.

NOVEMBER 2.—**Acton.**—COKE BREEZE.—The Acton U.D.C. invite tenders for the supply of about 400 tons of coke breeze to the Public Baths, Acton. Tender forms can be obtained on application to the Surveyor's office, 57, High-street, Acton, W.

NOVEMBER 3.—**Camberwell.**—MATERIALS.—The Guardians of the Poor of the Parish of St. Giles, Camberwell, invite tenders for building materials, ironmongery, glass, timber, iron trusses, stoneware pipe, etc. Forms upon application to Mr. Charles S. Stevens, Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

NOVEMBER 8.—**Aberdare.**—OILS, ETC.—The Directors of the Powell Duffryn Steam Coal Company, Ltd., invite tenders for the supply of:—No. 16.—Oils, tallow, and grease. Forms of tender and all particulars can be obtained on application to the Stores Manager, Aberaman Offices, Aberdare.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*ASSISTANT SURVEYORSHIPS OF BUILDINGS (4)	Commrs. of P.W. in Ireland	See advertisement in this issue	Oct. 30
*HEADMASTER SCHOOL OF ART AND TECHNOLOGY.....	Poole Education Committee	200l.	Nov. 15

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*FREEHOLD RESIDENCE—At the Railway Hotel, Worcester Park, Surrey.....	Driver, Jonas, & Co.	Oct. 26
*BUILDING MATERIALS, ST. JAMES', S.W.—On the Premises	Horne & Co.	do.
*TIMBER MERCHANT'S PLANT AND MACHINERY, FULHAM—On the Premises	D. White	do.
*DEALS, BATTENS, ETC.—Great Hall Winchester House, Old Broad-street, E.C.	Churchill & Sim	Oct. 27
*BUILDING PLANT AND MATERIALS, KENNINGTON, S.E.—On the Premises	H. J. Bromley	Oct. 28
*BUILDERS' MERCHANTS' STOCK—At 10, Lonsdale-road, Salusbury-road, N.W.	Skelding & Holland	do.
*WDWRKG. MCHRY., BLDR'S. PLANT, ETC., BELVEDERE-ROAD, S.E.—On the Premises	Fuller, Horsey, Sons, & Cassell	Nov. 10
*FREEHOLD BUILDING SITE, BOROUGH HIGH-STREET—At the Mart	Jones, Lang, & Co.	Nov. 15
*FREEHOLD BUILDING SITES, MANSION, ETC., ANGLESEY—At the Mart	J. A. Lumley & Dowell	Dec. 7

PRICES CURRENT OF MATERIALS.

**** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	,, delivered
Flettons.....	1 4 6	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing..	5 0 0	" " "
Best Blue Pressed Staffordshire ...	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers.....	10 7 6	" " "
Headers	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers...	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End.....	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Best Dipped Salt Glazed Stretchers	10 7 6	" " "
Headers.....	9 17 6	" " "
Quoins, Bullnose, and Flats	13 17 6	" " "
Double Stretchers	15 17 6	" " "
Double Headers...	12 17 6	" " "
One Side and two Ends	16 17 6	" " "
Two Sides and one End.....	17 17 6	" " "
Splays and Squints	15 7 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.
	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement.....	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt.....	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt.....	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

STONE (*continued*).

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks ...	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks.	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
Scappled random blocks.	3 0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes).....	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality ,,	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green ...	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles...	42 0	per 1000 at rly. dep.
Hip and Valley tiles ...	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles ...	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards) ...	57 6	per 1000 "
Do. Ornamental do.....	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles.....	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles.....	48 0	per 1000 ,,
Best Ornamental tiles.....	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced.....	50 0	per 1000 ,,

TILES (*continued*).

	s. d.	
Best "Hartshill" brand plain tiles, pressed	47 6	per 1000 at rly. dep.
Do. Ornamental do.....	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced ...	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6 ...	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	,,
2 in. by 4 in. and 2 in. by 6 in. ...	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in. ...	8 10 0	... 9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	,,
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.).....	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	... 4 15 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.....	22 0 0	... 23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
3 in. by 9 in.....	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.....	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 0 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
Battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube...	0 3 6	... 0 5 0
Danzig and Stettin Oak logs— Large, per ft. cube	0 3 0	... 0 3 9
Small " "	0 2 6	... 0 2 6

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3482. OCTOBER 30, 1909.

Contents.

PAGE

THE LABOUR EXCHANGES ACT AND THE GERMAN SYSTEMS 453
THE YORKSHIRE MINSTERS 454
NOTES 456
THE ARCHITECTURAL ASSOCIATION 457
LONDON MASTER BUILDERS' ASSOCIATION 462
THE INSTITUTE OF METALS 463
NATIONAL INSTITUTION OF APPRENTICESHIP 464
THE SOUTH KENSINGTON SKETCHING CLUB 464
BUILDERS' CLERKS' BENEVOLENT INSTITUTION 464
ARCHITECTS' TECHNICAL BUREAU 464
THE LONDON COUNTY COUNCIL 464
COURT OF COMMON COUNCIL 465
ENGINEERING SOCIETIES 465
METROPOLITAN ASYLUMS BOARD 465
MEETINGS 466
FIFTY YEARS AGO 466
ILLUSTRATIONS:—
PREMISES, NOS. 398 TO 422, OXFORD-STREET 466
OFFICES, CAPEL HOUSE, NEW BROAD-STREET 466
MEMORIAL FOUNTAIN, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET 466
CLERGY HOUSE, ST. MARGARET OF SCOTLAND, ABERDEEN 466
ST. WILFRID'S CHURCH, KIRKBY-IN-ASHFIELD, NOTTS 466
APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1908 468
LONDON AND PROVINCIAL BUILDERS' INFORMATION CENTRE 469
ARCHITECTURAL SOCIETIES 469
BOOKS RECEIVED 470
COMPETITION NEWS 470
CORRESPONDENCE:—
DRY ROT IN BUILDINGS 470
REINFORCED CONCRETE 470
LONDON AND DISTRICT BOROUGH COUNCILS 470
PROJECTED NEW BUILDINGS IN THE PROVINCES 471
MASTER BUILDERS' ASSOCIATIONS, ETC. 471
OBITUARY 471
GENERAL BUILDING NEWS 471
MISCELLANEOUS 473
LAW REPORTS:—
DISPUTE BETWEEN QUANTITY SURVEYOR AND CONTRACTOR 473
EAST BARNET DRAINAGE DISPUTE 474
PATENTS 474
SOME RECENT SALES 474
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN 475
PRICES CURRENT 477
TENDERS 478

Illustrations.

PREMISES, No. 398 TO 422, OXFORD-STREET. MR. R. FRANK ATKINSON, F.R.I.B.A., ARCHITECT.

OFFICES, CAPEL HOUSE, NEW BROAD-STREET. MR. C. F. A. VOYSEY, ARCHITECT.

MEMORIAL FOUNTAIN, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET. MR. F. L. PEARSON, F.R.I.B.A., ARCHITECT.

CLERGY HOUSE, ST. MARGARET OF SCOTLAND, ABERDEEN. MR. G. G. IRVINE, A.R.I.B.A., ARCHITECT.

NEW INTERIOR, ST. WILFRID'S CHURCH, KIRKBY-IN-ASHFIELD. MR. LOUIS AMBLER, F.R.I.B.A., ARCHITECT.

Illustrations in Text.

PAGE

ST. WILFRID'S CHURCH, KIRKBY-IN-ASHFIELD, NOTTS:—
PLAN BEFORE DESTRUCTION BY FIRE IN JANUARY, 1907 467
PLAN AS REBUILT, ALTERED AND ENLARGED 467
VIEW OF THE INTERIOR AS IT WAS BEFORE THE FIRE IN 1907 468

The Labour Exchanges Act and the German Systems.

THE Labour Exchanges Act, which has recently received the Royal assent, is an enactment to provide for for the establishment of labour exchanges and for other purposes incidental thereto. It will necessarily have far-reaching consequences, if only from the fact that its purpose will be a Government concern and not one, though national in a restricted sphere, carried out by municipal and private bodies. The intention of the Act is comprised in six short sections, which may be summarised as follows: It gives power to the Board of Trade to establish, maintain, or assist exchanges where thought fit, and also furnish information as to where labour is being demanded or sought. By means of regulations, the Board can also control the management of any exchange it establishes or assists.

Two particular points are mentioned in the second section, which are of considerable importance to workpeople. The first of these arranges that pecuniary assistance may be given to workpeople travelling to places where work has been found for them, providing the consent of the Treasury has first been gained. The second states that in the regulations the Board may make, it shall be provided that no person shall suffer any disqualification or be otherwise prejudiced on account of refusing to accept employment found for him where the ground of refusal is that a trade dispute which affects his trade exists, or that the wages offered are lower than those current in the trade in the district where the employment is found.

A safeguard to both employers and workpeople is found in section 3. It reads as follows:—

"If any person knowingly makes any false statement or false representation to any officer of a labour exchange established under this Act, or to any person acting for or for the purposes of any such labour exchange, for the purpose of obtaining employment or procuring workpeople, that person shall be liable in respect of each offence on summary conviction to a fine not exceeding 10*l*."

Officers and servants may be appointed for the purposes of the Act, and in this connexion it is interesting to note that some 800 officials will ultimately be so named. During the present financial year, however, they will be limited to about 200, with salaries generally ranging from 100*l*. to 350*l*. per annum, but a few leading appointments will command higher incomes.

Some consideration of the German systems of labour exchanges may be interesting. In that country no one system holds the field. The municipal bureaus are possibly the most important, although those established by the trades unions do a considerable amount of labour placing. In some trades the employers have created centres, and they hold that their exchanges should be the only sources through which labour should be engaged. A similar opinion is also held by the trades unions in regard to their own bureaus. There is a considerable amount of suspicion among the supporters and users of each of these systems as to the working of the other. The unions are of opinion that the organisations of the employers are not to be trusted, because a system of blacklisting exists therein which enables a workman to be marked in the event of his becoming a striker, or otherwise incurring displeasure. In fact, the workmen allege that the principal object of the employers' bureaus is the punishment of resisting labourers, and that the placing of workmen is only of secondary importance. So far is this allegation carried that it has been stated publicly that the largest employing body in Germany, the Prussian State Railway administration, accepts from and exchanges with the employers the lists of, to them, recalcitrant workmen. There is probably some justification for this belief; marked men are not unknown in many trades in this country. The action of the employers may, to some extent, be considered natural; they reserve to themselves the right to be masters in their own workplaces, and the presence therein of actively-discontented men would necessarily be a source of friction to be avoided if possible. Nevertheless, this mutual suspicion is to be deplored, and must militate against any good work the bureaus should be primarily intended for.

It is for this reason, perhaps, that the municipal exchanges are welcomed in Germany. They have gained considerable importance, as it is their particular concern as public bodies that unemployment should be as low as possible. The union exchanges have in some places dissolved in their favour, the workmen believing that their interests are thereby equally well served. One of the most important union exchanges exists at Hamburg. There, apart from labour placing, a social side is also developed. The building containing the offices cannot be admired from an artistic point of view, additions having been made without any regard to existing style. It is owned by the workmen, and cost about 50,000*l*. This sum seems somewhat large, but it is not extravagant, seeing that about 200 rooms are required to deal with the various trades using it. In addition, accommodation is provided for sleeping and meals, all at the lowest possible cost. Beds can be obtained at from 5d. to 7d., this price including coffee and roll, and meals are equally cheap. Baths are obligatory for all using the place for

Digitized by Google

sleeping purposes. For these 1d. is charged, and parcels, tools, etc., are stored for ½d.

The building trades at present in Hamburg largely pursue the methods of obtaining work in vogue here; that is to say, it is personally sought. The Hamburg employers have, however, an agency of their own. Certain private agencies also exist where the men pay a commission of about 4s. for employment obtained, and it is suspected that the foremen giving the work are not above taking a share of this. The English foreman, as a rule, may be considered as above such practices, though paying for a job has before now been heard of.

The German public exchanges number over 400, and are increasing. The municipal exchanges depend largely upon the towns' finances for their upkeep. For instance, in Dusseldorf, where in 1908 27,301 vacancies were filled, the total cost of the bureau for the year was 17,400 marks (870*l.*), towards which the town subscribed 16,900 marks.

Now the question will naturally be asked, of what use will our Labour Exchanges Act be, and what effect will it have upon the building trade here? This will require a very wide answer. For instance, much will depend upon the locality where the surplus labour is found. In small towns the workmen are well known to the employers, and vacancies are filled with rapidity. Large works in such places are usually supplied with imported labour, which migrates on its cessation. It is possible, however, in such cases that a temporary shortage may occur, and here the Board of Trade's power to collect and furnish information should be extremely useful.

In the larger centres the circumstances are different. At least three means are known of obtaining workmen. First, the foreman can usually find all the labour he wants making personal application to him. Secondly, he often acts as a private bureau himself, that is to say, he keeps a list of those men he has tried and knows. Thirdly, he can apply to a local branch of a union for such men as he may require. These three methods are placed in order of use, the most common being first. It will be obvious from this that the sympathies of the foremen must be enlisted on behalf of the exchanges before any satisfactory result of the working of the Act can be hoped for. The master builders can, of course, so direct their foremen that application should be made to an exchange. But the master builders do not, except with the smaller men, interfere in these matters. The foremen have the responsibility for good workmanship, and rightly they should have choice of their men. The men, again, desiring employment will naturally actively seek it, and it will have to be proved to them that registration at an exchange is the readiest means of doing so. This can only be done by creating the knowledge that the quickest way to the foremen is through an exchange. From this it will be seen that the foremen, as a body, hold in their hands the key to the movement's success. They stand to gain but little by it, and indifferent administration of the Act may create in them distrust of its value. For instance, care must be taken that a workman registers himself with his true vocation. The labourer who calls himself a scaffolder, the mate who terms himself a plumber, should be made to prove his title. Otherwise the foreman's disgust when the man reveals his craft will cause him to rely upon his own judgment and choose his own men in future. Section 3 of the Act, imposing a penalty upon a false representation, would not stop such practices as these; the line between a fairly skilful labourer and an indifferent mechanic is too thin.

The workmen, as a whole, should gain by the establishment of the bureaus. The heart-breaking "Not to-day," the scarcely less so "Call again in a week," the wearisome waiting outside of works and long tramps from place to place, should be lessened, if not entirely disappear. Few things can be more demoralising than such casual, because undirected, use of energy.

It will, of course, be found necessary to provide offices for the work of the exchanges, and some curiosity will be felt to ascertain what type they will prove to be. If simply offices, no approximation will be made to the German trades union buildings, as no social side will exist. Perhaps a suggestion may be offered in this respect. There exist, at least in London, a number of working-class hotels founded by Lord Rowton. They are self-supporting concerns, and are admirably managed. Generally situated in working-class districts, they would make admirable adjuncts to the severely-official bureaus the Act provides for, and form rendezvous for the workmen during the period of waiting which is bound to ensue after registration. We think the idea worth consideration by those concerned.

THE YORKSHIRE MINSTERS.

THE Yorkshire Minsters, though few in number compared with the dismembered abbeys touched on in a previous paper,* are, at all events, great in scale and whole in structure. York, Beverley, and Ripon are, of course, the churches traditionally so styled, and with them, if the ancient ecclesiastical boundaries were followed, would be included Southwell, formerly one of the four mother churches of the diocese and a residence of its Archbishops.

At the outset, however, one is led to inquire, what is conveyed by the term "Minster"? By what curious paradox do we apply a word obviously derived from *Monasterium* to churches which, at all events since the Conquest, never were monastic, while denying it to abbey churches that never were otherwise? How is it, again, that except in regard to place-names, such as "Westminster," "Leominster," and so forth, this designation is practically confined to a few northern churches? As to the first point, one is led to conclude that the Saxon "Minster" came in time to be used for any and every church to which a corporate body of clergy was attached, and hence to secular cathedral and collegiate churches; while later the monasteries themselves became specifically known by their Norman titles of "Abbey" and "Priory." The territorial limitation of the term must doubtless be set down to the conservatism which has kept alive in the north of England so many interesting forms of speech elsewhere lost. In view of these circumstances, it is a matter for much surprise and regret that those locally responsible should not have jealously maintained this venerable and distinctive appellation. They have, on the contrary, suffered—or rather caused—it to be overlaid and lost in the modern title of "Cathedral" conferred on Ripon and Southwell. The mitre, in fact, has been used to extinguish the Minster—just as though York, their illustrious neighbour, were any less a cathedral for being known, and having always been known, as "the Minster." Let us hope that good taste and tradition will reassert themselves in these other cases.

York Minster is not a building to be viewed with unmixed admiration. Magnificent in its dimensions beyond others, ornate above the ordinary, in its proportions and composition it is less satisfactory than most. The Perpendicular towers sit uneasily on the beautiful Decorated façade, and, with their short belfry windows and projecting parapets, are lacking in elegance and expressiveness—one has only to compare the contemporary towers of Beverley to see how much less felicitous are these. The flat pitch of the nave roof and the shallowness of its parapets are not agreeable, while the great lantern lacks that second stage which would have secured its own dignity and lifted up the whole fabric. Internally, nave and transepts strike one with their excessive breadth; while the wood vaults and the curve of them are felt to be a blemish. In the expanse of the west wall the main window appears dwarfed and feeble—in this contrasting strangely with the daring—perhaps too daring—conception of the celebrated Five Sister group in the transept end. The contours of the later piers lack sharpness, and consequently shadow, as the capitals lack force. The leading lines of the Early Perpendicular choir, however, are more satisfactory. Its "walls of glass" were noted with admiration by Æneas Sylvius, afterwards Pope, in 1430—though few will see in them the magical lightness of the rival choir at Gloucester, almost their contemporary. But the chief and unquestioned glory of this choir of York lies in the rich colouring of the ancient windows it has so fortunately preserved.

After discrimination and disappointment, it is with the more delight that one reaches at length the lovely Chapter House and its approach. Here there is nothing commonplace or imperfect, but a nervous brilliancy of design that justifies for this building its well-known title, *domus domorum*, even as against its gracious elder sister at Southwell. Planned as a hexagon (always a beautiful form), a consistently refined and clear-cut character pervades the whole fabric. Its markedly vertical and pyramidal lines, its acute-arched and deep-set windows, with their crisp and slender tracery, the sharp definition of mouldings and minor details—all declare the conscious and purposeful artist.

Unfortunately this special feature of York is precisely that which is wanting at Beverley. The Chapter House has

* See *Builder* of July 10.

Digitized by Google

disappeared, and only the beautiful arcaded stairway and entrance in the choir aisle are left. In other respects, Beverley shines just in points where York fails. The leading lines of its otherwise very similar towers are much finer, and the whole west front aspires boldly. The detail here, indeed, is somewhat wiry, and the ancient sculpture has vanished—a loss which it is vainly sought to repair by a gradual replacement with new, regardless of the facts that in no respect is mediæval work less reproducible than in its imagery, and that, merely as a matter of art, none but the best of modern work should be tolerated. Again, where York is unduly broad, Beverley is narrow and relatively lofty, so that its comparatively moderate dimensions produce a more striking effect than does the greater building. Its remarkable symmetry and its double transepts conspire with these proportions to form a most stately building, and a study in the art of the enhancement of dimension by design. The unequalled acuteness of its Early English forms—singular too in their refinement—contributes greatly to this end. Only in the main vault, by an unfortunate deviation, does this aspiring acuteness give place to rounded shapes, and impair the unity of impression.

Of very special interest is the fact that this Early English scheme of design once laid down in the choir and transepts was, here as in Westminster Abbey, adhered to and carried on westwards in the XIVth-century nave, in all main points except the tracery windows, and even in minor ones. As to these last, it is significant that where, in part of the work, a genuine Decorated arcading has been substituted for an imitative Early English one, the former is much the less elegant of the two. The Decorated, however, comes to its own in the beautiful altar-screen and the more beautiful Percy tomb adjoining. This noble canopy, as perfect in its preservation as in its design and workmanship, shows us the Flowing Decorated at its finest (and perhaps it was at its best in small and precious work), suave without weakness, and opulent without excess. One can only lament that the effigies themselves have disappeared from beneath their shrine.

The Minster, so admirable in its structure, is in its surroundings singularly poor and prosaic—none more so among our greater churches. Saving a couple of old houses on the east, one of which has been suffered to decay, and an old-fashioned building on the north, there is nothing of any antiquity; neither cloister, nor close, nor gateway, nor ecclesiastical dwellings; nothing, in fine, of those adjuncts and appurtenances which add dignity and completion to an important church. The advantage of such accompaniments will be generally allowed.

Yet in practice few points are less commonly appreciated than the proper setting of an ancient ecclesiastical building, or indeed of any conspicuous building. No error is still more commonly held than what may be called "the opening-out fallacy." The approved ideal is to free the edifice as far as possible from all neighbours, to widen approaches, clear away obstacles from spaces round about it, and leave it everywhere open to view and access; a process capable of dwarfing the vastest structures, as those can witness who first sight from the end of a long approach St. Peter's in Rome or the Law Courts in Brussels. Moreover, a building set, as it were, in a void is a building displaced. It needs, on the contrary, an atmosphere—preferably, of course, of its own age; and all those annexes and enclosures belonging to it, all those accidents and irregularities and time-growths round about it, give scale, support, interest, and variety invaluable to the main pile. A great building gradually disclosed gains in greatness, and grouped with others, even of inferior age and interest, gains in charm; almost anything, in fact, is better than nothingness. Lamentable is the havoc a misguided zeal has made in the precincts of too many of our historic buildings. York itself is a case in point, where at great pains and cost the south-western approach was opened out, transformed, and modernised. On a lesser scale elsewhere the thing is constantly being done.

There is a correlative fallacy, however, regarding the nature of an enclosure, when an enclosure has to be made; and this might be termed "the garden fallacy." No roughness or neglect or dilapidation could perhaps form, in respect to appearance, so unsuitable a setting for an ancient building as a trim, modern garden. The quality of strength in a mediæval building will find some affinity with rudeness; its own vital merits will discount the presence of carelessness and decay, which are, after all, but negative; but its strenuous beauty must be ever at variance with all that is merely neat and artificial, with fancy beds and "laid-out paths," and dwarf rails, and casual shrubs, with whatever is spruce and trivial. Yet this is an ideal deplorably prevalent. Far better the wallflower and valerian springing free and untended from the ancient stonework, as from its parent crag. Better even the roughness of some honest industry; it is only smartness that in such a connection is unbearable.

There is, indeed, none of this smooth suburbanism in the case of Beverley; but alterations have latterly been carried out which it will be instructive to note by way of warning. The plain, sensible churchyard wall has been lowered, and upon it and along the pathways has been set up a high and hideous iron railing—without question the very worst form of enclosure for an ancient builidng, and always an eyesore and anachronism. Within the pens thus formed have been planted numerous trees, which are fast springing up, and will soon obscure the whole lower part of the Minster. Many churches have thus been smothered in greenery at the hands of those who would denounce as obstructive any old-fashioned building or inoffensive wall which should impede the view. The whole question of foliage and of natural features in connexion with architecture is, on other and æsthetic grounds, a difficult one—for nature and art require to be brought into some sort of harmony with each other if juxtaposed. There is a good deal to admire in the green expanses and forest timber of some of our cathedral closes, and they have something of the breadth and scale of the building itself; but even so they are not architectonic. Probably the best solution is to be found in those stately screens and avenues of formalised foliage, of which the best examples are to be found in the Netherlands. For it is evident that the building itself must strike the keynote. After all, it is but the accepted principle of the "formal garden" applied on a large scale.

Ripon Minster must have once presented, in its main approach, a highly picturesque example of environment—a narrow, curving, and somewhat declivitous street, terminating in a gateway, beyond and over which upreared themselves the triple spires of the great church. The gateway is gone, the precinct beyond them has been "opened out" on the north-west, while the spires have long since ceased to crown the three towers. Of the many great English churches which have lost their original pyramids of lead and timber, none perhaps suffers more thereby than Ripon, for its external proportions are unusually depressed and compact, and sorely need uplifting. The towers, in fact, were designed for spires, and not Lichfield deprived of hers would be more impoverished than is Ripon to-day. This being so, it is a matter for some surprise that the restitution effected years ago at Southwell has not found a sequel here. Such unspeakable injury, it is true, has been done up and down the country under the name of "restoration," that it is with trepidation that one hints at anything resembling it; but if ever there were a case where a bold strike of rehabilitation could be justified, it is such a one as this, where loss and alteration would be *nil*, and gain so great. It must be remembered also that it is a question not at all of detail, but of pure mass and outline, and that forms and dimensions are on record. Nor would the new work pretend to be other than new.

Architecturally, the Minster, though comparatively small in size and of but average quality in design, is nevertheless one of the most interesting churches in the country, inasmuch as it bears stamped upon its face with unusual plainness the story of its growth and variations from beginning to end of its development. Its very irregularities are intensely instructive; especially that of the two-sides-Norman and two-sides-Perpendicular Middle tower, with its extraordinary internal result. From St. Wilfrid's Saxon Crypt, moreover, to the tower-transformation work arrested at the Reformation, no leading phase in the evolution of mediæval architecture is unrepresented. It is undeniable that the west front of the church is somewhat heavy and commonplace in design, and sadly needs the uplifting influence of the vanished spires. Later mediævals saw a certain baldness in the broad Early English lancet windows, and relieved it by the insertion of delicate mullions and tracery—refinements which the XIXth-century restorer actually took it upon himself to remove! The geometrical east end, on the other hand (as to its gable a conjectural restoration), is, especially in the great window, a very graceful piece of work, yet by no means of the great Yorkshire school of this period. The transitional work in the choir and transepts, belonging to a most important phase of development, is of the highest interest; but the most

Digitized by Google

charming bit of work in the church is perhaps the three-story annexe south of the choir-aisle, where a square-ended lady chapel of Decorated date is delightfully superimposed on an apsidal Norman chapel and crypt. The great, and indeed disproportionate, width of the Perpendicular nave is explained by the fact that it was set out—as the end walls testify—on the foundations of its transitional predecessor, which, being aisleless, was built for breadth; but the character of the work, barely finished before the Reformation, is singularly good for so late a date.

W. R.

NOTES.

Society for Promotion of Roman Studies.

THE Council of the Hellenic Society is endeavouring to promote the formation of a Society which should do for Roman or Latin studies what the Hellenic Society has done for Greek studies. The scope of the proposed Society would be ancient Roman civilisation in all lands of the Roman Empire, together with its survivals in Italy and Western Europe down to the end of the Middle Ages. We should hope that such a scheme has only to be named to obtain all the promise of support that would be necessary to start it. Though Roman work can never, in one sense, have the supreme interest which attaches to all the productions of the genius of the Greek mind, it has the compensation of presenting far wider interests in a geographical and historical sense, since for some centuries the Roman power dominated the then known world; and the promotion of Roman studies ought to be of special interest to architects, as Roman architecture represents all the connecting links between classic and mediæval architecture, between the antique and the modern world. It is proposed that, as in the case of the Hellenic Society, the subscription should be an annual one of a guinea, entitling subscribers to receive a journal of Roman or Latin studies (corresponding to the *Journal of Hellenic Studies*), and to have facilities for borrowing books and lantern slides. Readers who wish to support the scheme, and to become eventually subscribers to the Society for the Promotion of Roman Studies, should communicate at once with Mr. J. ff. Baker-Penoyre, the Secretary of the Hellenic Society, at 22, Albemarle-street, W.

The Building Trade and the Finance Bill.

THIRTY-EIGHT firms engaged in the building trade in East London have now signed a memorandum protesting against the provisions of the Finance Bill. These protests from builders from all the points of the compass round London surely in themselves form a sufficient commentary on a Bill, the professed object of which is to foster building development. The recent debates in Parliament have only emphasised the fact that the interference with the natural development of land and freedom of contract for alleged fiscal purposes is as impracticable as it is undesirable, and is, moreover, only calculated to hinder that very class of enterprise and real development which the authors of the Bill put forward as the object to be attained and as an excuse for this novel departure in taxation.

Bardney Abbey.

THE Vicar of Bardney sends us an illustrated pamphlet containing an appeal for subscriptions in aid of the work now in progress in excavating the remains of the Benedictine Abbey of SS. Peter, Paul, and Oswald, at Bardney in Lincolnshire. As far as we gather from the statement, the main object is to purchase permanently the site of the church, so that it need not be filled in again, while in the meantime the chief labours are being directed to the excavation of the remains of the other buildings, where the ground has to be filled up within a limited period. To purchase the church site and carry out the other excavations 1,000*l.* would be required, of which 240*l.* has been raised and 150*l.* expended. The photographs show that very fine bits of ancient Gothic detail have been already unearthed on the site of the church, and it is certainly desirable that this site should be purchased and the church completely explored, and retained permanently for inspection.

Kingston Bridge.

WHEN we found, some little time ago, that tramway lines had been carried across Kingston Bridge and that the tram service was in full working order without any alteration having been made to the bridge, we concluded that "this calamity was overpast," and that the local desire to destroy a beautiful Thames bridge had been appeased. We regret to find, however, that Kingston Bridge is still in danger, and that it is even matter of indignation against the Borough authorities that the bridge is still *in statu quo*. The phrase used, we observe, is "the extension of the bridge," and we pointed out before that if the widening of the bridge were proved to be a necessity, the proper way to do it would be to take down one face of the masonry and rebuild it after having widened the arches and the roadway. This, of course, could be done without materially injuring the architectural effect of the bridge, though we have no doubt that there are a number of people who would be much better pleased to pull it down and substitute a girder bridge with a level roadway, thereby destroying the picturesque charm of the river at Kingston. Pretty frequent visits to Kingston leave us in doubt whether there is any practical necessity for altering the bridge at all. We have never seen any derangement of traffic due to the existing bridge, and we are inclined to believe this is only another instance of the present passion of local authorities for destroying anything that is old and beautiful.

Guild of Architects' Assistants.

WE have received a circular giving an account of the formation and the conditions of the Guild of Architects' Assistants. As we observed when it was first mentioned, this is really the original commencement of the Architectural Association over again; but the Association has soared into much wider fields now, and there is room for a new Society to look specially after the interests of architects' assistants as much. One of the reasons given why an assistant should join is stated as follows:—

"To protect himself as far as possible against unscrupulous principals. The principal always has his remedy for an incapable assistant—he can dismiss him, but the assistant had no one to advise or support him if necessary. The Guild proposes to do this by (*a*) friendly overtures to the principal, (*b*) by legal aid, (*c*) by publication of the details of a case, or (*d*) by giving publicity to shady professional practices."

There have occasionally been very bad cases of unjust dismissal, though we should hope they are not very frequent; but the assistant is no doubt at times in a very unfortunate position and needs a representative body that will stand by him. It is proposed also to establish employment bureaus in all centres, in communication with each other, and it is suggested that principals would also find it useful to join the Guild on this account, and for other reasons would do well to give their support to it. Any further information can be obtained from the Hon. Secretary, 60, Idmiston-road, Stratford, E.

Cheaper Gas Manufacture.

DURING the present year a noteworthy change has taken place in the method of coal carbonisation adopted in several large gasworks. Hitherto it has been the common practice to place about 6 cwt. of coal in each retort, and to allow six hours for its carbonisation. It has recently been found that by putting about double the usual quantity of coal into each retort, and allowing the coal to remain under the influence of heat for a longer period, the cost of manufacture is materially reduced, and better coke, better tar, and a larger yield of gas are obtained. It is surprising that this simple discovery was not made long ago, but with the old method of charging the retorts by means of a long scoop lifted by a gang of men it would not have been easy to put in the heavy charges which are now readily introduced with the aid of machines. The machine now commonly employed for charging retorts is a projector operated by electricity. In this machine the crushed coal falls upon a band travelling at a rapid rate, and is projected with considerable force in a horizontal direction from the band into the retort. The machine is controlled by one man, who stops the flow of coal when the retort has been filled to the required extent. The residual red-hot coke is no longer drawn out of the retorts with rakes, but is pushed out by a ram operated by electric or hydraulic power. The number of men required in the retort-house has been largely reduced, and the work is much less arduous than formerly.

Troublesome Excavation at Brooklyn.

MANY years ago, when the first dock was constructed at the American Navy Yard, Brooklyn, it was found necessary, owing to the presence of quicksand, to avoid excavation over large areas. The plan then adopted was to execute the work in small sections, thus giving the sand the least possible opportunity of moving. No doubt this mode of procedure is neither rapid nor economical, but in the face of recent experience it is preferable

Digitized by Google

to modern methods of work at the same place. Two attempts made to build a dry dock at the Navy Yard have resulted in failure, and only last month the second contract was cancelled. The quicksand, cut into by extensive excavations renders operations extremely risky, and at the same time involves danger to structures in the immediate vicinity. Since the present undertaking was commenced, various buildings have been damaged by subsidence, a main sewer has cracked, and the stability of adjoining docks has been imperilled. The future conduct of work will probably be entrusted to the engineers of the Navy Yard, who will do well to study any available records as to the procedure adopted by those who built the existing docks at Brooklyn.

The Sioule Gorge Bridge.

FROM a statement by M. le Chatelier, the chief of the contracting firm by whom the Sioule Gorge Bridge was constructed, the most difficult operation was the connexion of the two main trusses at the centre of the middle span. As mentioned in our "Note" of October 16, these girders were built out from the abutments and over the lofty intermediate piers. When completed to the required length, the end of each member was slightly below the horizontal owing to deflection, and in order to make the joint it was necessary to raise the ends to bring them up to the correct level. To do this it was necessary to lift the entire bridge from its supports on the piers, at the same time lowering the ends resting upon the abutments. The weight on each pier was 1,200 tons and four 300-ton hydraulic jacks were employed in the operation of lifting. The jacks were placed on rollers permitting lateral movement which was imparted by a small hydraulic jack. By the aid of these appliances the two trusses were brought opposite one another, and the chords were connected by temporary bolts. Then the continuous girder so formed was jacked up at the abutments, and lowered uniformly upon its final bearings, the bolts being replaced by rivets, and all other necessary joints finally completed.

Adelaide Galleries, West Strand.

ALTERATIONS, comprising the formation of a new restaurant upon the first floor, are to be effected at the Adelaide Galleries, by Messrs. Wylson and Long. The Adelaide Gallery was built as an adjunct of the (old) Lowther Arcade for Jacob Perkins from designs by Witherden Young, the architect also of the Arcade. That was done at the time of the rebuilding of West Strand on the north side by Burton, who built the triangular block of which Adelaide-street forms the west side, under the provisions of the Act of 1826 (7 Geo. IV., c. 77) for making extensive improvements and widenings in that quarter. Perkins exhibited his steam-gun there, and in 1832 a society was formed for the exhibition of models of inventions and so on; the rooms were then used for concerts and entertainments. In 1852 the Gallery was converted into the Marionette Theatre, and fifteen years ago it was again altered, by Mr. W. B. Pinhey, and incorporated with A. & S. Gatti's restaurant.

Architects' Responsibilities.

WE draw attention to an important letter on another page, arising out of the recent case of "Shoolbred *v.* Wyles," commented on in our last issue (page 429), and raising the question how far an architect is to be held responsible to his client for mishaps in a building which may have arisen through no fault of his own, or through orders given by the client without his knowledge. The points raised in the letter are of some importance, and we should be glad to have other opinions on them.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of the Architectural Association was held on Friday evening last week, at No. 18, Tufton-street, Westminster, S.W., Mr. H. Tanner, President, in the chair.

The minutes of last meeting and some nominations having been read,

Mr. Maurice Webb, Hon. Secretary, announced that a meeting of the Debating Society would be held on the 29th inst., when Mr. Halsey Ricardo would read a paper entitled, "That External Colour Decoration is Necessary to the Completion of Town Architecture."

Election of Members.

The following gentlemen were then elected members of the Association:—

George West, Shepperton, Middlesex
T. B. Whinney, Old Jewry
M. Robertson, Bedford-square
E. T. Dunn, Ilford
H. C. Pullin, Parson's Green
C. E. Worthington, Bridge-street, S.W.
E. A. Stone, Catford
C. A. R. Barry, Victoria-street, S.W.
T. J. Burnie, Grosvenor-road, S.W.
E. K. Smith, Muswell Hill
L. R. Thomson, Catford
A. B. K. Cook, Chelsea
W. W. Nimmo, Leytonstone
H. D. Hendry, S. Wanstead, Essex
K. B. Mackenzie, Bedford-row
H. R. Chanter, Shepherd's Bush
L. E. Williams, Purley, Surrey
H. Sawyer, Kenley, Surrey
E. Belfield, Church End, Finchley
N. F. Woodroffe, Purley Downs, Surrey
S. J. Edwards, Pinner
G. B. Owen, Hampstead
P. H. E. Bagenal, Cheyne-walk, S.W.
N. C. Theodossatos, Hampstead
C. E. FitzSimon, Kensington
R. Kirby, Dulwich
W. A. C. Adams, W. Kensington
T. F. Ford, Peckham
W. F. Dawson, Tavistock-place, W.C.
H. J. Birnstingl, Kensington
W. T. Ching, London
S. T. Nunn, Willesden
H. E. Breach, Horsham
J. B. M. Walch, Dulwich Village
E. L. F. Davey, Barking, Essex
G. W. Stuart, Ilford
C. C. Sealy, Ingram House, S.W.
E. R. Jarrett, Clapham Park, S.W.

Report and Balance Sheet.

The President then proposed the adoption of the Council's Report and Balance-sheet for last session.

Mr. H. T. Hare seconded and the motion was agreed to.

Most of the matters dealt with in the Report were referred to by the President in his address at the last meeting of the Association.

The Cheltenham Excursion.

Mr. F. D. Clapham then read the following paper on "The Architectural Association Excursion to Cheltenham and District, 1909," the paper being illustrated by a large number of lantern views of places visited.

Cheltenham and District.

"It was in 1895 that the Architectural Association first visited this district, and most of the places then seen were again on the programme for this year. As before, our headquarters were at Cheltenham, and it is interesting to record that there were, out of the twenty-six members who formed this year's party, nine who had been on the earlier excursion. All the places visited were, with the exception of Gloucester, in the Cotswold district, which lies to the east of Cheltenham.

Geologists inform us, that at a certain remote period in the history of the earth, Leckhampton Hill, which rises above the town of Cheltenham, was a high cliff overlooking the sea, that this sea entirely covered the valleys, which now extend from the Bristol Channel to the North of England, also that the hills in the immediate neighbourhood, Bredon and Churchdown, were islands rising out of these waters. They were bounded on the west by the Welsh mountains, and in course of time a great upheaval of the northern portion took place, so that the lower part became an estuary running up from Gloucestershire into Worcestershire and Warwickshire.

From the number of barrows and weapons which have been discovered in this district, it was probably a popular one with the Ancient Britons, and when in the middle of the Ist century the Romans conquered this part of the country, they raised and enlarged the earlier fortifications.

It was in the year A.D. 43 that the Romans completely routed the British Army and drove them from the Cotswolds, the city of Gloucester being captured by the Emperor Claudius himself. They established a chain of watch-towers on the various hills and built several military roads—Ermine-street, between Gloucester and Cirencester, the Fosway over the Cotswolds to the north, and Ickneild-street, which led to Wales—these exist to the present day.

Christianity was introduced soon after the Roman Conquest. Probably this district was the first to embrace the Christian faith, and it is believed that St. Paul himself preached in Gloucester.

The Romans existed in these parts for a period of 400 years, and, as showing the extent to which they populated this neighbourhood, out of just over 300 parishes in Gloucestershire, Roman remains have been found in about a third. They soon discovered its fertility, for about the end of the IIIrd century they started to cultivate vines, and in the earliest Anglo-Saxon charters vineyards are constantly referred to, and the willow is mentioned as being cultivated for binding the vines towards the end of the VIth century.

The Saxons defeated the Romans in a big battle at Derham, capturing the two Roman cities of Gloucester and Cirencester, and during the Heptarchy this district became incorporated in the Kingdom of Mercia, and Cheltenham, which occupied a position between the two royal residences, Winchcombe and Gloucester, became an important place, and the Manor was the property of the Crown.

A Benedictine Priory was founded in Cheltenham at the end of the VIIIth century, and about 100 years later a monastery was built by King Offa in the village of Cleeve.

In the middle of the XIth century King Edward the Confessor became Lord of the Manor of Cheltenham, and granted it a charter, and from that time until the reign of James I. the Manor was generally held by the reigning monarch.

In the year 1628 the Prince of Wales, afterwards Charles I., sold the Manor to John Dutton for 1,200*l*. It remained in the Dutton family for over 200 years, and in 1776 was sold to Lord Sherborne, and when it was again sold in 1843 it realised 39,000*l*. While on the subject of land it is interesting to record that in 1086 William the Conqueror, while holding his Parliament at Gloucester, decided on the survey of England, known as the Doomsday Book. In this record Chelten ham is spelt Chinteehe, about twenty years later it was spelt Chilt, and the modern spelling of the name does not occur in any documents until the Manor Act of 1625.

In the middle of the XVth century the town seems to have fallen on evil days, for an Act was passed releasing the lay people of the town from local taxes on account of the poverty of the place, and in 1468 the town petitioned the Queen to allow them to discontinue the sending of two Members to Parliament on account of the expense. A few years later Edward IV. halted in Cheltenham for a short time with his army on the eve of the battle of Tewkesbury. The town seems to have suffered during the Civil Wars,

Digitized by Google

and afterwards its history is so obscure that it probably degenerated into quite a small village, for in 1666 there were only 1,500 inhabitants, and just over 300 inhabited houses, and even 130 years later there was only a slight increase in the population. It was at this time, however, that the mineral waters were discovered, and the prosperity of the town was renewed, for in 1811 the inhabitants numbered 8,000, and in 1861 36,600, and 30 years later 50,000.

In the early part of the XVIIth century this district was noted for the cultivation of tobacco. It was a flourishing trade in 1652, when in order to encourage the English plantations abroad an Act was passed "prohibiting the planting of tobacco in England," which, as recorded in the "perfect Diurnall" of the House of Commons, "materially affected the interests of many persons in Gloucestershire, particularly Cheltenham and Winchcombe." The inhabitants of these two towns petitioned against this, but without success, and troops were sent from Gloucester to destroy the plantations, but the people drove them back; the industry, however, seems to have gradually died out.

Cheltenham has been termed the Garden City, and it certainly abounds in gardens, both public and private; it is beautifully situated in the valley of the Severn at the foot of the Cotswolds, which bound the valley on the east side, while on the west are the Malvern and Forest of Dean Hills. From these hills come numerous springs, forming brooks, which run through the villages of the district and make them so picturesque. At Seven Kings, about 4 miles from Cheltenham, the River Thames has one of its sources.

The Cotswold district was for centuries celebrated as the centre of the sheep-farming industry, and even 800 years ago wool from this district was exported to Flanders and elsewhere, and, judging from the size of the farms and the outbuildings generally, the farmers three or four centuries ago must have been very prosperous.

The domestic architecture is probably as interesting and characteristic as that of any other part of the country. Its chief charms are its great simplicity and splendid proportion. The character of the work is generally the same owing to the natural use of local materials, built according to local traditions, and influenced by surrounding conditions.

The houses were generally built in some sheltered position, often on sloping sites, but beyond this precaution very little attention seems to have been paid either to aspect or situation. The whole district being a stone one, all buildings were constructed in limestone, usually quarried from the immediate neighbourhood. The stone weathers well, and when first quarried is distinctly yellow, but it soon tones down, and takes on after exposure all kinds of beautiful greys and yellows. In the better class of work the exterior walling was executed in ashlar, carefully dressed, with upright joints, and laid square on bed.

The plans of the houses were very simple, and the stone outer walls were 2 ft. to 2 ft. 6 in. thick, the internal divisions being simply lath and plaster or oak panelling. In order that they might be roofed in one span, the plan was usually one room deep, the rooms being 16 ft. to 20 ft. wide.

The roofs were of a steep pitch, and covered with stone slates, laid in diminishing courses, and the roof space was used for bedrooms and lighted by windows in the gable ends or by dormers. Very often the wall plate was placed in the centre of the wall, and the stone slates at the eaves were bedded on the wall with only a slight projection, which gave a considerable tilt to the eaves. There were no gutters, and at the intersections of the roofs the stone slates, which were laid without any torching, were brought round in a sweep, a method known locally as "galetting," and the ridge piece, too, was sawn out of a block of stone. In many cases the copings to the gables are only a few inches higher than the stone slating behind, and in the smaller houses the slates simply project a little in advance of the wall face. The chimneys were usually carried up centrally over the ridge, the flues being built separately, either square or diagonally in groups of three or four; they were formed of thin sawn blocks of stone, and finished with a moulded cornice and a weather mould at the base as a protection to the roof. The finials on the top of the gables and over the springing stones are of great variety, and were often pierced on all four sides.

The windows have stone mullions with square heads and a label mould over. These labels were very often carried round the house as a string course, and in several houses there is a set-off at each string course. The lights were narrow and squat, and usually decreased in number on each succeeding story. There was generally a thicker central mullion where the lights exceeded three in number.

The lead glazing of the windows was ornamental, and the opening casements were fitted with wrought-iron fastenings, very often beautiful in design, and showing what excellent work used to be executed by the local smiths.

There was no external porch, and where one does occur it has usually been added at some later date. The doorways were simple, the doorhead being, as a rule, four-centred and out of one stone, and internally there was no arch, but always a flat lintol. All the original doors were plain, and, like the windows, the wrought-ironwork was always good in design. A predominating feature of the inside of the houses was the large open fireplace, very often of great width compared with the size of the rooms.

The staircase was placed in the centre of the house, and in many cases had a solid newel about 5 ft. square, with solid oak treads, and when the house was built on a sloping site the different levels were very cleverly arranged. Most of the work in the district was executed between the end of the XVIth and the close of the XVIIIth century.

I do not propose to take each place in the order in which we saw them, but in the order in which they are situated on the chief roads out of Cheltenham.

Postlip Hall.

About 5 miles to the north east of Cheltenham is Postlip Hall, picturesquely situated on the slope of the hills and overlooking a valley on the south. Originally the house consisted of three distinct blocks of buildings, the eastern part being a farmhouse, with a dwelling-house on the west and two cottages to the north. Not much is known of its early history, but at the beginning of the XVIIth century the house was rebuilt by a certain Giles Broadway, or Giles of Broadway. The main elevation which faces south has a frontage of 94 ft., broken by three bays and roofed with a range of sharply-pitched gables, six in all, the one on the east being wider than the others, and evidently the older part of the house. The return elevation on the east has a series of small simple dormers along the whole length of the roof. In the centre of the house is a picturesque courtyard, containing a circular fountain, which gives it quite a continental appearance. Internally there are some fine rooms richly panelled and some good chimneypieces. The best room is the drawing-room on the first floor, which has some good panelling that has not been tampered with, and an elaborate stone chimneypiece with some curious emblematical figures in the upper part, one representing apparently Temperance triumphant over Intemperance. The chimneypieces in the dining-room and hall are richly carved in wood, but appear to have been made up to a certain extent. The one in the dining-room is dated 1614, and bears the initials of the original owner and his wife. The staircase, like others in the district, winds round a square newel wall, and has solid oak treads, with a nosing worked on.

On the slope of the hill behind the house on the north side is a small Norman chapel dedicated to St. James. Its origin is interesting, for it appears that the tenants of Postlip, in the early part of the XIIth century, petitioned the Lord of the Manor, William de Solers, to build them a chapel in their immediate neighbourhood, as, owing to the unsettled state of the country during the Civil Wars, they were afraid to attend their parish church. At the time of the Reformation it was despoiled and allowed to fall into decay, and until twenty years ago was used as a barn. It was restored in 1891, and is now used as a private chapel. It is an interesting Norman building, with a doorway on the south side. Perpendicular windows have been inserted in the west and east ends, but the original Norman windows still remain on the north and south sides, mere narrow slits in the walls with a deep splay inside. Over the chancel wall is a simple stone bell turret, and another interesting feature is a small opening high up in the nave wall on the south side with an external corbel; this was probably intended to hold what is known as the "Poor Soul light," which was a lamp lighted nightly to remind those who passed by and saw it to pray for the souls of the departed.

At the foot of the hill to the south-west of the house is an old barn, cruciform on plan, about 96 ft. long and 28 ft. wide, and the manor house, chapel, and farm buildings form a very picturesque group amidst the surrounding trees.

Winchcombe.

A few miles further along this road is Winchcombe, an ancient town called in Anglo-Saxon times "Wincelcombe," which means "a corner of the valley," a very appropriate name, as it lies at the end of a beautiful valley, almost entirely encircled by the Cotswolds.

In the IXth century Winchcombe was the capital of Mercia, and a royal residence, but its importance was chiefly due to the fame of its Abbey. King Offa built a nunnery there in 787, and towards the end of the same century his son Cenulph founded a Benedictine Abbey on the same site for 300 monks, and dedicated it to the Blessed Virgin Mary. At his death he was succeeded by his young son Kenelm, aged seven, who was murdered by order of his sister. Tradition says that the fate of the young King was miraculously revealed in various ways. At any rate, when his body was discovered it was removed to Winchcombe, and the Abbey in consequence became popular as a place of pilgrimage, as the relics were credited with working miracles. A famous historian of the period, William of Malmesbury, says "that there was hardly any place in England more venerated." The Abbey was partially destroyed by the Danes, and it is believed to have passed into the hands of secular priests, but towards the end of the Xth century it was rebuilt and given back to the Benedictines. Up to the reign of King Canute the town had been a county in itself, but it was then united with Gloucester. The town was made a borough in the reign of Edward the Confessor, and the Doomsday Book records that the possessions of the Abbey were unusually large, no fewer than nineteen manors being attached to it. The abbey was destroyed by fire in 1151, and rebuilt again in 1239. That it was considered of great importance is confirmed by two facts—first, it was a mitred Abbey, and its abbot sat in the House of Lords, and secondly, Edward III. granted it permission to fortify its buildings, a rare privilege and one seldom granted.

On the dissolution of the monasteries the inhabitants, who possessed a parish church, did not trouble about the abbey, which gradually fell into decay and disappeared, and now all traces of it above ground are lost. In the XVth and XVIth centuries the prosperity of the town was evidently on the decline, for Edward IV., and later on Elizabeth, granted it charters for holding fairs in order to relieve the poverty of the inhabitants, but with the introduction of tobacco in the XVIth century its prosperity

Digitized by Google

revived for a short time, until crippled and restrained by the Acts of Charles I. and Cromwell.

The parish church was built by Abbot William in 1490. The inhabitants themselves contributed 200*l.*, a large sum in those days, and part of the cost was also defrayed by Ralph Boteler, of Sudeley. It is a fine example of Perpendicular work, and consists of a western tower, nave, aisles, and chancel. There is no chancel arch, but the divisions between the nave and the chancel is marked by screens, and in addition across the nave an upper screen or roof truss. There is a lofty clearstory which makes the church remarkably well lighted.

The pulpit was originally placed against the centre pier on the north side of the nave. There is a curious Jacobean font, dated 1634, and some elaborate sedilia on the south side of the chancel. In the XVIIIth century the altar stood centrally surrounded on four sides by rails, with seats for communicants on the south, east, and north sides, an arrangement which also existed at the neighbouring church of Deerhurst.

The church contains some good furniture and some fine silver plate. Externally the chief feature is the western tower, with a good weathercock, said to have been brought from St. Mary's, Redcliffe, Bristol. The church is also notable for the great grotesque gargoyles, some forty in number, on the parapets and tower.

There are several good XVIIth century houses in the town, the best being a picturesque gabled building known as the "Jacobean House," which stands opposite the church, the detail of the entrance front being particularly good. According to an inscription in Sudeley Church, this house was restored and enlarged by Mr. Wyatt in 1879, who had also restored the church some few years before.

Other interesting houses are the George Inn, which was the resort of the old pilgrims, and is inscribed with the initials, "R. K.," Robert Kidderminster, an abbot of the time of Henry VII., and another inn in the main street called "The Corner Cupboard," a long, low, rambling place on the street approached by a flight of stone steps, semicircular on plan. There is also a simple Georgian house with interesting detail.

Sudeley Castle.

About 1 mile from Winchcombe is Sudeley Castle; the property belonged in the olden times to King Ethelred, and was granted by him to his youngest daughter, the Countess of Goda. In those days its value must have been great, for it included a forest of oaks, covering an area of about 6 sq. miles.

The first Lord of Sudeley was Ralph, nephew of King Edward the Confessor, and in later times another owner of Sudeley had for a brother William de Tracey, one of the murderers of Beckett. In 1367 the manor passed to Joan de Sudeley, who married William Boteler. In the French wars during the reigns of Henry V. and VI. a certain Ralph Boteler took an active part and rebuilt the castle from booty gained in the war; he it was who helped to build the parish church in Winchcombe. His services to the house of Lancaster compelled him to surrender the castle when Edward IV. came to the throne, and it came into the possession of Richard, Duke of Gloucester, who, later on, exchanged it for Richmond Castle in Yorkshire. Thus Sudeley reverted to the Crown, and in 1509 the manor was granted to Robert Kidderminster. In the reign of Henry VIII. it is said that the castle was going to ruins. It was granted by Edward VI. to Lord Seymour, who made great preparations there for the reception of his bride, Katherine Parr, and round this lady centres the chief historical interest of the castle, for Katherine, the last wife of Henry VIII., surviving him, married a fourth husband in Thomas Lord Seymour, and a special suite of apartments was prepared for her at the castle. The Queen's chaplain was the celebrated Miles Coverdale, who revised the Bible at the direction of Henry VIII. Lady Jane Grey was also a frequent visitor to the castle at this time, as was also Princess Elizabeth, who spent some of her early years there, and afterwards as Queen was three times magnificently entertained by Giles, the third Lord Sudeley. Some time after Seymour's death this property passed to Sir John Brydges, who was given the castle and the title of Lord Chandos, as a reward for his services, by Queen Mary.

In the time of the Civil Wars Sudeley was looked upon as the strongest fortress in the neighbourhood, ranking with Berkley and Warwick, and as the royal forces occupied Oxford, it became of great importance, for it could command all the district between Camden and Cirencester, but it was captured by Colonel Massey in 1643, and given up to the Royalists later on at the fall of Cirencester. It again surrendered to Sir William Waller, who trained his guns on the castle from Dunn's Hill on the east, and the Parliamentary forces, although only 300 yds. off, are supposed to have only hit the castle once. Later on Lord Chandos seceded to the Parliament, and the Commonwealth ordered it to be rendered unfit for a military post, and it was accordingly demolished, after being garrisoned for five years. From this time nothing much is known of the castle, and at one time it became a public-house. In the early part of the XIXth century the estate was purchased by John and William Dent, of Worcester, and they set to work to make the castle fit for a country residence.

There are some interesting pieces of furniture in the house, among them the bed of Amy Robsart, from Cumnor Castle—it is peculiar as having a secret panel in the head containing a crucifix—and in another room there is the bedstead and tapestry from Marie Antoinette's bedroom, removed here when sold at the Revolution, and there is also some good Spanish leather in the dining-room, and generally the house is full of interest.

Sudeley must have been one of the finest baronial castles in this part of Gloucestershire. The original house was built in the reign of King Stephen, and rebuilt entirely in Henry VI.'s reign by the famous sea captain, Ralph, Lord Boteler of Sudeley. The ruins of the banqueting hall remain to show what a fine room it must have been, being on the first floor, and approached by a stone newel staircase. The windows at the ends and sides of the hall still remain, and the whole forms a splendid example of late Perpendicular work. The northern quadrangle has been restored by the Dent family, and at the same time the church, which dated from the middle of the XVth century, and adjoins the house on the east side, was also restored by Sir Gilbert Scott; it had been very much damaged by the Parliamentary forces in 1643, and had remained in a very neglected state. He also designed the tomb with the recumbent figure, which is placed over the remains of Katherine Parr, and contains fragments of the old tomb with the lead coffin inside.

Charlton Abbots.

Two miles south of Sudeley Castle is Charlton Abbots, a fine Cotswold building with some later additions, and grouped round the house are the old farm buildings, including a large barn, the whole forming a very picturesque group on the slight slope of a hill. The house has three stories, and is roofed in a single span running east and west; there are three gables on the south side, and two on the north, the projecting portion on this side being evidently an addition—on the eastern side of the building is a two-storied square bay with the centre light 6 in. wider than the others.

The most interesting feature internally is the staircase, 5 ft. 6 in. wide, carried round a square newel wall of the same dimensions, and off each landing doors lead to the different rooms, the various levels of the different floors making the external elevations particularly interesting. In one of the first floor rooms, which is panelled and has a segmental ceiling, there is a XVIIth century carved oak chimneypiece, and in all probability the house was originally far richer in panelling than it is at the present day, as it has now been converted into a farmhouse. Near the house is a small church, and it is said that there used to exist in the village a lazar house belonging to the Abbey of Winchcombe, but at the present day no trace of it exists.

Sevenhampton.

Leaving Charlton Abbots and going south another mile along the road is Sevenhampton, or, as it is often called locally, Sennington, which has a manor house with a church adjoining. The latter is a small cruciform building, with a central tower, transepts, and no aisles; the curious feature of the tower is that it is narrower than the nave, and is placed east of the crossing, so that the western piers stand free. These piers have been strengthened by flying buttresses placed diagonally inside the church from the piers of the tower to the corresponding angles of the nave and transepts. The tower, which is lighted by windows above the roofs of the transepts, has a turret staircase on the south-east angle. The porch, which is on the south side, has a good door with a four-centred arch and pierced tracery head.

The dimensions of the church are interesting. The nave is only 13 ft. 9 in. wide, and the total length of the church is 84 ft. The internal dimensions of the tower are 10 ft. by 9 ft. 6 in. The greater part of the church is XVth century work, but the chancel is earlier, and has single lancet windows on the north and south sides; probably the south poroh and the tower were built at the close of the XVth century as the result, so a memorial in the church informs us, of the bequest of a certain John Camber, to whose memory a brass has been placed in the chancel bearing the date 1497. The east window is a three-light Perpendicular one, and probably replaced an earlier one of the XIIIth century. Between the north transept and the chancel is a passage, which may also have served as a hagioscope, and the stone forming the roof of this passage is believed to have been an old altar stone, as there are traces of crosses on it. In the chancel also there is an old stone shelf which shows the height of the original altar; it is interesting, as it was not usual to raise the altar above the floor level in the early days of the church.

The manor house, which is to the north-west of the church, is a XVIIth century building, but it has been very much modernised, both internally and externally, and the only old part is the back or eastern side. One of the windows in a room on the attic floor has a stone sill, with a stoop for holy water, and, as in earlier days the house was used as a retreat by the nuns from Sudeley Castle, the room may have been used as a chapel. An interesting feature of the outbuildings is the small four-gabled dovecote over the stables.

Whittington.

Another short walk will bring you to Whittington, which is only about 5 miles east of Cheltenham on the Oxford-road. The village is particularly picturesque, for most of the cottages have very small bay windows. The manor house is a typical specimen of the local architecture, but unfortunately the west wing has been pulled down and replaced by modern additions; the north or main elevation has three-pointed gables with windows, which still retain their original glazing. Like other houses in the neighbourhood, the most interesting feature internally, is the open newel staircase, 5 ft. 9 in. wide, which goes from basement to attic in a series of flights of seven steps each; at the top of the first flight is a quaint and original dog-gate—the whole staircase shows a prodigal use of timber, for

Digitized by Google

the newels are 7½ in. square, and are continuous, but the turned posts on the top of each newel supporting the one above have been removed, the reason being, so it is said, that sacks of corn might be the more easily carried up and down; the solid strings are 14 in. by 7½ in., and the hand-rails 6 in. by 6½ in., with 3½ in. turned balusters. The eastern end of the ground floor originally formed one room. The house contains some good stone chimneypieces and several of the rooms are panelled. A corner lobby or tambour in one of the bedrooms has an angle pilaster with an Ionic capping treated in a noble but curious manner, for in order to solve the difficulty of the angle volute it is omitted altogether. Close to the house on the east side is the church, so close that at the north-west corner it is only 3 ft. off. It is a picturesque though diminutive building, with several traces of Norman work, notably the north doorway, which is now blocked up. It consists of a nave and chancel 12 ft. wide, with a south aisle, and a further aisle or chapel on the same side, as wide as the nave, and separated from it by an arcade. A timber bell turret, with a shingled roof, is placed over the junction of the nave and chancel roofs. In the south aisle are placed three recumbent monumental effigies in stone, which probably date from the early part of the XIVth century, and are believed to have been brought from another church in the neighbourhood when it was pulled down. The figures are about 7 ft. long, one is of a lady, and the other two represent knights, each with their legs crossed; in each case the armorial bearings are the same, and are believed to be those of the Crupe family, who resided at Whittington until the middle of the XIVth century. In the chancel wall is a fragment of a tomb bearing the same arms. Fragments of very early work and some tiles from the old chancel are carefully preserved in the church, which was restored in 1872. In the churchyard at the east end of the church is the shaft of an old cross. The church and house were originally surrounded by a moat, traces of which still exist, and on the north-east are some very picturesque farm buildings.

Upper Slaughter.

Leaving Whittington and turning to the left off the main road to Chipping Norton, about 10 miles off is Upper Slaughter, a small village containing a fine old manor house and a church. The former is a most interesting building, mainly dating from the XVIth century, but the basement is probably a couple of centuries earlier, and the two-storied porch is evidently a later addition. It was formerly the property of the church, but at the dissolution of the monasteries it passed to the Slaughter family, who rebuilt it and occupied it for about 300 years. They probably derived their name from the place, which in Doomsday Book is spelt Sclostre, and the original name of the village may possibly be connected with some bloody victory over the Britons. The house is situated on the edge of a hollow, there being a difference of about 9 ft. between the level of the entrance courtyard and the basement—the house is ⌊ shaped in plan, and the entrance front which faces west has four gables, the one above the porch being much smaller than the others, while the southern elevation, which has three gables, forms the arm of the ⌊. The eastern or back elevation is perhaps the most picturesque, as the grouping and the design of the chimneys is particularly good. Internally there do not seem to have been any dividing walls, and evidently the house has been considerably altered at various times. In one of the rooms there is some good panelling and a fine stone chimney-piece—the house which has recently been occupied as a farmhouse is now being restored.

The church which is close by is an interesting structure of transitional Norman work, and consists of a nave, western tower, and a chancel, with a stone bell turret surmounting the gable at the east end of the nave The tower, which is square on plan and somewhat squat, is embattled, and has angle pinnacles, but the upper part is of a later date than the nave. On the south-east of the church is a group of small cottages recently restored by Mr. Lutyens. About 2 miles east of Upper Slaughter is a new house designed by Mr. Guy Dawber, called Netherswell Manor; it was originally built about five years ago, but it has recently been added to and, in fact, completely remodelled. The stables, farm buildings, kennels and engine-house, and the lay out of the gardens and terraces have all been most carefully designed by the architect. The house is most beautifully situated, and commands some fine views; at present, of course, everything looks rather new, but when our Association visits the same district in another fifteen years or so I am sure that this house, over which architect and client have been so much in sympathy, will form one of the most interesting visits on their programme.

Chasleton House.

Some 9 miles further on the road between Chipping Norton and Moreton-in-the-Marsh is Chasleton House, perhaps the most interesting building in this district, for as it now appears it seems to belong to the XVIIth century, and everything about it suggests the Stuart period. As it was planned and designed in the reign of James I. so it has remained. You feel when you enter that you are in a house with a history; fortunately that history has been preserved. It was built in 1603 by Walter Jones, a wealthy wool merchant of Witney. The property and original house belonged to the Catesby family, and it was the celebrated Robert Catesby, one of the Gunpowder Plot conspirators, who sold the property to Walter Jones, in all probability to raise money to carry out the plot. One of the most exciting episodes connected with this house occurred in 1651, when Arthur Jones, a grandson of Walter, and a supporter of the Royalist cause, arrived home in the middle of the night after the battle of Worcester; he was dead-beat when his wife let him into the house, and it was not long before the Parliamentary forces were after him. He was hidden in haste by his wife in the secret chamber which led off their own bedroom, the opening to which was covered by tapestry and fortunately not discovered by the soldiers. They insisted, however, after searching everywhere, on being fed and spending the night in that particular room. Mrs. Jones drugged their wine, and when they were all fast asleep she let her husband out, and he escaped on one of his pursuers' horses.

The house is a fine specimen of Jacobean work, being built on more formal and symmetrical lines than the other houses in the district. It is square on plan, with a small central courtyard. The entrance front is on the south, with two projecting square bays with no side lights on either side. The one on the left forms a porch, and the other is a bay to the dais of the hall. The staircases are placed in two central towers on the east and west fronts, and on the north side is a small square projecting bay in the centre of the elevation, the whole forming a very symmetrical plan. Externally the house is very imposing, being higher than usual, and the two staircase towers accentuate this. The rooms are full of interesting furniture and good tapestry, and the screen in the hall is a very fine example of Jacobean work. The great parlour at the north-east corner of the building is panelled, and has a fine chimneypiece; there are also several good chimneypieces in some of the other rooms. The house contains some good plaster ceilings, that of the long gallery, which has lately been restored, being particularly fine. This gallery, which runs the whole length of the northern front, is 70 ft. long and 18 ft. 6 in. wide. About fifty years ago the house was reroofed with Westmoreland slates. From the top of the east staircase tower a very fine view can be obtained of the beautiful formal gardens below. There are several interesting relics preserved in the house, the most important being the Bible used by Charles I. on the scaffold, which he presented to Bishop Juxon, who attended him to the last, and who retired to Little Compton after the King's death. Another interesting document is the original deed for the sale of the property by Catesby to Walter Jones. It is curious to note one peculiar feature of this house which is also common to many others, and that is the use of other people's coats-of-arms in the overmantels of the chimneypieces. In most cases they are the arms of neighbouring families, and it has been suggested that it was a custom for the owners' friends to give him a carved chimney-piece containing their own coat-of-arms for a present. On the south-east side of the house is the church dedicated to St. Mary. Part of it dates from the beginning of the XIIth century, Bardolph de Cestron building a church there on the site of an old British burying-place. It is a picturesque building, with a southern tower, the whole forming, with the house, a very pretty group. The church was restored in 1878, when the west-end gallery and high pews were removed, and the old three-decked pulpit, which bears the date 1629, was cut down and reduced in height. The oldest part of the church is the north door; the original tower of the church was destroyed by lightning, and the present one dates from the end of the XVIIth century.

Broadway.

North-west of Chasleton is Moreton-in-the-Marsh, a very interesting town which time did not permit us to visit, but some 10 miles further off in the same direction is Broadway, which probably has the reputation of being one of the most picturesque villages in this part of the country.

The old church is dedicated to St. Eadburga, the granddaughter of King Alfred the Great, and dates from the middle of the XIIth century. It is cruciform in plan, with a plain central tower, the chancel and transepts being of a later date.

The nave and aisles were originally covered with lead, but this being stolen, the remainder was taken off and sold about fifty years ago, and the present slate roof substituted.

The font is peculiar, being very deep and circular, and entirely without ornament, and probably dates from the XIIth century.

In the north transept are stored the remains of a good Jacobean pulpit and sounding-board. There is also some good glass of the XVth century in the windows of the chancel and west end.

The church is some distance from the village, and consequently is very little used, as a modern church has been built which is more accessible. Adjoining the churchyard is Broadway Court, which has been recently added on to by Mr. Guy Dawber. The old house was formerly the residence of the Sheldon family, but the only part of it that is left is the old gateway, which has been utilised as a front entrance to the new house.

One of the most interesting houses in Broadway is Abbots Grange, which formerly belonged to Pershore Abbey, and was built in the XIVth century. This house has been so often sketched and measured that probably everyone is familiar with it. Considering that it has in turn been used as a village lock-up, a workhouse, and subdivided into cottages, it has really suffered very little, and its present owner has very carefully preserved the old features of the house, and even the new studio which Mr. A N. Prentice has lately added is built on the foundations of the old kitchens. Some of the windows show traces of the floors which had been inserted as they are filled in above the transoms. The hall, which has a good open timber roof, runs north and south, with the dais at the south end, and the kitchens on the north. There is no trace of any fire-place, and if there was one in the centre of the room, there is no sign of any exit for the smoke.

Digitized by Google

A curiously contrived staircase leads to the Abbot's solar, which has a squint which commands the kitchen door; this room also contains the remains of a fireplace, and has a good two-light window with reticulated tracery.

The Lygon Arms is another interesting house. This inn dates from the middle of the XVIth century, and the entrance door bears the date 1620, and the names John and Ursula Trevis. For over 300 years the inn was known as the old White Hart, the name being changed when it came into the Lygon family at the beginning of the XIXth century. Charles I. is supposed to have stayed there, and met Sheldon, one of his supporters, in the oak-panelled room, and Cromwell slept here before the battle of Worcester, probably occupying the room which now bears his name. This room has a fine enriched plaster ceiling and frieze.

Chipping Camden.

Passing through the villages of Willersley and Ashton-sub-edge, both of them containing some very nice domestic work, you come to Chipping Camden, which is supposed to have derived its name from it being the meeting-place of the Saxon Kings, who, at the end of the VIIth century, held a conference here about the war with the Britons.

It was the centre of the wool trade in the XIVth century, and carried on a considerable trade with Flanders. The town remained prosperous throughout the XVth century, and it was not until the Flemish settled in the West of England and started manufacturing cloth at the place of production that the town gradually declined. In the XVIIIth century it again enjoyed a period of prosperity, as it was the centre of the silk trade.

The church dedicated to St. James was built at the end of the XIVth century, chiefly at the cost of William Grevel, the wool stapler. It is in the Decorated style, with a fine embattled tower at the west end 120 ft. high, with massive buttresses and surmounted with twelve pinnacles. It has two side chapels, the one on the south side containing a fine monument to Sir Baptist Hicks, first Viscount Camden, who died in 1629. There are also monuments to the Noel family and some brasses, the earliest of which is to the memory of William Grevel, the supposed founder of the church, and his wife; he is described thereon as the "Flower of the Wool Merchants of England."

The nave consists of five bays, and has an east window above the chancel arch. There is a tradition that the tower was built by the same builder as that of Gloucester Cathedral, for there is an old rhyme in existence which runs:—

"A man by the name of Bower built Gloucester Cathedral and Camden Tower."

There is in the church a magnificent crimson cope, very richly embroidered, and dating from pre-Reformation times.

Near the church a fine mansion was erected by Sir Baptist Hicks at the end of the XVIIth century. It was destroyed by the General in command of the Royalist forces in the civil wars to prevent it from falling into the hands of Cromwell. Very little of the old manor house remains; it was built in the Italian style, and it was probably one of the most magnificent houses of the day, as it is stated that 30,000*l.* was spent on it.

Sir Baptist Hicks also built the row of picturesque almshouses near the church, and in 1627, the old market hall, which has a stone arcade and fine open timber roof, and forms the most noteworthy feature in the main street.

The old Wool Staplers' Hall is now used by Mr. C. R. Ashbee as a private residence. It has a curious oriel window, which, Mr. Ashbee explains, was probably the result of rebuilding in the XVIIth century, the original mediæval window, which had probably fallen. In the big room on the first floor there is a large open fireplace with the arms of the Calfe family in one of the spandrils. Its present owner has done much to preserve the original features of the house. Opposite this house is the one formerly occupied by William Grevel. It has two fine bay windows showing distinct traces of Flemish design.

Some few years ago the Guild of Handicraft moved from London to Chipping Camden, and the old silk mill became their principal workshop.

Churchdown.

Some 3 miles west of Cheltenham, on the way to Gloucester, is Churchdown, or Chosen, with its church standing right on the summit of a hill some 600 ft. to 700 ft. high. In all probability this hill served as a Roman signalling station. There is a quaint inscription on the tower recording that this "Belhows was Bvyldede in the yeere of ove Lorde God 1601." Tradition says that this church served two villages, the one on the north being called Chosen and the one on the south Hucclecote. The inhabitants of the latter village appear to have been very jealous of the former, and it is said that they objected one Sunday to the text, "Make Thy Chosen people joyful," and indignantly asked, "What have the Hucclecote people done?"

Gloucester.

About 4 miles further on to the south-west is Gloucester, a city which has often figured in history; it was an important military station under the Romans and surrendered to the Saxons towards the end of the VIth century. Owing to its position on a navigable river, it has always been of some importance.

In the time of William the Conqueror it was a favourite resort for his court, and several of the Norman Kings used to spend Christmas there. In 1087 the city was nearly destroyed during the contest between William II. and his brother Rupert. Later it was the scene of many conflicts between Henry III. and the Barons, owing to his having appointed a foreigner as Constable of the Castle. It suffered from fire three times in the XIIth century, and again in the middle of the XIIIth century. Parliaments were held there by Edward I., Richard II., and Henry IV. In 1483 Richard III. came to Gloucester after his coronation, and from here gave the orders for the murder of his two nephews.

The city opposed the Royalist cause in the Parliamentary wars, and for this reason at the Restoration its walls were destroyed. The siege of Gloucester lasted nearly a month in 1643, the Royalist Army being under the command of the King.

The walls of the city were 5 ft. to 9 ft. thick, surrounded by a deep moat; there were four gates, north, south, east, and west, about ¼ mile apart, and where the four roads met in the centre of the town there was a High Cross, which was demolished in 1750.

One of the most interesting buildings in the city is the New Inn, built at the end of the XVth century by John Twining, to accommodate the number of pilgrims who flocked to the tomb of Edward II. The New Inn was probably so called because it was built on the foundation of an older one; it was formerly one of the possessions of the Abbey of St. Peter, and after the dissolution of the monasteries it was granted to the Dean and Chapter, in whose possession it remained until recently, and formed part of their income. It is a picturesque, half-timber-framed building, built round two courtyards, and covers a good deal of ground, being, without the stables, 170 ft. long. The rooms all lead to open galleries running round the courtyards, approached by outside staircases to the different floors; the whole of the timber is chestnut, and parts of it are richly carved. There is a well-preserved angle-post at the corner of New Inn Lane, on which is some beautiful carving. There are two figures, both angels, holding scrolls bearing the words "Salve" to welcome the coming, and "Benedicti" to speed the parting guest. The canopies above the figures are particularly good.

In Westgate-street there is a house with an old front with good windows bearing traces of Flemish influence; a chimneypiece inside bears the date 1633, and is celebrated as the house which Colonel Massey made his headquarters in 1643, when the city was besieged by Charles I. Many of the houses contain good panelling and elaborately carved chimneypieces.

In the house opposite the Corn Exchange, in Southgate-street, which has a carved and ornamented front, there is a handsomely-carved chimneypiece, bearing the date 1650.

The house where Robert Raikes (the founder of the Sunday schools) used to live is an interesting half-timber building with three gables.

There are several good examples of gate piers in the city, those standing in front of the Foresters' Hall and another house in Westgate-street being most noticeable. There are numerous churches in Gloucester, but most of them are of a late date, having been erected on the sites of earlier buildings.

It is not possible to do more than give shortly a few particulars about the history of the cathedral.

At the end of the VIth century, on the site of the present cathedral, a monastery was first built which was destroyed by fire, as was also in 1058 the Benedictine one which superseded it.

The foundation-stone of the present cathedral was laid in 1089, Abbot Serlo being in charge of the work. Twice at the beginning of the XIIth century the fabric suffered by fire, and it is probable that in one of these fires the original timber roof of the nave was destroyed. This flat wooden roof was some 20 ft. higher than the present vaulting, which was finished about the middle of the XIIIth century. The columns of the nave show traces of fire, being much calcined. There were two more fires at the beginning of the XIVth century, and the south aisle of the nave was then built to save the south side from falling.

The murder of Edward II. in Berkley Castle did much to spread the fame of the Abbey Church, for Abbot Thoky, fearing no vengeance from the Queen, brought the body of the dead king to Gloucester. When Edward III. came to the throne this loyal churchman had his reward, for a fine tomb was erected by the new king, and streams of pilgrims began to flock to the city, and the coffers of the abbey were consequently enriched.

It is said that the funds at the disposal of the monastery at this time were sufficient to completely rebuild the abbey.

In the early part of the Vth century the reigning abbot destroyed the west front with its two towers, and is supposed to have added the south porch. In about the middle of the same century the central tower was demolished as far as the Norman piers, and the present beautiful tower was added, and the Lady Chapel was built towards the end of this same century. It was not, however, until the reign of Henry VIII. that the abbey was made a cathedral.

The nave piers are just over 30 ft. in height, being nearly twice the height of those at Norwich; they are about 21 ft. in circumference and 12 ft. 6 in. apart. The present flooring of the nave is some 10 in. higher than the original pavement.

Mr. Waller, who carried out the repairs of the cathedral in 1856, says that the whole of the nave was painted. It was at one time proposed by Kent to flute the columns, but happily the architect found out that they consisted of a stone casing filled in with rubble.

We were fortunate enough to be shown over the cathedral by the superintending architect, Mr. F. W. Waller, and the careful ½-in. scale plans which he had prepared of the various stages of the tower were of great interest. The tower at the roof level is 40 ft.

Digitized by Google

square and 225 ft. high; it is carried by four Norman piers, which are loaded to the extent of 12 to 13 tons per foot super., a load which would make a district surveyor's hair stand on end at the present day, for the total weight of the tower is about 4,700 tons. The pierced corner pinnacles, which weigh 25 tons each, are supported at the inner angles by slight squinch arches, and probably with the idea of reducing the weight of the topmost story, the walling of the panels is only 8 in. thick.

The cloisters were built during the latter half of the XIVth century, and are probably unsurpassed in beauty by any in this country. The monks' lavatory, which occupies four bays of the northern side of the quadrangle, is 47 ft. long, and is in a fine state of preservation, even the waste water tank being discovered about twenty years ago.

Perhaps the most interesting part of the cathedral is the choir, which at first sight appears to be entirely Perpendicular work, but in reality, this is only a thin casing to the original Norman work behind; this casing was put on during the XIVth century, and is very cleverly contrived. In order also to make room for the splendid east window, which is 72 ft. high and 38 ft. wide, and some 5 ft. wider than the choir, the two end Norman piers of the apse were removed, as was also the eastern apsidal chapel, when the Lady Chapel was built; these alterations are made perfectly clear by an examination of the crypt, where the foundations of the original Norman work remain.

On the north side of the choir is the tomb of Edward II.

It would take an entire evening to describe all the beauties of this splendid cathedral, which is probably so well known to all of us, and, therefore, these brief remarks must suffice to-night to deal with what is probably one of the most interesting ecclesiastical buildings in this country.

This concludes the list of places visited on the fortieth excursion of the Architectural Association, an excursion rendered all the more enjoyable by being blessed with the only real summer weather we have had this year.

I should like to take this opportunity of expressing my gratitude to Messrs. Hennings, Searles Wood, and Yates for the splendid photographs with which, by their kindness, I have been enabled to illustrate this paper, also to the various members of the party who have so kindly lent the drawings and sketches which adorn our walls this evening. I think you will all agree with me that our hardworking Honorary Secretaries, Mr. Talbot Brown and Mr. A. W. Hennings, arranged for us a most excellent programme, not the least charming feature being the modern work which it was our good fortune and privilege to see, and which will, I am sure, be the centre of interest on future excursions in the Cotswold district."

Mr. E. Guy Dawber, in proposing a vote of thanks, said he thought they might make it a rule that every year one of their members who took part in the excursion should prepare a paper for one of the fortnightly meetings. Such a paper could not fail to be of great interest to members, especially those who had not accompanied the excursion. One of the charms of our old English architecture, whether secular or ecclesiastical, was the interest, the romance, and the sentiment attaching to it through the lives of the people who lived and died in the buildings. Years ago, when he used to attend the excursions, the President for the time being used to give a brief précis of the history of the buildings visited, which gave an additional interest to what the members saw; but he believed that now they were all so anxious to sketch and photograph that nothing of that kind was done; and he thought that the President in future might prepare some notes of the places to be visited. One of the places seen on the last excursion was Campden, probably the most interesting town in the whole of England. It contained early and late work, all of extremely high character, both in design and workmanship. Campden was particularly interesting because of its association with London. Sir Baptist Hicks, silk-mercer of London, built a fine house at Campden, the almshouses, the vicarage house, and the market-hall; he re-roofed the chancel of the church, built a pulpit, and, in fact, did all the work of that particular period. At the same time he had an estate at Kensington, and in 1613 he built a large house there, known as Campden House. The house at Campden was burnt down, and that was also the fate of Campden House in London, which was burnt as recently as 1862. He thought that connexion between the quiet village of Campden and such a busy part of London was interesting. The keynote of the charm of the Cotswold work was undoubtedly its simplicity and proportion. It was doubtless to its isolated position amongst the hills, cut off from the main arteries of traffic, that much of this was due. In other parts of England where stone was found there was much more variety of treatment, but throughout all the work they had seen that night there was a strong family likeness, showing that the tradition lasted for at least 100 years with very slight change, except for a few details. It was interesting to watch the way in which the old builders took up the new Renaissance work when it first came into the country; they were very slow and tentative in what they did, as could be seen in the fireplaces, doorways, and tombstones; but when once they had mastered this classical work they were so artistic, and the tradition for good work and proportion was so strongly felt by them, that they were able to do the most charming buildings just as well as the earlier work. The Queen Anne and the work of the early Georgian period at Painswick, Chipping Norton, Evesham—all over the Cotswolds, in fact—was most beautiful. It was very simple, but it was imbued with the same feeling for good proportion and simplicity that the earlier work had.

Mr. H. D. Searles-Wood briefly seconded the vote of thanks.

Mr. J. Johnson, one of the members of the excursion to the same district fifteen years ago, said he hoped that what the members had seen that evening would induce them to take part in the annual event. The excursion afforded the greatest possible enjoyment.

Mr. G. Flint Clarkson, as one who took part in the 1895 excursion, supported the vote of thanks. Mention of the tower at Sevenhampton Church called to mind the tower at Minster Lovell between Witney and Burford—a church restored by the late Mr. J. L. Pearson. In both churches the tower stood clear of the walls, and there were flying arches. It would be interesting to compare plans of these parts of the two churches to the same scale. The monastery at Winchcombe must have been a vast one, if for 300 monks. St. Albans and Fountains had about forty each; St. Augustine's, Canterbury—a great house—never had more than sixty. Could 300 be correct? Were the stones for roofing got from the same quarries as the wall stones? Colley Weston, Stonesfield, and Horsham roofing stones were from special quarries. "Galetting" generally signified putting pieces of flint or of stone into soft mortar joints, not valleys in stone slating. Was there warrant for that use of the word? The secret chamber at Chastleton was shown on a plan of the house made by Mr. Cossins, the designer of Mason College, Birmingham, and published in the *Transactions* of his Society 1888-1889. Chastleton was a wonderful place, full of history and architectural character.

Mr. C. E. Bateman having expressed his pleasure at seeing the lantern views,

Mr. A. N. Prentice said he knew the district pretty well, having had the opportunity of restoring some of the old manor-houses. The same type of building was to be seen, curiously enough, in Northamptonshire, and he supposed that was to be accounted for by the seam of stone which ran through England from the Wash to the Severn; all through the district one found the same type of building, the same architecture. As to the stone, the local quarries had various layers of rock. On the top, very near the surface, there was a sort of thin rag, found all over Gloucestershire, and in a recent building he had done at Notgrove they discovered this thin rock, and it came in very usefully for paving in the gardens. In the old Cotswold buildings one rarely or never found a damp course, and it would be interesting to know when the damp course was first introduced.

The Chairman then put the vote of thanks to the meeting. Many of the younger members who had seen the slides and heard the paper must, he thought, wish to join in the next excursion. As to Mr. Dawber's suggestion that such a paper should be an annual event, the Council had already decided that this should be done. It was a good way of putting on record the work that was done.

The vote of thanks having been agreed to,

Mr. Clapham, in reply, said he was afraid he could not reply to Mr. Clarkson's question as to the number of monks at Winchcombe, but he had seen the statement in print several times. As to the stone slates he believed they were all obtained locally; they took a certain time to prepare and were split by the frost. He had spoken about one excursion in particular, but he should like to say a word about the excursions in general. Unless they had been on one or two excursions, they could not realise the extraordinary fascination they had for one. He could only compare this annual gathering in the summer to those gatherings we had in our homes at Christmas-time and which were so looked forward to by young people. The Association excursion differed only in this respect, *i.e.*, that the summer excursion was looked forward to by the elder members; they looked forward to it, because it was a week in the year when they could forget their office troubles and worries and when they had only one object in common, old and young, principal and pupil: the enjoyment of the beautiful architecture of the rural districts of our own country.

Mr. Searles-Wood expressed the hope that the paper, when printed in the Architectural Association *Journal*, would be accompanied by some of the admirable sketches they had seen that evening. He should be willing to share the expense.

The President thanked Mr. Searles-Wood and said they would be glad to accept his kind offer.

The meeting then terminated.

The next meeting will be held on November 5, when Mr. W. D. Scott-Moncrieff will read a paper on "Drainage and Sewage Disposal."

LONDON MASTER BUILDERS' ASSOCIATION.

A SPECIAL general meeting of the London Master Builders' Association was held on Thursday, October 21, for the purpose of making amendments in the rules of the Association.

Mr. F. G. Rice (President) occupied the chair and explained that, with a view to enlarge the sphere and usefulness of the Association, the Council had decided to obtain the necessary authority to alter that portion of Rule III. which relates to the subscription of Associate members. He said, in the course of his remarks, that it has long been felt that many merchants were desirous of being identified with and assisting the work of this Association, and the object of altering the rule was to give them an opportunity of showing their practical sympathy with its work.

Digitized by Google

The President then formally moved

(*a*) that Rule III. be altered to read:—

"Associate members shall pay an annual subscription of 2*l.* 2*s.*"

(*b*) Rule III. Section b. to add:—

"Other things being equal, preference in ordering goods shall be given to builders' merchants who are associate members."

This was seconded by Mr. F. Higgs, Chairman of the Organisation Committee, who gave an interesting account of the work of that Committee, explaining that they had devoted much care and thought in their endeavours to extend the Association, and he hoped that present and future members, as well as the trade generally, would keep constantly in mind the importance of loyal cohesion in their efforts to protect themselves from the various dangers to which the trade is subject. He felt sure that a considerable number of merchants would enrol themselves as Associate members, and fully explained the scheme of issuing a telephone-card containing the names of builders' merchants who will become Associate members for the use of the ordinary members of the Association.

A discussion followed, in which Messrs. J. Chessum, J. W. Lorden, R. J. Worsley, and others took part, and the resolutions were carried unanimously.

The President made an earnest appeal to all present to use their best endeavours to further the work of the Association and the proceedings terminated.

A Council meeting was held on October 21, when Mr. F. G. Rice (President) presided.

A hearty vote of thanks was given to Mr. Rice and the members of the Sub-Committee, Messrs. Brown, Higgs, and Wallis, for the successful reception of, and dinner to, the Belgian Master Builders who visited London in August last.

The Organisation Committee's Report was adopted and the references from the special general meeting respecting the alterations in the rules were received.

The Council also made such additions to the pamphlet, entitled "The Objects of the Association," as recent times and current events demanded, and much satisfaction was expressed to Mr. F. Higgs for his able and suitable amendments of, and additions to, the old pamphlet. Proofs were ordered to be printed and laid before the Council at their next meeting for further consideration and adoption.

The President reported the proceedings of the Conference held on the 13th inst., and submitted three resolutions passed on that occasion respecting tendering without quantities. The Conference was promoted by the Quantity Surveyors' Association, and was attended by representatives of the Institute of Builders, the National Federation, and the Master Builders' Association. The Council felt that the subject discussed was a most important one, and ordered that copies of the resolutions should be sent to each member of the Council, and that the matter be further considered at their next meeting.

The resolutions referred to were as follows:—

(1) That the Conference disapproves of the practice of asking for tenders in competition for works of a substantial value without quantities, prepared by a fully qualified Quantity Surveyor, being supplied, and is of opinion that such quantities should be supplied in all cases when competitive estimates are invited for works expected to cost 5*l.* and upwards.

(2) That the Conference recommends the Councils of the Institute of Builders, the London Master Builders' Association, and of the National Federation of Building Trades Employers to urge their members to refuse to tender in competition without quantities for works costing 5*l.* and upwards.

(3) That a copy of the first resolution be sent to the Royal Institute of British Architects, the Society of Architects, and the Surveyors' Institution.

Two cases involving interesting trade questions referred to the solicitor were reported upon and spoken to by him and the Council, and instructions given.

The request frequently made of requiring priced schedules to be submitted with tenders was discussed. The Council wishes to approach various bodies by deputation to discuss this question.

The amended National Agreement with the National Association of Master Builders was submitted, and the National Federation was asked that the correspondence showing that the amended agreement does not supersede the arrangements made in the working-rule agreement between the London Plasterers and the London Master Builders' Association should be printed and bound up with the intended issue of these new rules.

Various trade questions were discussed, and the Council adjourned after a very lengthy sitting.

THE INSTITUTE OF METALS.

AT the second autumn conference of the Institute of Metals, held recently under the presidency of Sir William White in the hall of the Municipal School of Technology, Manchester, several papers embodying the results of painstaking investigation were read and discussed. As mentioned by the President, this Institute is the first organisation in the world to deal scientifically with the non-ferrous metals, its need being amply proved by the rapid growth of the membership to more than 500 persons, including metallurgists, manufacturers, and users of such metals.

Mr. C. O. Bannister, A.R.S.M., and Mr. H. J. Tabor read a paper on "The Surface Appearance of Solders," giving the results of experiments conducted with the object of obtaining exact data as to the influence of small quantities of foreign substances on the surface appearance of solders, whose quality is often gauged more by externals than by analysis. Consequently it is important that when cast in the form of strips, the metal should have a white, bright surface, free from rough patches, spots, pits, or pimples. The experimental results stated by the authors confirm the view that tinman's solder containing 53 per cent. of lead, 46 per cent. of tin, and 2 per cent. of antimony is superior in appearance to an alloy consisting wholly of lead and tin in equal proportions. If the proportion of antimony is increased up to 3 per cent., spots appear on the surface. Zinc is most detrimental, giving rise to crystalline surfaces even when present in minute proportions.

Mr. H. W. Greenwood and Dr. E. J. Brislee discussed "The Technical Assay of Zinc," and reviewed briefly the more important processes employed, the subject being one of highly technical character, somewhat beyond the scope of work undertaken by the majority of our readers.

Mr. J. H. Andrew, M.Sc., and Mr. C. A. Edwards invited attention to "The Constitution and Properties of the Aluminium-Copper-Tin Alloys," pointing out that many of the industrial non-ferrous alloys contain more than two metals, that the mixtures arrived at by the method of trial and failure generally possess in a more or less marked degree the desired properties, but that in the present day the miscroscope and pyrometer enable the properties and correct heat-treatment of such alloys to be more accurately deduced. As very little knowledge exists concerning the constitution of alloys containing more than two elements, it cannot be said that the ternary alloys in use are the best possible mixtures. One result deduced from the investigations of the authors is the probability that an alloy containing about 6·5 per cent. of aluminium, 5·5 per cent. of tin, and 88 per cent. of copper, will have the same properties as a mixture containing 10 per cent. of tin and 90 per cent. of copper, and at the same time be less costly.

Mr. E. L. Rhead, F.I.C., read "Notes on Some Probable Causes of the Corrosion of Copper and Brass," embodying various significant observations, but not pointing to any practical means of obviating corrosive tendencies.

Professor C. A. Smith, B.Sc., taking as the subject of his paper, "The Elastic Breakdown of Non-Ferrous Metals," said that about three years ago he commenced to attack the problem of the cause of the elastic breakdown of materials used in engineering work. He found that the solution of the problem as regarded mild steel differed from that usually accepted by engineers, his conclusion being that elastic failure always took place under any system of loading by reason of the shearing stress. Having proved that to his satisfaction, he next wished to ascertain whether all other ductile materials followed the same law. From the paper read at the meeting it appears that no experimental evidence can be adduced in support of the opinion that the non-ferrous metals appear to behave similarly to mild steel in respect of elastic breakdown. A considerable portion of the paper is devoted to a description of the sphingometer, an ingenious instrument invented by the author for measuring extensions of length and torque strains. This device is simple and at the same time exceedingly delicate, being capable of indicating extensions as small as one quarter of a millionth part of an inch.

Professor T. Turner, M.Sc., and Mr. M. Thornton Murray, M.Sc., read a paper on "The Copper-Zinc Alloys—a Study of Volume Changes," referring to the investigations made in the University of Birmingham on the changes in volume which occur when metals pass from the fluid state to the temperature of the air. The authors publish the hitherto unrecorded fact that, with certain percentages of zinc and copper, the metal, when poured into the mould, does not immediately begin to contract as might be anticipated, but for a short time actually expands, thus accounting for the excellent impression of the mould and the sharp lines met with in certain brass castings. One alloy with about 15 per cent. of copper expands in a most remarkable manner, so much, indeed, that after final cooling and shrinkage the bar is as long as the pattern from which it was cast. It is worthy of note, however, that some alloys in the series do not expand at all when solidifying, one being brass with 60 per cent. of copper and well known as Muntz metal, and the other brass with 40 per cent. of copper—a brittle alloy harder than mild steel. The experiments described will probably have practical as well as theoretical value as an indication to the most suitable composition of alloys for specific purposes.

Mr. J. S. Glen Primrose, A.I.M.M., contributed "Notes on the Production of Pure Spelter," reviewing the important commercial position of zinc and existing methods of refining the metal. The principal item of this paper was the description of recent experiments on the direct smelting of Broken Hill "middlings," poorer in lead than the original ore, which have had to be put aside pending a satisfactory method of treatment. The remarkable results attained showed clear indication of a solution of the long-standing problem. The process is apparently perfectly suited to the commercial production of the highest grade spelter from this class of material. Quite 10 per cent. of the lead was recovered in the metallic state, and assayed 10 oz. of silver per ton. Besides its other merits; the process is said to possess the advantage of being extremely simple, and to be readily adaptable to any class of material, particularly if it is impure, while the extra cost of production amounts to only a few pence per ton of spelter.

From the foregoing brief notes we think our readers may gather that the Institute of Metals has fully justified the anticipations formed concerning its future usefulness to those professionally and commercially interested in the non-ferrous metals.

Digitized by Google

NATIONAL INSTITUTION OF APPRENTICESHIP.

THE following is the first list of contributions to the above object, sent in response to the appeal made in the letter of the Lord Mayor of London, which was published in our issue of October 9:—

Rothschild, N. M., & Sons, Messrs.	£150	0	0
Bourke, Schiff, & Co., Messrs.	52	10	0
Norton, R., Esq., F.R.G.S., F.R.S.	50	0	0
Hambro, C. J., & Son, Messrs.	50	0	0
Wedd, Jefferson, & Co., Messrs.	26	5	0
Bourke, The Hon. Harry	26	5	0
Schiff, Otto, Esq.	26	5	0
Seligman Brothers, Messrs.	25	0	0
Cambridge, W. F., Esq.	10	10	0
Stettauer, C., Esq.	10	0	0
Acheson, Right Hon. Viscount	5	5	0
Archbishop of Westminster	5	5	0
Murray, John, Esq., J.P.	5	5	0
Henrici, Professor Olaus, Ph.D., LL.D.	5	5	0
Jelf, The Hon. Sir Arthur R.	5	0	0
Sutton, Martin, Esq.	5	0	0
Anonymous, Hove	5	0	0
Jackson, Pixley, & Co., Messrs.	2	2	0
Ikle, J. Jacoby, Esq.	2	2	0
Pixley, F. W., Esq., J.P.	1	1	0
Essex Wynter, Dr. W.	1	1	0
Howell, H., & Co., Messrs.	1	1	0
Crompton, Mrs. Geo.	1	1	0
Jex-Blake, Mrs. Henrietta	1	0	0
Rigby, Mrs.	1	0	0

THE SOUTH KENSINGTON SKETCHING CLUB.

THE annual exhibition of the South Kensington Sketching Club is now being held under the auspices of the Royal College of Art. Landscapes in both oil and water-colour form the majority of the subjects. "A Pastoral Scene," by Mr. B. Wright, is cleverly executed in oils; the rendering of the trees is especially effective. With this painting Mr. Wright wins the club prize for "landscape in oils," but with such a wealth of material he has many keen rivals. Amongst the water-colour sketches the works of Mr. H. R. Wilkinson are prominent, and they show what good results can be obtained by simplicity of treatment. They are mostly Italian studies, and the strong blue sky of the South has been introduced with telling effect.

Mr. W. Clough exhibits a carefully drawn study in colour of a Renaissance building. Other interesting architectural sketches in colour are those of Kirkstall Abbey and Cloisters, by Mr. C. J. Coombs, who has made the best of the light and shade afforded by the cloisters. The section devoted to "Interiors" in colour has not brought forth such good work. Mr. W. O. Millers wins the prize with a nicely-drawn sketch of a vaulted chapel with a painted ceiling.

There is, in general, a scarcity of architectural subjects. In the room devoted to black and white, however, are some excellent pencil sketches by Mr. J. B. Godson, notably those of Fetter Lane and Dean's Yard. Amongst the measured drawings, that by Mr. B. Allen of the Lady Chapel, Ely Cathedral, may be mentioned; the carving is excellently drawn. The etchings maintain a high standard. Mr. E. M. Wilson shows one of an old bookshop in Clement's Inn, the composition of which is extremely good. Limits of space preclude a mere detailed notice of an exhibition full of interest.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

AT a special general meeting of this Institution, held on the 26th inst., at the Builders' Institute, Bedford-street, Strand, W.C., Mr. Leonard Horner, President, took the chair. There were also present:—Messrs. Bristow, Desch, Gammon, Hadland, Mackness, Newling, Oldham, Parker, Stansfeld, Ward, and others; and J. Austin, Secretary. An election of two eligible candidates to be placed on the pension list took place, with the result that Mrs. Cocks (915 votes) and Mrs. Robinson (733 votes) were elected.

The addition of the two new pensioners brings the number of recipients up to thirty-one, the widows receiving 24*l.* per annum, and aged clerks 30*l.* per annum.

At the close of the election the Committee voted 2*l.* each to the unsuccessful candidates as temporary relief on account of the expenses incurred by them in canvassing for votes.

A hearty vote of thanks to the Chairman was agreed to.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

AN additional feature to the work already carried on by the Bureau is that of sending portfolios containing designs of every type of fitting required externally or internally in a building.

The system inaugurated by the Bureau is to send on loan to architects classified portfolios of selected designs and covering every possible kind of fitting required and suitable for the special class of work in hand for which the architect is in need.

The portfolios will embrace designs for the following classes of buildings:—

For houses, costing from 500*l.* to 2,000*l.*
For large country and town houses, hotel work, etc.
For public buildings.
For churches.
For schools.
For hospitals.

Application by manufacturers to include sheets should be made to the Secretary, Technical Bureau Buildings, 24 and 25, Hart-street, Holborn, W.C.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loan.—It was agreed to lend Hammersmith Borough Council 10,000*l.* for a street improvement.

Lack of Employment.—The General Purposes Committee recommended that it be an instruction to the Committees of the Council who may furnish particulars of work which might be offered to the Central (Unemployed) Body for London as work suitable for the classes of the unemployed qualified for assistance under the Unemployed Workmen Act, 1905, (i.) that the Central Body shall be the employers and responsible for the conditions of the employment as between themselves and the persons employed; (ii.) that the works executed by the Central Body shall be subject to supervision by the proper officers of the Council; and (iii.) that the amount of co-operation in cost on the part of the Council shall be such as is certified by the Council's officers to be the fair value of such work.

After discussion the recommendation was agreed to.

Crosby Hall.—It was agreed that the exchange of a preliminary agreement between the Council and the University and the City Association of London, Ltd., with respect to the re-erection of the fabric of Crosby Hall in connexion with the scheme for the erection of buildings to form the University Hall of Residence, Chelsea, and the settlement of the hours during which the public shall have access to the hall, be confirmed.

Indication of Houses of Historical Interest.—It was agreed that a tablet be affixed to No. 9, Arlington-street, W., commemorative of the residence thereat of Charles James Fox.

Fleet-street Widening.—The Improvements Committee recommended that the estimate of expenditure on capital account of 200,000*l.*, submitted by the Finance Committee in respect of the widening of Fleet-street, at Nos. 13, 14, 15, 16, 21, 22, 47, 49, 50, 52, 54, 55, 55A, 57, 58, 60, 61, 62, 68, 70, 72, 73, 74, 75, 77, 78, 80, and 81, be approved as an estimate of costs.

The recommendation was agreed to.

Improvements.—The following recommendations were agreed to:—

That the estimate of expenditure on capital account of 7,800*l.*, submitted by the Finance Committee in respect of the widening of Falcon-road, be approved.

That the estimate of expenditure on capital account of 1,500*l.*, submitted by the Finance Committee in respect of the proposed widening by the Poplar Metropolitan Borough Council of Parnell-road, be approved.

School Works, etc.—Work is proceeding in connexion with the erection of twelve elementary schools and the enlargement of seven schools, providing a total additional accommodation of 8,857 places at an estimated cost of 206,760*l.* Seven schools are also being structurally improved by the provision of halls, etc., at a cost of 69,693*l.* The County Secondary School, Putney, is in course of erection, and will provide accommodation for 476 pupils, at an estimated cost of 25,852*l.* The extension of the Paddington Technical Institute is in progress, the estimated cost of the work being 7,052*l.* Divisional offices are being erected on the Tredegar-road site (Poplar), at an estimated cost of 4,371*l.* Five special schools accommodating 520 children are being built, and five manual training, two laundry, and two housewifery centres are in course of erection, the total estimated cost of the work being 31,970*l.*

In addition to the tenders reported from time to time in connexion with the sealing of contracts, tenders have been accepted for heating work at twenty-seven schools; cleaning or painting work at twenty-four elementary schools, eight special schools, one secondary school, and one technical institute; minor repairs and alterations at a temporary school and a secondary school.

It was agreed:—

That the special estimate of expenditure on maintenance account of 215*l.*, submitted by the Finance Committee in respect of the adaptation of an iron building on the Basnett-road site (Battersea) for the temporary accommodation of forty physically defective children, and of the supply of the necessary furniture, be approved.

That the special estimate of expenditure on maintenance account of 460*l.*, submitted by the Finance Committee in respect of the adaptation of a portion of the premises of the "Frogmore" school (Wandsworth) for the accommodation of sixty mentally defective children, and the supply of the necessary furniture, be approved.

That no observations be offered with regard to the proposal to provide a public elementary school for about 600 to 1,000 children at Stonebridge, Willesden; and that the Board of Education and the Willesden local education authority be so informed.

That the resolution relating to the sealing of a contract with Messrs. C. Kite & Co. for providing and fixing a new boiler at the Upper Hornsey-road school (Islington, N.) be rescinded.

That the seal of the Council be affixed to the contract (when ready) with Messrs. J. & F. May, amounting to 348*l.* 10*s.*, for providing and fixing a new boiler at the Upper Hornsey-road school (Islington, N.).

Sizes of Classes.—The Education Committee recommended as follows:—

(*a*) That the Council notes with satisfaction that the condition with regard to the staffing of schools, contained in article 10 (small print) of the code of regulations for public elementary schools, 1909, issued by the Board of Education, is fully satisfied in all the departments of public elementary schools maintained by the Council, and that in the great majority of cases the Council's scale of staffing is, and has been for long, far in advance of the requirement of the Board of Education, and further that the Council's arrangements for the staffing of schools satisfy the new requirement contained in article 12 (scale B) of the code.

(*b*) That the Council having considered the requirement as to the size of classes contained in article 14 of the code of regulations for public elementary schools, 1909, is of opinion that, in reducing the size of classes by writing down the accommodation of classrooms, by taking such steps as regards reclassification as are not inconsistent with educational requirements, by the partitioning of rooms, and by arranging that in new and completely remodelled schools the accommodation of classrooms shall not exceed forty for senior pupils and forty-eight for infants, it is substantially complying with the requirement referred to.

(*c*) That it be referred to the Education Committee to consider and report as to whether, in view of the provisions of article 14 of the code of regulations for public elementary schools, 1909, any additional accommodation will be necessary.

They also submitted the following observations:—

In connexion with the scheme for the calculation of effective accommodation approved by the Council on June 26, 1906, and November 12, 1907, the accommodation of 176 classrooms has been written down to the number calculated on the basis of 10 sq. ft. per child in senior departments, and 9 sq. ft. per child in infants' departments. These reductions have resulted in a loss of 1,211 places. The accommodation of two classrooms, however, has been increased by two places, so that the net result is a loss of 1,209 places.

It has further been decided that, for the Council's working purposes, the accommodation of 486 classrooms should be reduced to the number for which each room can be conveniently used, although this number is in each case less than the accommodation calculated on the basis referred to above. In these 486 rooms there will be a loss of 7,901 places

Digitized by Google

in the accommodation recognised for the Council's working purposes as compared with the accommodation recognised by the Board of Education. The accommodation of four rooms has been increased by twenty places, and slight variations in the accommodation of six schools have resulted in a loss of forty-two places, making a net loss of 7,923 places.

Conditions of Drains and Offices.—"In July, 1906, we carefully considered as to the condition of the drains and offices of the non-provided schools which were ascertained in the course of the survey to be in an unsatisfactory condition. In 205 cases we arrived at the conclusion that the drains and offices were in a condition which constituted an immediate danger to the health of the children in attendance, and the Council, on our recommendation, informed the managers that unless the sanitary arrangements passed satisfactorily the smoke and chemical tests, it would cease to maintain the schools as from certain dates. As regards 109 schools whose sanitary condition was not regarded as a source of immediate danger to the health of the children, we have been in communication with the managers with a view to the Council's requirements in regard thereto being complied with as soon as possible.

As a result, with the exception of fourteen cases where the alterations are still in progress, the whole of the non-provided schools in the administrative county are now in a sound sanitary condition."

Enlargement of Technical Institute, Hoxton.—It was agreed that the estimate of expenditure on capital account of 600*l.*, submitted by the Finance Committee in respect of preliminary expenses incidental to the preparation of working drawings, quantities, and estimates in connexion with the enlargement of the London County Council Shoreditch Technical Institute (Hoxton), be approved.

That additional accommodation for about 200 girls be provided in the day trade and domestic economy schools.

Additions to and Removals from the Selected List of Contractors.—The Education Committee reported as follows:—

We submit our recommendations dealing with the cases which have arisen since our report on May 12-19, 1909, concerning additions to and removals from the list of contractors selected to tender for works at Council schools. Copies of the standing orders relating to contracts, rates of wages, and hours of labour have been forwarded to each of the contractors whose name it is proposed to add to the list, and each firm has signified its willingness to conform to the conditions laid down therein. The usual inquiries have been made by the solicitor and the architect (Education) with satisfactory results. We recommend—

(*a*) That the names of the undermentioned firms be added to the selected list of contractors to be invited to tender for new schools, enlargements, structural alterations, repairs to buildings, painting and cleaning, subject to the condition specified in each case:—(i.) J. Allen & Sons, Ltd., Kilburn, for works exceeding 10,000*l.* in value, on probation; (ii.) R. A. Lowe & Co., Lower Camden, Chislehurst, for works not exceeding 10.000*l.* in value.

(*b*) That the name E. A. Roome & Co., 36, Basinghall-street, be added to the selected list of contractors to be invited to tender for enlargements, structural alterations, repairs to buildings, painting and cleaning, for works not exceeding 5.000*l.* in value.

(*c*) That the name of M. Calnan & Son, 242A, Commercial-road, be added to the selected list of contractors to be invited to tender for structural alterations, repairs to buildings, painting and cleaning, for works not exceeding 1,000*l.* in value.

(*d*) That the names of the undermentioned firms be added to the selected list of contractors to be invited to tender for repairs to buildings, painting and cleaning:—(i.) E. Crouch & Co., 7, Drapers'-gardens, Throgmorton-avenue; (ii.) Waddington & Son, 24, Brecknock-road, Holloway.

(*e*) That the names of the undermentioned firms be added to the selected list of contractors to be invited to tender for painting and cleaning, subject to the condition specified in each case:—(i.) A. H. Bird (trading as G. Nelson Watts), 31, Treadgold-street, Notting Hill, on probation; (ii.) J. Gower & Son, 27, Trinity-road, Upper Tooting, for small contracts.

(*f*) That the names of the undermentioned firms be added to the selected list of contractors to be invited to tender for heating apparatus subject, in (ii.) and (iii.), to the conditions specified:—(i.) W. J. Fryer & Co., Bravington-road, Paddington; (ii.) General Iron Foundry Company, Ltd., 43, Upper Thames-street, on probation; (iii.) R. J. Key, Clifton-street Works, Notting Hill, for small contracts; (iv.) Mackenzie & Moncur, Ltd., 8, Camden-road.

(*g*) That the names of the undermentioned firms be added to the selected list of contractors to be invited to tender for providing and erecting iron staircases, subject in (i.) and (ii.) to the conditions specified:—(i.) General Iron Foundry Company, Ltd., 43, Upper Thames-street, on probation; (ii.) R. J. Key, Clifton-street Works, Notting Hill, for small contracts; (iii.) J. Allan, sen., & Son, Ltd., Elmbank Foundry, 12, Possil-road, Glasgow.

(*h*) That the name of F. Smith & Co., 15, Abchurch-lane, be substituted for that of W. M. Glendinning, on the Council's selected list of contractors to be invited to tender for works to Council schools.

(*l*) That the names of Lathey Brothers, Nowroad, Battersea Park, and McCormick & Sons, Ltd., Northampton-street, Canonbury, as reconstituted, be retained on the selected list of contractors to be invited to tender for works to Council schools.

(*m*) That the limit up to which F. J. Gorham, Point-hill, Greenwich, is invited to tender for works to Council schools be increased to 5,000*l.*

(*n*) That, until they have carried out work to Council schools, the names of the undermentioned firms be retained, on probation, on the selected list of contractors:—(i.) E. Jackson, Rectory Works, White Horse-lane, Stepney; (ii.) Strong & Collings, Ltd., Medley Boiler Works, Bermondsey; (iii.) the Shepherd's Bush and West-end Window Cleaning Association, 50, Greenside-road, Shepherd's Bush.

Having transacted other business, the Council adjourned.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Street Widenings.—On the recommendation of the Improvements and Finance Committee, it was agreed that a formal adjudication be passed to acquire the ground needed to widen the public way in front of Nos. 36 and 37, Primrose-street; and that notices be served to acquire the ground needed to widen the public way of Bishopsgate-street Within, in front of No. 126, Bishopsgate-street Within, and No. 61, Cornhill.

Blackfriars Subways.—The Streets Committee reported that the subways for pedestrians from the north-west corner of Blackfriars Bridge to Queen Victoria-street, by the Hand-in-Hand Insurance Company's offices, with spurs going east and west to opposite the District Railway Station and De Keyser's Hotel respectively, are now in course of completion.

St. Paul's.—The Coal and Corn and Finance Committee, reporting upon the letter of the Dean of St. Paul's asking for the assistance of the Corporation in raising the amount required for the necessary preventive measures to secure the Cathedral against fire risks, recommended a grant of 200 guineas. This was agreed to.

Proposed Chillrooms.—The same Committee recommended that the Cattle Markets Committee be authorised to provide chillrooms at the Metropolitan Cattle Market, at an estimated cost of 8,500*l.* The Court approved.

Artesian Wells.—The Special Committee, reporting on a reference to inquire and report as to the powers of the Corporation in regard to the supply of water by means of artesian wells, or otherwise, stated that in the Committee's opinion it is not expedient to take any action in the direction indicated by the reference.

Street Lighting Experiments.—The Streets Committee, reporting on their recent inspection of various systems of public lighting on the Continent, recommended that the Committee be authorised to arrange for some further experimental lighting in the City thoroughfares. This was agreed to.

Proposed Additions to the Guildhall.—Mr. Hayward Pitman presented the report of the City Lands Committee on the question of the improvement of the accommodation at the Guildhall. The report suggested that the erection of an addition of three stories over the library corridor on the east side of the porch, together with the opening up and clearing of the crypt (to render it suitable for use as an adjunct to the museum), and also the utilisation of certain vaults under the Guildhall as Bridge House strongrooms for the Comptroller, at an estimated cost of 3,800*l.* In moving the adoption of the report, Mr. Pitman said the clearing of the crypt would effect a most useful improvement. The necessity for another strongroom and a three-story building over the library corridor were apparent, and the latter would solve the present problem of accommodation.—Mr. Deputy Wallace moved as an amendment that the report should be referred back to the Committee, to prepare a general report on the improvement of the Guildhall, and, further, that a premium should be offered to a selected number of architects to compete for the preparation of a scheme. Mr. Wallace said the time had arrived when the Court should set its face against such small jobs as the one proposed. The Guildhall was worth preserving, and even if the scheme suggested took a hundred years to carry out they ought to get the most eminent architects to do it.—Mr. Gunton, in seconding, gave a detailed criticism of the Committee's proposals. He said there had been more than enough patchings at the Guildhall.—Mr. Deputy Douglas Mathews also supported the amendment. By the Committee's scheme the light in the Great Hall would be blocked out by the kitchens it was proposed to place at the top of the new building.—Mr. Banister Fletcher expressed himself in favour of the Committee's report. The building, he thought they would agree, was not in the full sense of the term an historical one. There was no doubt that at one time some screen work had stretched across the Guildhall-yard. The front that Dance had put up could not be called beautiful, and when Sir Horace Jones pulled down one portion he no doubt intended pulling down the other side as well. In rebuilding this part of the façade they would only be placing there something that had existed before.—Mr. Gordon Stanham asked why they should perpetuate Dance's work, of which they could not be proud.—Mr. Lile, while supporting the suggestion that premiums should be offered to architects, doubted whether the work would be carried out during the lifetime of anyone present. It would cost hundreds of thousands of pounds before it was finished. After some further discussion, a division was taken, the amendment being rejected, fifty-eight voting for and seventy-one against, but as the necessary two-thirds majority had not been obtained the matter was referred to the Coal and Corn and Finance Committee for consideration and report.

Engineering Societies.

INSTITUTION OF CIVIL ENGINEERS.

The Council of the Institution of Civil Engineers have made the following awards for the year 1908-1909:—

Telford Gold Medals to Professor B. Hopkinson, M.A., B.Sc. (Cambridge), and Mr. G. R. G. Conway (Monterrey, Mexico); *Watt Gold Medals* to Messrs. D. A. Matheson (Glasgow) and W. C. Popplewell, M.Sc. (Stockport); *George Stephenson Gold Medals* to Messrs. E. H. Tabor (London) and A. J. Knowles, B.A. (Cairo); *The "Indian" Premium* and a *Telford Premium* to Mr. T. R. Nolan, B.E. (India); *Telford Premiums* to Messrs. S. J. Reed (Newcastle), C. T. Purdy (New York), L. A. B. Wade (Sydney), G. Hobbs (Accra, West Africa), W. Cleaver (Port Talbot), J. D. W. Ball (London), Professor A. H. Gibson, D.Sc. (Dundee), and R. D. Gwyther, M.Sc. (Buenos Aires); *The "James Forrest" Medal* and a *Miller Prize* to Mr. J. A. Wotherspoon (Glasgow); *The Miller Scholarship* to Mr. J. A. Orrell (Manchester); *The "James Prescott Joule" Medal* and *Miller Prizes* to Messrs. W. E. Fisher and E. B. Wood (London); *Miller Prizes* to Messrs. W. E. R. Gurney (London), E. G. L. Lovegrove (London), J. Purser (Birmingham), G. C. Minnitt (Manchester), S. F. Deacon (Manchester), C. H. Bradley, and A. E. Marshall (Birmingham).

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Metropolitan Asylums Board on Saturday, the following, amongst other matters, were dealt with:—

Eastern Hospital.—On the recommendation of the Finance Committee, it was agreed to apply to the Local Government Board for an order authorising the managers to incur an expenditure of 2,100*l.* on the provision of isolation-rooms at the Eastern Hospital.

Orchard Hospital.—A lengthy report was submitted by the General Purposes Committee recommending that the Local Government Board be asked to authorise the use of the Orchard Hospital building for unimprovable imbeciles; and that, subject to such approval, the Works Committee obtain tenders for the necessary fittings and alterations, etc. The cost of the fittings, etc., is estimated at about 3,445*l.*

Eastern and South-Eastern Ambulance Stations.—In answer to the request of the Local Government Board that further consideration should be given to the proposals for adapting these two ambulance stations for the accommodation of motor vehicles, the Engineer submitted alternative plans, which it was decided to forward to the Board.

Digitized by Google

OCTOBER 30, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery by Friday Morning's Post in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, OCTOBER 29.

Architectural Association Debating Society.—Mr. Halsey Ricardo to move "That External Colour Decoration is Necessary to the Completion of Town Architecture." 7.15 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "Sanitary Appliances." 7 p.m.

The Institution of Mechanical Engineers.—An extra meeting, when the discussion will be resumed on Professor W. E. Dalby's Report on "Heat Transmission." 8 p.m.

MONDAY, NOVEMBER 1.

The Royal Institute of British Architects.—President's opening address; presentation of the Royal Gold Medal to Dr. Arthur J. Evans, F.R.S; address by Dr. Evans on "Recent Discoveries in Crete." 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Colonel J. Lane Notter, M.A., on "Ventilation, Warming, and Lighting." 7 p.m.

Liverpool Architectural Society.—Mr. T. R. Spence on "The Elements of Design in Internal Decoration." Illustrated by lantern slides. 6 p.m.

TUESDAY, NOVEMBER 2.

Institution of Civil Engineers.—Address by Mr. James C. Inglis, the President, and presentation of medals and prizes awarded by the Council. Reception by the President in the Library after the meeting. 8 p.m.

Institute of Sanitary Engineers, Ltd. (Students' Lecture).—Mr. R. Horton on "Details of Plumbers' Work and Sanitary Appliances." 7 p.m.

Carpenters' Company University Lectures (University of London).—Mr Halsey Ricardo on "The Renaissance of Architecture in Italy"—III. 6 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. V.—"Persian Architecture: Palaces and Tombs." 4.30 p.m.

WEDNESDAY, NOVEMBER 3.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. Wright-Clarke on "Details of Plumbers' Work." 7 p.m.

Institute of Sanitary Engineers.—Mr. C. T. Evennette on "Oriental Sanitary Engineering." 8 p.m.

THURSDAY, NOVEMBER 4.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "House Drainage."

Carpenters' Company, Carpenters' Hall, London-wall (Lectures on Sanitary Building Construction).—Mr. J. Bartlett on "Methods of Setting-Out Work, etc."—I. 7.30 p.m.

Civil and Mechanical Engineers' Society (Caxton Hall, Westminster, S.W.).—Mr. A. S. E. Ackermann on "Technical Popular Fallacies." 8 p.m.

FRIDAY, NOVEMBER 5.

The Architectural Association.—Dr. W. D. Scott-Moncrieff on "Drainage and Sewage Disposal." 7.30 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Professor C. Gourlay, B.Sc., on "The Building a House." Illustrated. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Professor H. R. Kenwood, M.B., on "Water Composition, Pollution, and Purification." 7 p.m.

Society of Engineers.—Dr. David Sommerville, B.A., on "Some Observations on the Chemistry and Bacteriology of Sewage Purification." 7.30 p.m.

Fifty Years Ago.

FROM THE *Builder* OF OCTOBER 29, 1859.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE session will be opened in the new rooms of the Institute, Conduit-street, on Monday, the 7th of November, when Earl de Grey will preside, and Mr. Tite, M.P., will deliver an address on the present state and position of architecture at home and on the Continent.

The portrait of the president, to which we referred some time since, has been obtained; other portraits have been presented; and thus, with the pictures previously the property of the Institute, the walls of the new rooms are pleasantly covered.

The removal fund now amounts to about 240*l.*, and the council are in hopes that, through the liberality of those members and friends who have not yet subscribed, the necessity of trenching on the funded property of the Institute may be confined to the sum they had to pay as a premium on taking possession. We shall hope to see a large influx of new members, and a corresponding exhibition of the energy and vigour that belong to fresh comers. Conduit-street must be the rallying-point for the profession from all parts of the kingdom.

*** We are still echoing the last words of the above quotation. But the Institute has certainly progressed immensely since then, and it is to be hoped may still fulfil the wish of fifty years ago.—ED.

Illustrations.

PREMISES, Nos. 398 to 422, OXFORD-STREET.

THIS, as our readers will recognise, is the building in Oxford-street which has become famous as "Selfridge's." The illustration is a reproduction of a very large drawing which was exhibited this year at the Royal Academy, and gives a very effective view of the columned façade towards Oxford-street, as seen in rather sharp perspective.

We have before given a detailed description of the building, and reproduce this drawing mainly as a fine piece of architectural effect. The note in the corner as to the scale of the drawing, taken on the line of meeting of the two planes of the building, is of course incorrect in regard to this illustration, which is necessarily very much reduced from the size of the original drawing; but it could not be obliterated without disfiguring the plate.

Mr. R. Frank Atkinson is the architect of the building.

OFFICES, CAPEL HOUSE, NEW BROAD-STREET.

THE illustration represents the interior of offices in Capel House, which were handed over to the architect, Mr. C. F. A. Voysey, in a carcase state. He writes:—

"We put in new windows, doors, fireplaces, and floors, and furnished the offices; everything being designed by me, even the calendars, ink-stands, pen-tray, etc. The principle we worked on was to have everything durable, and minimise the cleaning as much as possible. Thus the upkeep is reduced to a minimum. All the woodwork and furniture is in oak, left in its natural colour. The counters are gilded, with quarter-plate glass on the top. All the windows are glazed with Chance's Norman slabs, and there are twenty-seven panels of stained glass representing the arms of towns in which the Society does business; so no blinds or curtains are needed. The chimney-pieces are unpolished carved black marble with arms emblazoned. All furniture fittings, such as handles and hinges, are in bronze.

The contractors were Messrs. F. Müntzer & Son."

The drawing was exhibited at the last Royal Academy.

MEMORIAL FOUNTAIN, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

THE fountain, which is placed in the great hall of the outpatients' department of the hospital, is executed in grand antique, petite veine marble, with the pilasters of the same marble grosse veine. The niches, brackets, and inlays, which are part carved and part flush, are of selected alabaster. The figures are also of alabaster, those in the tympanum representing the Virgin and the holy child in the centre, with the children of Zebidee on the right and S. John the Baptist on the left. Those below represent S. Luke, the good physician, and S. Nicholas, patron of children.

The whole was designed by Mr. Frank L. Pearson and executed under his supervision by Mr. Robert Davison, of Marylebone-road, the sculpture being by Mr. N. Hitch, of Vauxhall.

The drawing was exhibited at the last Royal Academy.

CLERGY HOUSE, ST. MARGARET OF SCOTLAND, ABERDEEN.

THIS building, of which the plan sufficiently explains the intention, is suitably designed in the plain and almost stern character of treatment which belongs to the architecture of Aberdeen generally. Plain as it is, it is a satisfactory and expressive bit of architecture, which does credit to its architect, Mr. G. G. Irvine, of Aberdeen.

ST. WILFRID'S CHURCH, KIRKBY-IN-ASHFIELD, NOTTS.

THE new building, which has arisen from the ashes of the former church burnt down on January 17, 1907, incorporates all the old work that was interesting from its antiquity and sound in its construction. Everything was destroyed by the fire except the spire and the outer portions of the external walls, also some of the tombstones on the floor.

The oldest work now existing is the XIIIth century wall and buttress at the north-east corner of the chancel, with the lower part of the eastern wall and the dwarf buttress under the east window. The XVth-century buttresses of the north aisle and the one at the north-east corner of the south aisle, with the lower portions of their adjoining walls, still remain, and the spire and external walls of the tower built about forty years ago, also the buttresses and lower parts of the south and east walls of the south aisle are left to tell their story.

The south wall of the chancel has now been rebuilt on its original XIIIth-century foundations, in line with the arcade between the nave and the south aisle. This wall was rebuilt about 4 ft. further north at some period at present uncertain, though for what reason is a mystery, as it made the chancel out of axial line with the nave, and the chancel arch had a very awkward appearance, with 4 ft. of plain wall on one side, next the nave, and none on the other.

The western bay of the south aisle was screened off to form an entrance vestibule in the restoration and enlargement of 1863-7, but this space has now been added to the seating accommodation, and the western wall has been rebuilt 3 ft. further west, in a line with that of the north aisle.

A porch has been built at the north-west corner of the church, where the porch formerly stood, previous to the above-mentioned alterations, facing the entrance-gates from the main road of the village.

New vestries for the clergy and choir have been added on the north side of the chancel behind the organ-chamber, which has been enlarged and opened towards the aisle, where the clergy vestry, about 7 ft. square, formerly stood. At the east and west ends of the vestries entrance lobbies have been formed, the latter giving access to the north aisle. The clergy vestry is also accessible from the chancel through a lobby adjoining the organ-

Digitized by Google

chamber. The heating-chamber is place under the choir vestry.

The space below the tower, formerly used as a choir vestry, has now been converted into a baptistery, the XIIIth-century arch between the nave and tower having been reproduced as it was before.

In accordance with the requirements of the Committee, in order to gratify local sentiment, the XIIth-century arcade on the north side of the nave has also been reproduced, with its circular columns and richly moulded semicircular arches, as regards the three western bays, the two eastern bays having been made to correspond (as nearly as possible, the end arch being narrower) in place of the wider arch and blank wall formerly there. This will explain the apparent incongruity of this arcade with the rest of the building, which has been designed in the XIVth century style, the arcade of that period on the south side having been reproduced with some modifications in the mouldings and carved capitals and bosses.

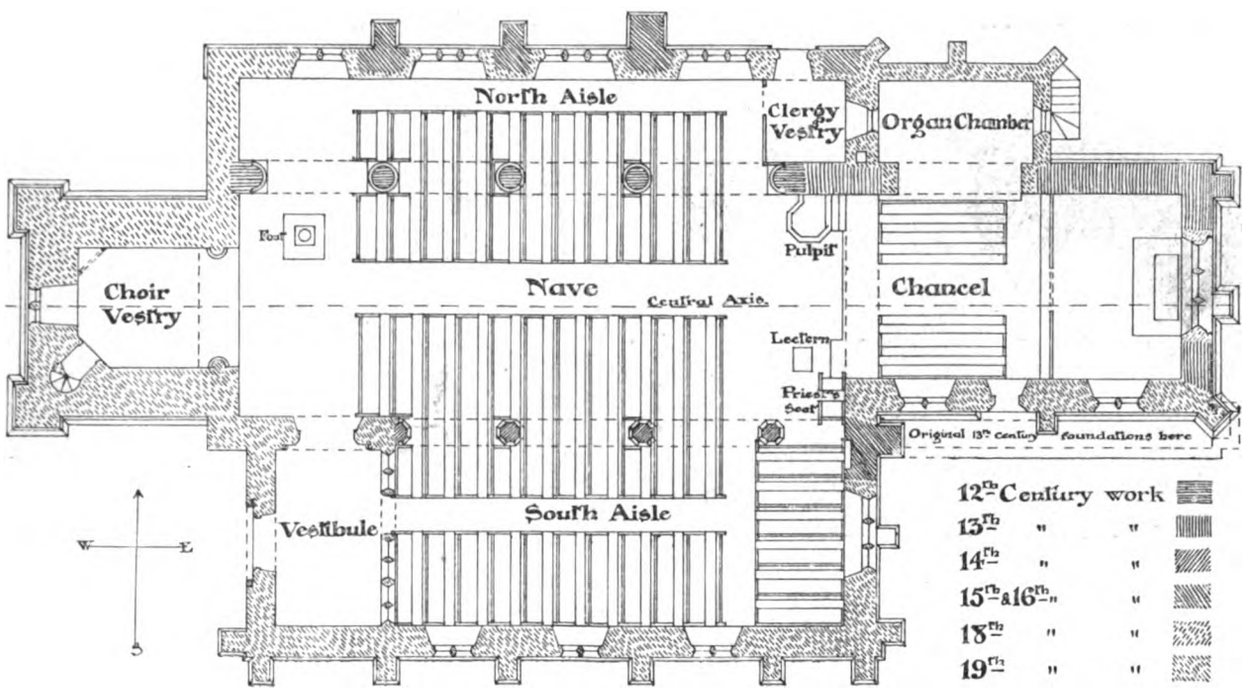
The nave and south aisle are the same height as formerly, but the north aisle has been raised to correspond with the rest of the building. The nave roof is continued over the chancel without any intervening arch (now unnecessary), but a carved oak screen has been substituted.

With the exception of the east window, inserted in 1768, all the former windows were modern, and consisted of double or triple lancet-headed lights without cusping or tracery, except those in the chancel. The new windows all have traceried and cusped heads of "Decorated" style and of considerable variety in design, the tracery of the five-light wide east window being of an unusual character, with a large central light in the form of a cross with cusped and pointed arms and carved bosses at the intersections.

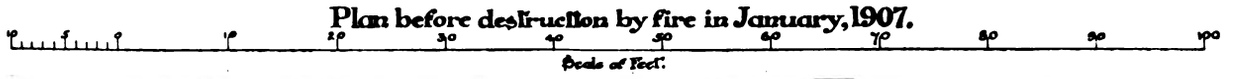
The walls are built of local and Bulwell stone with Weldon stone dressings, and lined internally throughout with Kirkby stone, the inside dressed stone being from the Ancaster quarries.

The roofs are covered with green Buttermere slates and the ridges, gutters, and rainwater-pipes are of lead, the pipe heads being of varied ornamental design.

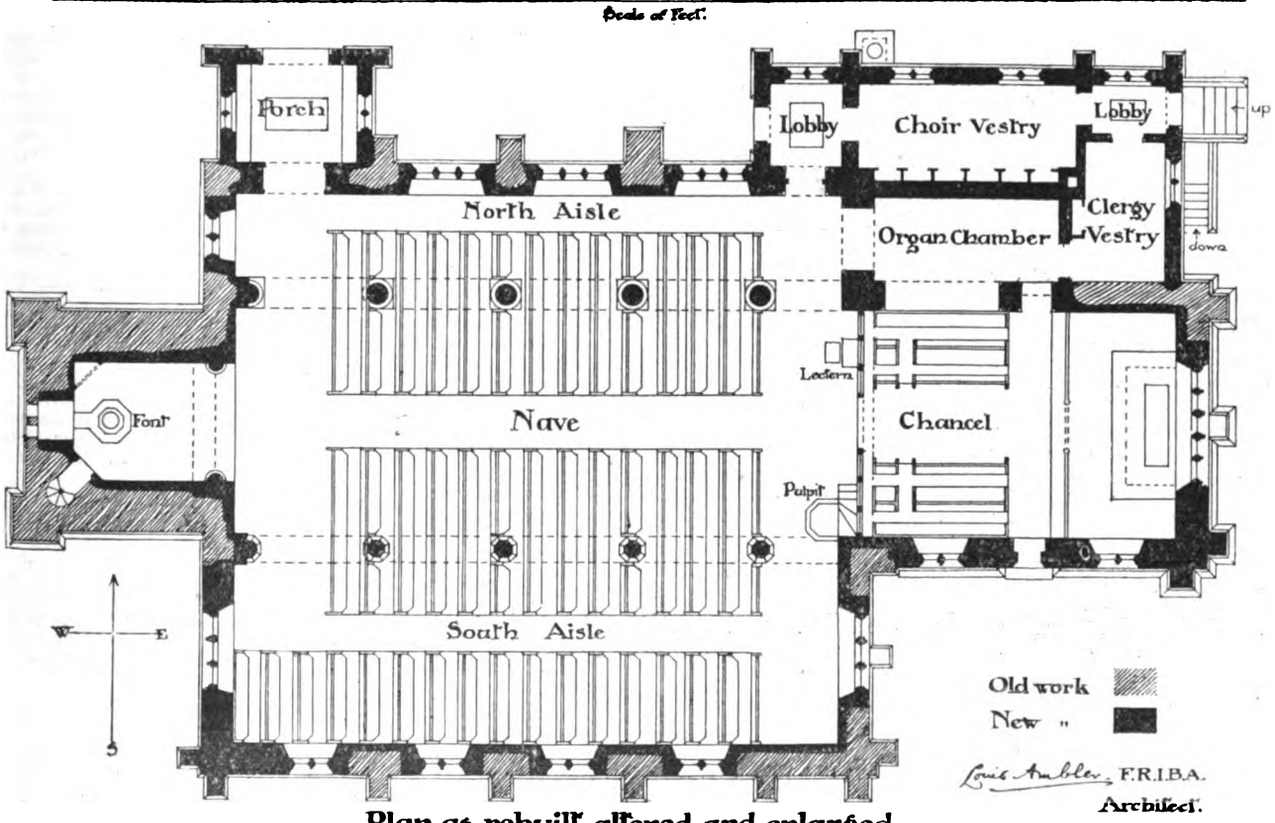
The floor of the church is laid with marble mosaic paving, that in the chancel being of a



Plan before destruction by fire in January, 1907.



Scale of Feet.

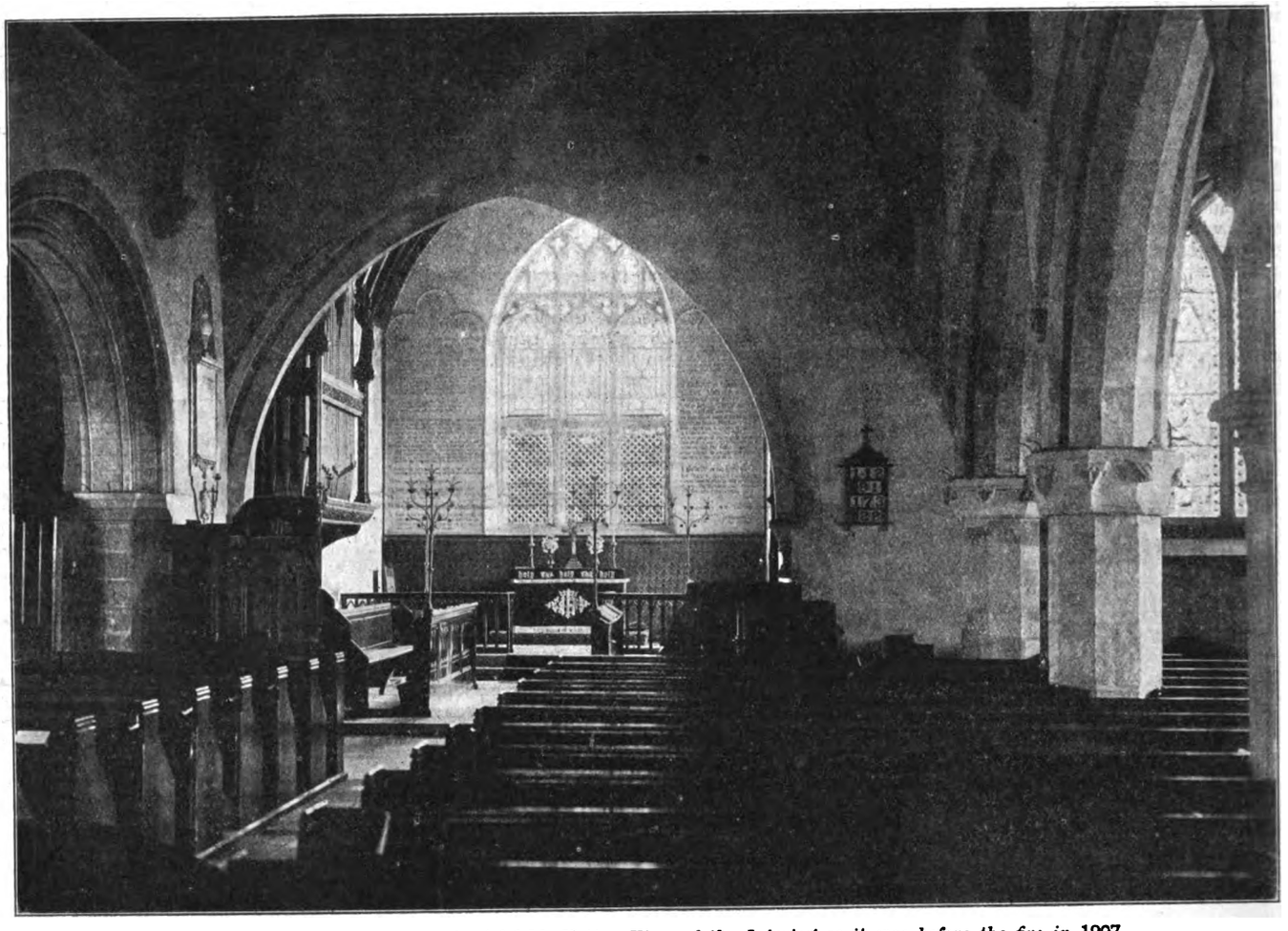


Plan as rebuilt, altered and enlarged.

Scale of Feet.

St. Wilfrid's Church, Kirkby-in-Ashfield, Notts.

Digitized by Google



St. Wilfrid's Church, Kirkby-in-Ashfield, Notts: View of the Interior as it was before the fire in 1907.

rich character, with the sacred monograms and emblems of the Passion for devices, while that in the bapistery has the emblem of the Trinity (three fish forming a circle). The old tombstones have been relaid near their former positions, and portions of four old stone coffin-lids with incised crosses and other implements (probably of the XIIIth century) have been laid in the floor of the porch, next the side walls. The floors under the seats and in the vestries are laid with wood blocks.

All the doors and fittings are of oak and, with the Ancaster stone font, are from the architect's designs, except the lectern. The chancel screen, pulpit, and choir-stalls are richly carved and traceried, and the bench-ends in the nave and aisles have a variety of carved finials. The whole of the stone and wood carving is symbolical and emblematical and has been designed by the architect and executed by Messrs. Bowman & Sons, of Stamford, the contractors for the building, who have carried out all the work except the following, viz.—the mosaic paving by Messrs. Secar & Co., the wood block flooring by Messrs. Nichols & Co., the heating apparatus by the Meadow Foundry Company, the gas fittings and door furniture by Messrs. Jones & Willis, the glazing by Mr. Walter Pearce, and the east window stained glass by Messrs. James Powell & Sons, the subject of this being Our Lord reigning in glory from the tree of life, with angels around and the prophets below, and the archangels Gabriel and Michael on either side, the lower portions of the centre light having the Mother and Child, and the four side lights containing the principal early British saints, including St. Wilfrid, the patron saint of the church, whose statue, of Bolsover Moor stone, stands in a niche over the porch door.

The total cost of the work, excluding the organ (to be built), was about 8,500*l.*, nearly half of which was paid by the fire insurance.

Mr. Louis Ambler is the architect, and we are indebted to him for the foregoing interesting account of the church.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hackney, North.—An oriel window and stone cornices at No. 1, The Broadway, Stamford-hill (Messrs. Edmondsons, Ltd.).—Consent.

Islington, North.—Retention of a wood and glass canopy over the entrance doorway to No. 66, Brecknock-road, Camden Town (Mr. W. Slatford).—Consent.

Lambeth.—That the application of Messrs. May & Perrin for an extension of the periods within which the erection of five houses on the site of Brockwell House, on the eastern side of Norwood-road, Herne Hill, with porches and one-story bay windows was required to be commenced and completed, be granted.—Consent.

Lewisham.—Buildings on the eastern side of Bromley-road, Lewisham, with portions of the buildings in advance of the general line of buildings on the eastern side of that street, and with flanks in advance of the lines of the buildings in Bellingham-road (Messrs. Norfolk & Prior for Mr. J. Watt).—Consent.

Marylebone, West.—Two three-story oriel windows in front of a building on the site of Nos. 5, 6, and 7, Northumberland-street, St. Marylebone (Mr. F. M. Elgood for Messrs. T. H. Kingerlee & Sons).—Consent.

Strand.—Retention of a projecting wooden hood at Kettner's Restaurant, Church-street, Soho (Messrs. W. Woodward & Sons).—Consent.

Strand.—The retention of an illuminated sign on the top of the shelter in front of the Alhambra Theatre, Leicester-square (Mr. W. M. Brutton for the Alhambra Company).—Refused.

Wandsworth.—Retention of wooden bay windows, porches, and oriel windows in front of two houses on the north-western side of Hilldown-road, Wandsworth (Mr. F. Gadsdon for Mr. G. Soden).—Consent.

Wandsworth.†—The retention of a hoarding abutting upon the eastern side of Woodwell-road, and North-side, Wandsworth Common, Wandsworth (Mr. C. Brawn).—Consent.

Woolwich.—Bay windows to four houses on the northern side of Glenlyon-road, Eltham (Mr. J. J. Bassett for Mr. A. Cameron Corbett).—Consent.

Woolwich.—Porches to Nos. 94, 96, 98, 100, 102, and 104, Dumbreck-road, Woolwich (Mr. J. J. Bassett).—Consent.

Width of Way.

Deptford.—A house on the south-eastern side of Rokeby-road, Brockley, with a forecourt, boundary wall, and fence at less than the prescribed distance from the centre of the roadway of the street (Mr. A. Roberts for Mr. H. Groves).—Consent.

Islington, East.—A building at the rear of No. 133, Balls Pond-road, Islington, at less than the prescribed distance from the centre of the roadway of Culford-mews (Mr. F. W. Lane).—Consent.

Islington, West.†—Buildings on the eastern side of York-road, Islington, at less than the prescribed distance from the centre of the roadway of the street (Mr. W. E. Sanders for Mr. C. N. Garner).—Consent.

Limehouse.—A building to be used as a coal store on the southern side of Elm-row, Shadwell, at less than the prescribed distance from the centre of the roadway of the street (Messrs. W. Cubitt & Co.).—Consent.

Whitechapel.—A one-story building at the rear of No. 79, Whitechapel-road, Whitechapel, at less than the prescribed distance from the centre of the roadway at the rear (Messrs. J. & R. Kemp & Co. for Mr. H. E. V. Crawford).—Consent.

Width of Way and Lines of Frontage.

Marylebone, East.—A cloakroom addition at the St. Edward's Convent schools, Little Union-place, Lisson-grove, at less than the prescribed distance from the centre of the roadway of Little Union-place (Mr. G. Sherrin).—Consent.

Marylebone, West.—An addition to a greenhouse at No. 8, Elm Tree-road, St. Marylebone (Mr. H. Rippon for Miss Maud Earl).—Consent.

St. George, Hanover-square.†—An iron and glass porch in front of No. 21, Grafton-street, St. George, Hanover-square (Messrs. Hubbard & Moore for Messrs. Perry & Co.).—Refused.

Lines of Frontage and Construction.

Dulwich.†—The retention of six advertisement boards on the forecourt of premises on the southern side of Peckham-road, Camberwell, abutting also upon the western side of Vestry-road (Messrs. May & Perrin for the Haycock-Cadle Printing Company).—Consent.

Holborn.—A gangway to connect No. 11, Robin Hood-yard with Nos. 1 to 8, Leather-

lane, Holborn (Mr. J. Sawyer for Messrs. A. W. Gamage, Ltd.).—Consent.

Formation of Streets.

Wandsworth.—That the Council do consent to the application of Messrs. Hill, Son, & Rickards for an extension of the time within which the roadways of proposed streets for carriage traffic on the Lynwood estate, Upper Tooting-road, Tooting, were required to be clearly defined and thrown open to the public as highways.—Consent.

Wandsworth.—That the Council do consent to the application of Messrs. Holloway Brothers for permission to retain barriers across Ellerton-road, Wandsworth.—Consent.

Separation and Alteration of Building.

Holborn.—The uniting of Nos. 57 and 58, Lincoln's Inn-fields, Holborn, with a building at the rear (Mr. A. O. Breeds for Messrs. Marks & Clerk).—Consent.

Space at Rear and Alteration of Building

St. George, Hanover-square.—A lantern light over the basement at the rear of No. 21, Grafton-street, St. George, Hanover-square (Messrs. Hubbard & Moore for Messrs. Perry & Co.).—Consent.

Building for the Supply of Electricity.

Southwark, West.—The uniting of No. 60, Bankside and Albion-buildings, Bankside, Southwark (the City of London Electric Lighting Company, Ltd.).—Consent.

Alteration of Buildings.

St. George, Hanover-square.—A lavatory addition at the third floor level at the rear of No. 31, Eaton-terrace, St. George, Hanover-square (Messrs. Offer & Offer).—Consent.

Whitechapel.—An addition, to be used as a "refrigerator-room," at the Brewery, Brick-lane, Spitalfields (Mr. J. H. Jeacock for Messrs. Truman, Hanbury, Buxton, & Co., Ltd.).—Consent.

Working-class Dwellings.

Hackney, Central.—Dwelling-houses to be inhabited by persons of the working class, and proposed to be erected, on a site abutting upon the southern side of Sylvester-road, Hackney, and the northern side of Pigwell-path (Messrs. Warwick & Hall for Messrs. Stapley & Smith, Ltd.).—Consent.

Cubical Extent.

Marylebone, East.—A deviation from the plans approved for the erection of an addition at Messrs. Bourne & Hollingsworth's premises, on the western side of Berners-street, St. Marylebone, so far as relates to (i.) the erection of a further addition, (ii.) the erection of an enclosed corridor at the fifth floor level over the roof of Nos. 68-70, Berners-street, (iii.) internal alterations of partitions and stairs on the first, second, third, and fourth floors of Nos. 68-70, Berners-street, and (iv.) an extension of the first floor of the block at the rear of Nos. 68-70, Berners-street (Mr. J. Slater).—Consent.

Uniting of Buildings.

Strand.—The uniting of No. 16, Charing-cross and No. 2, Craig's-court, Strand, by openings at the second floor level (Mr. H. Ling for Messrs. Cox & Co.).—Consent.

Westminster.—Uniting of Nos. 66 and 68, Rochester-row, Westminster, by an opening at the ground floor level (Mr. A. Keen for Mr. R. W. H. Kane).—Consent.

The recommendations marked † are contrary to the views of the local authorities concerned.

LONDON AND PROVINCIAL BUILDERS' INFORMATION CENTRE.

[COMMUNICATED.]

MENTION has previously been made in these columns of the establishment of an Information Centre for Builders. A prospectus describing the services of the Centre is being sent out to a number of builders throughout the country.

Those who do not receive the prospectus referred to should apply to the Secretary, 24 and 25, Hart-street, Holborn, W.C., and enclose a stamped addressed foolscap envelope.

"THE RENAISSANCE OF ARCHITECTURE IN ITALY."—In the report of Mr. Ricardo's lecture in the last issue the passage occurs—"the essential difference between the middle ages and modern times was the emergency of the individuality of the man from out the commercial life and commercial ideas." The passage puzzled us when we read it; it appears that "commercial" should have been "communal." It was a printer's, not a reporter's error. The author had a proof of the report, but seems to have overlooked this, and asks us now to correct it.

Architectural Societies.

LIVERPOOL ARCHITECTURAL SOCIETY.

The annual Report of the Liverpool Architectural Society for the official year 1908-1909 shows that the membership of the Society now consists of fifty-four Fellows and seventy-seven Associates—a total of 131. These numbers compare with fifty-six Fellows and sixty-nine Associates—a total of 125, at the close of last Session. There are three Hon. Fellows—an increase of one, nine Hon. Associates, and twenty-eight students—an increase of five. During the year the Council have been approached by the Manchester Society of Architects with a view to concerted action between the two Societies with respect to Architectural Competitions. Recognising the value of the work upon which the Manchester Society has been engaged and with a view to benefiting by the greater influence to be obtained by co-operation, the Council have appointed a Competitions Committee to take action in the cases of Competitions, more especially those belonging to the County of Lancaster, in which in the judgment of the Committee the general conditions are not satisfactory. The Committee have approached the promoters of the Competitions for the Nantwich Council School, the Blackpool Library, and the Southbank-in-Normanby Town Hall. The several representations made to the Blackpool Corporation resulted in the issue of entirely new conditions, but in the other two cases no modifications were obtainable. In their endeavour to counteract the abuses of architectural competitions resulting from the issue of unfair conditions, the Council hope to have the support of the members of the Society. It is desired that members should refuse to take part in competitions after the Council shall have intimated that in their judgment the conditions are not such as an architect should be expected to accept. In conjunction with the Manchester Society, a carefully worded and definite form of conditions of competition has been drafted. The object in view is to bring about the general adoption of a recognised form of conditions of an equitable character.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

The annual Report of the Association states that the session 1908-1909 will always be memorable in the history of the Association on account of the foundation of the Birmingham School of Architecture. Some two years ago the general dissatisfaction which was felt in the local educational facilities culminated in the appointment of a Committee to inquire into the whole position of architectural education in Birmingham. The members of this Committee have had before them at their numerous meetings reports from the Board of Architectural Education, and the various universities and schools where new architectural courses have been established; they have also had conferences with Birmingham University and the Municipal School of Art. The labours of the Committee have resulted this session in a Report to the Council, in which it was recommended to establish a Day school. A large number of prominent architects in the city having consented to accept pupils at a reduced premium, on condition that they passed through such a school, the School of Art Committee of the City Council have arranged to start an architectural day school at the School of Art in place of some of the evening-classes. Particulars of this new school having now been widely advertised, the Council trust that it will meet with the whole-hearted support of the profession in the Midlands. At the request of the Royal Institute of British Architects the Council have elected a Committee for the purpose of dealing with any questions that may arise with reference to town planning. The Royal Institute having drawn the attention of the Council to the question of the ownership of architects' drawings, the Council duly endorsed their recommendation to the effect that the drawings and sketches of an architect prepared for a building should be regarded as his property.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

The twenty-second annual Report of the work of the Society states that the total membership now stands as follows:—Two hon. members, thirty-nine Fellows, fifty-one Associates, twenty students, seventeen lay members—total 129, as compared with 123 last year. The proposed new by-laws dealing with streets and buildings, for many years a subject for comment in the annual Report, have not yet been finally settled. In September last these by-laws were submitted to the City Council for approval, but some of the proposals, and those long objected to by this Society, proved so unpalatable to the City Council that the whole matter was referred to a Special Committee for consideration and report. The Council again formulated a series of objections, based on those prepared on former occasions. These were sent to the Special Committee with a request that an opportunity might be afforded for a deputation to attend before the Committee in support of the objections raised. This request was granted, and one interview has taken place, when certain of the proposed by-laws were discussed, and it is hoped to deal with the remainder at subsequent interviews. The Council feels that after continual efforts extending now over eight or nine years, it will be possible at last to arrive at a more or less satisfactory solution of this much vexed question. Certainly if a little of that "sweet spirit of reasonableness" mentioned by their President in his address in 1907 had been exercised at an earlier date, the whole matter would have been settled several years ago. The Council has been asked to support the Sheffield Master Builders' Association in the inauguration of a general holiday week in connexion with the building trades. After consideration the Council decided to support the proposals of the Master Builders' Association.

GLASGOW INSTITUTE OF ARCHITECTS.

A quarterly general meeting of the Glasgow Institute of Architects was held on the 20th ult. in the Secretary's chambers, 115, St. Vincent-street, Mr. George Bell, President, in the chair. Reference was made to the death of Mr. John A. Campbell, who had been a member of the Institute since 1889, and it was reported that the Council had placed on the minutes an expression of regret at Mr. Campbell's death. It was intimated that Mr. Robert Hall, Coatbridge, had been elected an Associate member. The Secretary submitted a report on the matters which had been dealt with by the Council since last meeting. Seven pounds seven shillings had been granted to the Glasgow School of Architecture for prizes, and the proportion of these prizes, amounting to 2*l.* 2s., granted to the Technical College section of the School of Architecture, had been awarded to Mr. Joseph Wilson, 6, Jedburgh-gardens, North Kelvinside. Local examinations of the Royal Institute of British Architects were held on June 14, 15, and 16 last, and at the request of the Royal Institute of British Architects the Institute has agreed to undertake the conduct of a local preliminary examination on November 8 and 9 and a local intermediate examination on November 8, 9, and 10. On the representation of the Council the Govan School Board had exhibited the designs submitted in the competition issued by them for a new school, and the Hamilton (Burgh) School Board had also arranged to exhibit during this week in the Hamilton Public Library the plans submitted for their new academy. A

Digitized by Google

by-law had been framed which gave student members of the Institute representation on the Committee of the Associate members. It was intimated that the Council had under consideration the arrangements for an early exhibition of architectural work.

BOOKS RECEIVED.

FRENCH CATHEDRALS, MONASTERIES, AND ABBEYS. By Elizabeth Robins Pennell. Illustrated by Joseph Pennell. Pp. 424. (T. Fisher Unwin. 20s.)

THE GROWTH OF THE ENGLISH HOUSE. By J. Alfred Gotch, F.S.A., F.R.I.B.A. Pp. 312. (B. T. Batsford. 7s. 6d.)

STRESSES IN MASONRY. By Herbert Chatley, B.Sc. Pp. 142. (Chas. Griffin & Co. 3s. 6d.)

MEMORIALS OF OLD SUSSEX. Edited by Percy D. Mundy. Pp. 297. (Geo. Allen & Sons. 15s.)

THE MEDIÆVAL HOSPITALS OF ENGLAND. By Rotha Mary Clay. Pp. 337. (Methuen & Co. 7s. 6d.)

Competition News.

TRAINING COLLEGE, HULL.

The competitive designs for a teachers' training college at Hull were submitted to Mr. John W. Simpson, F.R.I.B.A., 3, Verulam-buildings, Gray's Inn, London. Three premiums of 150*l.*, 100*l.*, and 50*l.* were offered, and seventy-nine sets of designs were received. On Tuesday the assessor submitted his report to the Education Committee as follows:—"I have examined each of the seventy-nine designs submitted to me and have carefully analysed and compared their merits. The average of merit is extremely high, and the competition one of the most interesting that I have ever had to adjudicate upon. The Committee is to be congratulated upon the response made to the invitation. It should be borne in mind that each scheme comprises designs for seven different buildings, and that the question of the best disposition of those buildings upon the site is also of great importance. I award the first place to No. 53 for a design of rare excellence, which combines the advantages of a central connecting corridor with those of well-detached blocks of buildings. It is difficult to speak too highly of this scheme, whether from a practical or artistic standpoint. Such faults as it has are of minor character, and arise generally from excessive economy, and it may well become a model for this type of institution. On the principle that the design placed second should be that which would have been selected had the first design not been submitted, I award the second place to No. 54, for a well-thought and thoroughly good working scheme. I award the third place to No. 55 for an extremely fine design, both in plan and elevation. The detail of the suits of bedrooms and ablution-rooms is admirable. I note that several competitors, and curiously enough each of those above mentioned, consider the price per foot of cubic contents suggested in the 'conditions' to be unnecessarily high, having regard to the present state of the building trade in the north. Though I do not share that view, I trust that the author of the selected design may prove it to be correct. As certain designs were received after the appointed day, I may add, for the satisfaction of the Committee and of the authors of such designs, that I have without prejudice examined and marked them, and that my award would not have been affected by their consideration." The Sub-Committee upon opening the envelopes containing the names of the competitors found that the successful authors were as follows:—First, Messrs. Crouch, Butler, & Savage, Birmingham (No. 53); second, Mr. Wm. H. Thorp, Leeds (No. 54); third, Mr. G. H. B. Gould, Ipswich (No. 55). Their respective estimates were first, 33,350*l.*; second, 41,027*l.*; and third, 36,207*l.* The Sub-Committee decided to adopt the plans of Messrs. Crouch, Butler, & Savage, and tenders will forthwith be invited. The whole of the designs will be publicly exhibited at the Beverley-road Baths for several days.

TECHNICAL SCHOOL AT KENDAL.

At a meeting of the Kendal Technical Schools Committee last week the Mayor, who was in the chair, stated that the County Technical Instruction Committee considered it possible that the objections to Abbot Hall for the purposes of the proposed new technical school might be overcome. It was resolved that a committee, in conjunction with the principals of the school, be requested to consider the possibilities of adapting the land and buildings at Abbot Hall to the purposes of a technical school. A meeting of the Kendal Town Council will be held on November 26, when the matter will be further discussed.

TWO SCHOOLS AT KIMBERWORTH.

At the last meeting of the Buildings Sub-Committee of Rotherham Town Council, it was resolved, in connexion with designs for the erection of a higher standard school and an infants' school at Kimberworth, that an assessor be appointed, and that the question of his appointment be left in the hands of the Chairman of the Sub-Committee (Mr. Shaw), the Chairman of the Education Committee (Mr. Jenkins), the Vice-Chairman of the Education Committee (Alderman Gummer), and the Education Director. Premiums of 50*l.* and 20*l.* are to be offered for the designs placed first and second respectively. The Director submitted the draft instructions to architects, and these were approved.

Correspondence.

DRY ROT IN BUILDINGS.

SIR,—The legal case reported in the *Builder* of October 23 last, page 446, concerning the liability for damage by dry rot, and also a more important case which occurred some time ago, leads one to think that architects as a body should give this matter their most careful consideration, and endeavour to decide what steps should be taken to protect themselves from a liability for defects which no ordinary amount of supervision or knowledge can prevent.

I would therefore suggest that the members of the profession co-operate with the object of ascertaining what precautions a client may reasonably expect to be taken. A concensus of opinion upon this should do something to put a limit to the unreasonable liability which at present appears to rest upon the architect.

Would it be possible for you to invite communications with the object of determining the following:—

1. What is a proper and sufficient method of ventilating a basement floor when constructed of floor joists and wood flooring?
2. What is a proper and sufficient method of ventilating a ground floor where there is no basement and the materials are as above?
3. How should a floor which is above the ground floor be properly and sufficiently ventilated? (*a*) When it is not pugged; (*b*) when it is pugged.
4. The best form of pugging to be used so as to avoid as far as possible the liability of dry rot. In considering this question, slag wool, which is perhaps the best material to use, but somewhat costly, had better be excluded, being often inadmissible on the score of expense.
5. The steps an architect should take to effectively warn his client against the use of kamptulicon, linoleum, or such like material as a floor covering.

I am aware that it is said that trees may be infected with dry rot before they are cut up for building purposes, and also that ships in which timber is imported into this country may communicate the infection to the timber which they carry as cargo, and that it is impossible even for experts, by ordinary visual inspection, to detect timber so infected. If this is admitted, how can it be expected that an architect can be held liable for a defect which it is impossible for him to find out?

I trust this matter may have the careful consideration of your readers, with a result which will be of general benefit to the profession at large. MAX CLARKE.

*** The best course we can take is to print Mr. Max Clarke's letter, with which we entirely agree, and to say that we shall be glad to publish any further correspondence that may assist in furnishing useful answers to his questions and suggestions.—ED.

REINFORCED CONCRETE.

SIR,—Your correspondents appear to ignore the early but very successful examples of reinforced concrete floors used in Paris long before the dates quoted, viz., 1864-1869, etc.

A very full description will be found in the *Transactions* of the Royal Institute of British Architects. I cannot quote the year, but my impression is that it appeared during the sixties. Perhaps you can deal with it editorially; a summary of the paper might be a welcome contribution at the present time—of course, the cement was gypsum, and not Portland cement. J. HALL.

Bombay, October 7.

*** The interest attaching to reinforced plaster of Paris seems to be chiefly historic, but it may be the fact that some methods of applying reinforcement (as now adopted) may have been anticipated by the designers of the floors mentioned by our correspondent.—ED.

LONDON AND DISTRICT BOROUGH COUNCILS.

Acton.—Mr. D. G. Ebbetts, who has occupied the position of Surveyor to the Council for over twenty years, has resigned owing to failing health.

Hackney.—The footway of a portion of Mortimer-road is to be flagged, at an estimated cost of 125*l.* The Borough Engineer and Surveyor is to prepare an estimate of the probable cost of an open-air swimming-bath (90 ft. by 200 ft.) at the rear of the Council's disinfecting-station, Millfields-road, Clapton. The following plans have been passed:—Mr. P. Roche, forty-four houses, Castlewood and Moundfield roads; Mr. C. R. Price, factory and warehouse, Culford-mews.

Hampstead.—The Borough Surveyor has been instructed to carry out paving works in High-road, Kilburn, at a cost of 250*l.*, and (provided certain forecourts are put in repair) to substitute York stone for tar-paving, at an estimated cost of 126*l.*

Kensington.—537*l.* is to be spent in improving the macadam roadway of Drayton-gardens. The work is to be carried out by the Road Paving and Cement Company, Ltd., at the contract price of 2s. 6d. per yard, which is to include maintenance for three years. Barlby-road is to be made up. The Works Committee have decided in favour of the Council contributing up to 5,505*l.*, quarter of the cost of the formation of a new road, from Wood-lane to Latimer-road. The London County Council asked the authority for one-half the cost.

Lambeth.—A plan has been approved by the Borough Council for the construction of bridges over York-street and Adington-street, and the covering of Bell-court in connexion with the Waterloo Railway Station enlargement.

Lewisham.—The Borough Surveyor reports that there has been general complaint as to smells in the neighbourhood of Catford. This is attributed to the insufficient ventilation of the London County Council's new sewer. The following plans have been passed:—Messrs. Norfolk & Prior, buildings, Bromley-road, and seven houses, Fermor-road; Mr. Frank E. Wright, six houses, George-lane; Messrs. Edmonsons, Ltd., eight houses, Dukesthorpe-road; Mr. J. Nicholls, fourteen houses, Manwood-road.

Walthamstow.—Mr. Dunford is to prepare detailed drawings and specification and obtain tenders for the erection of a fire-station, with a view to applying to the Local Government Board for sanction to borrow the necessary money. A block plan has been passed for Messrs. Hoare & Wheeler, architects, 11a, Orchard-street, W.C., for a church at Higham Hill and St. Andrew's roads. Plans have been passed for Mr. H. Prosser for a school at Higham Hill-road.

Wandsworth.—Lacy-road, Putney, is to be widened, at an estimated cost of 145*l.* Messrs. J. Mowlem & Co., Ltd., are to pave part of Baldry-gardens, Streatham, the contract price being 439*l.*, as against the Borough Engineer's estimate of 471*l.* Plans have been passed as follows:—Messrs. W. Mason & Son, motor garage, Wood Lodge, 12, Valley-road, Streatham; Messrs. Simmons Brothers, alterations to Foresters' Arms public-house, Point Pleasant, Southfield; Mr. J. Harber, five houses, Fernside-road, Balham; Mr. A. Steer, four houses, Larpent-avenue, Putney; Mr. F. Eaton, two shops, Upper Tooting-road, Balham; Messrs. F. H. Buchan & Co., two houses, Pentland-street, Springfield.

West Ham.—The Education Committee has instructed their architect to prepare plans for providing two temporary buildings in the playground of the Frederick-road school, and the adjoining school. Plans by the Borough Engineer for the erection of firemen's quarters, at an approximate cost of 4,300*l.*, on land adjoining the Town Hall, have been approved. The directors of the London and Provincial Bank have written intimating that they are about to have plans prepared for the rebuilding of their banking premises at the corner of Angel-lane and Broadway. Plans have been passed for Mr. G. Bush to build four houses in Clova-road, Forest Gate.

Westminster.—The Works Committee have considered an application by Mr. G. Sherrin for consent to the rebuilding of the Victoria Station of the Metropolitan District Railway Company. The plans show that in addition to

Digitized by Google

straightening the building line in Terminus-place it is intended to construct an arcade between the present entrances in Victoria-street and Terminus-place, and in so doing to build over the recessed portion of the footway in front of the present Victoria-street entrance. The portion of the footway in question is stated on the plan to be the property of the Railway Company, but the public have had access to it for many years. The Improvements Committee protest against the proposal to cover this portion of the footway with buildings, and the Works Committee are in agreement with the protest, and are to inform the London County Council accordingly. The Properties Committee have decided in favour of the acceptance of an offer from Messrs. Hammersley, Kennedy, & Co., 88-90, Chancery-lane (acting for a company), to give 1,500*l.* a year on an eighty years' lease for the St. George's (Hanover-square) Hall, Mount-street. The present structure is to be pulled down, and a private residential hotel with shops under are to be erected on the site. A plan, lodged by Messrs. Drivers, Jonas, & Co. for a new street from Princes-street to Tothill-street, has been approved by the Works Committee.

Willesden.—The Works Committee have accepted (subject to the usual sanctions) the tender of Messrs. William Underwood & Brothers, at 49,547*l.*, for the construction and maintenance for twelve months of 14,037 ft. lineal, or thereabouts, of 6-ft. by 4-ft. brick egg-shaped sewer in tunnel in connexion with the new Brent District sewerage scheme. The tender of Messrs. Sabey & Co., Ltd., of St. Peter-street, Islington, has been accepted at 1,797*l.* for carrying out extensions at the Harlesden Public Library.

Woolwich.—Plans have been passed for Mr. J. J. Bassett, 121, Earlshall-road, Eltham, for six houses, Dumbreck-road, and four houses, Glenlyon-road, Eltham.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERFAN.—Twenty-four houses; Secretary, Pleasant View Building Club.

Abersychan.—Cookery centre; Mr. J. Bain, architect, Shire Hall, Durham.

Barking.—Proposed elementary school; architect, care of C. F. Dawson, Surveyor, Barking Town Urban District Council. The Town Council has passed the following plans:—Eighteen houses, Sparsholt-road, Mr. A. Blake; three houses, Sparsholt-road, Mr. J. R. Goodey; two houses, Faircross-avenue, Mr. A. Burch; fourteen houses, St. Awdry's-road, Mr. G. West.

Beccles.—Fifteen cottages, Ravensmeer; Messrs. Hindes & Co., Station-road, Beccles.

Blairgowne. — Extensions to Golf Club pavilion; Secretary to the Club.

Bradford.—Alterations to Turkish and medicated baths (1,370*l.*); Messrs. Toothill & Balmforth, builders. Conversion of Victoria Hall, Wyke, into bath (2,200*l.*); Mr. J. H. Cox, Surveyor, Bradford City Council.

Bridport.—Stables (600*l.*); Borough Surveyor, Council Offices.

Caergeiliog.—Mission church; Rev. J. Rees.

Cann.—Additions to St. Rumbold's Church; Mr. C. E. Ponting, architect, Malborough.

Carrington.—Church (10,000*l.*); the Vicar.

Castlerea.—Extensions to workhouse; the Guardians.

Chesham.—Proposed boot factory, for Mr. J. Barnes.

Chippenham. — Rink (1,000*l.*); Secretary, Chippenham Rink Company.

Croydon.—The Rural District Council has passed the following plans:—Twelve cottages, Western-road, Mitcham, Messrs. H. J. Taylor & Sons; rebuilding, Broadway House, Mitcham, Mr. T. H. Robinson; Congregational Church hall, Trustees, London Congregational Union.

Darlington.—Block of offices; Messrs. Hoskins & Brown, architects, Darlington. Sunday-school, Grange-road; the Baptist Trustees, Darlington.

Dawdon Colliery.—Twenty-four houses; the Londonderry Collieries, Ltd.

Dennington.—Rink; Mr. J. England, Kiverton Park.

Dennistoun.—Rink (4,000*l.*); Mr. G. Boswell, architect, 53, Bothwell-street, Glasgow.

Dundee.—Additions to Poorhouse (3,000*l.*); Mr. T. Cappon, architect, 32, Bank-street, Dundee.

Durham.—School, Eldon-lane (2,500*l.*); Mr. F. E. Coates, architect, Shire Hall, Durham.

Eastbourne.—The Town Council has passed the following plans:—Additions to "Chelmarch," Saffrons-road, Mr. W. Hay Murray; alterations at "The British Queen," Seaside, Mr. Henry Ward; addition to "Lynchmere," Carew-road, Mr. F. G. Cooke.

East Riding (Yorks).—Extension of school at Atwick, alterations and additions to school at Burton Pidsea, school at Sutton, proposed new school at Wilberfoss, school at Barlby, school and teachers' houses at Stamford Bridge, alterations and additions to school at Withernwich; Building Surveyor, Education Committee, County Hall, Beverley.

Eccles.—Skating-rink, Church-street, for the Eccles Roller Skating Rink Company. The Town Council has passed the following plans:—Nine houses, Barton-lane, Messrs. J. Chapman & Sons; four houses, Crawford-street, Monton, Mr. H. Lombers; six houses, Chapman-street, Mr. Eli. Collier; four houses, Cecil-street, Mr. W. Hanson; seven houses, Chapman-street, Messrs. Hardman & Jones.

Epsom.—Hall over billiard-room of the Conservative Club (900*l.*); the Secretary.

Glasgow.—Flour mills (3,000*l.*); Mr. H. D. Morton, architect, 130, Bath-street, Glasgow.

Hanley Moor.—Sanatorium; Clerk to the Huddersfield Guardians.

Hanwell.—Isolation hospital, also refuse destructor; Mr. S. W. Barnes, Surveyor, Hanwell Urban District Council.

Hereford.—Rink; Messrs. Wilkes & Son, builders, Whitecross-street, Hereford.

Hinckley.—Children's Home; the Guardians.

Horton.—Extensions to workhouse; Mr. W. Hall, builder, Derwent Works, Gateshead.

Hounslow.—New hospital (5,000*l.*); Mr. G. E. Franck, architect, 11, Pancras-lane, E.C.

Inverurie.—School (3,000*l.*); Mr. G. Grey, architect, Inverurie.

Irthlingborough.—Additions to factory, for Messrs. Bayes Brothers, Irthlingborough. Additions to factory, for Messrs. Hobbs & Co., Irthlingborough.

Liverpool.—Business premises (1,500*l.*); Mr. H. Goldsmith, architect, Dale-street, Liverpool.

Luton.—Extension of rink, Park-street; Messrs. Thompson & Son, Luton.

Mexborough.—Rink; Secretary, Mexborough Rink Company. Free library; Messrs. Russell & Cooper, architects, 11, Gray's Inn-square, W.C.

Mountain Ash.—Small-pox hospital; Mr. E. Thomas, surveyor, Mountain Ash.

Newburn.—Offices (3,000*l.*); Mr. E. Cratney, architect, High-street, Wallsend.

Newmarket (Rhyl).—Parish hall; Mr. M. A. Ralli, builder, Rhyl.

Newport (Ireland).—Additions to workhouse (9,000*l.*); the Guardians, Newport.

Oxford.—Rink; Mr. S. Salter, architect, Lloyd's Bank-chambers, Oxford.

Parkstone.—School; Mr. F. Newman, architect, Council Offices, Poole.

Pike Law.—Infirmary (13,000*l.*); Mr. R. Stewart, builder, Accrington.

Plyngaer.—Forty houses; Secretary, No. 2, Gelbgaer Building Club.

Reading.—Alterations to the Guardians' offices (1,500*l.*); Mr. McCarthy Fitt, builder.

Rusworp.—Primitive Methodist chapel; the Trustees, Rusworp.

Ruthin.—Additions to workhouse; the Guardians, Ruthin.

St. Helens.—Additions to Providence Hospital; Mr. J. Barony, architect, St. Helens.

Salford.—The Town Council has passed the following plans.—Additions to bleaching works, Nona-street, Pendleton; extensions to dye works, Liverpool-street, Pendleton.

Sheffield. — Adaptation of Surrey-street Music-hall for library purposes, Mr. C. F. Wike, Surveyor, Sheffield Corporation. The Town Council has passed the following plans: — Forty-nine houses, Arran-street, Forres-street, and Cross-lane, Mr. J. Sanderson; additions and alterations, Sportsman's Inn, Hardy-street, and Otley-street, Messrs. J. L. Cockayne & Sons; transformer-house, Guernsey-road, for the Heeley Silver Wire and Rolling Mills Company; alterations to Blue Bell Inn, Worksop-road, Messrs. D. Gilmour & Co., Ltd., alterations to Hill Top Hotel, Attercliffe Common, Messrs. Strout's Brewery Company, Ltd.; additions and alterations to Butchers' Arms public-house, Langsett-road and Whitehouse-lane, Messrs. Tennant Brothers, Ltd.; hall of residence, Clarkhouse-road and Park-lane, for the Education Committee of Sheffield Corporation.

Shepton Mallett.—Isolation Hospital; Surveyor, Urban District Council, Wells, Somerset.

Skenfrith.—Additions to St. Bridget's Church; Mr. W. Weir, architect, Winchmore Hill, London, N.

Southampton.—College building, Highfield Court; Governors of J. Hartley College, Southampton.

Southend-on-Sea.—Extensions to Chalkwell Hall School; Mr. W. J. Wood, architect, Alexandra-road, Southend.

Stoke.—Master's residence and lodge; the Guardians.

Swansea.—The Town Council has passed the following plans:—Three houses, Monteney-street, Manselton, Mr. Jas. Taylor; six houses, Carmarthen-road, Cwmdu, Messrs. J. & F. Weaver; three houses, Kilvey-hill, Mr. Jno. Dilling; nine houses, off Siloh-road, Landore, Mr. J. Morgan Jones; Motor garage and additions, 84, King Edward's-road, Dr. D. R. Edwards; shop and offices, Castle-street, Messrs. Masters & Co.

Taunton.—Chapel; Trustees, Rowbarton Congregational Church.

Tnysddu.—Police-station; Mr. W. Tanner, architect, Shire Hall, Newport.

Tolworth (Surrey).—School (7,692*l.*); Messrs. Walter Lawrence & Son, builders, Waltham Cross.

Ushaw Moor.—Church; Rev. E. Beech. Twenty houses; Surveyor, Rural District Council, Durham.

Warrington.—The Town Council has passed the following plans:—Business premises, Parker-street and Museum-street, for Messrs. T. Williams & Son; four houses, Pickmere-street, for Mr. Thomas Hewitt; motor buildings, Sankey-street and Parker-street, Messrs. Ballian & Davies.

Watford.—The Urban District Council has passed the following plans:—Five houses, Field-road, Mr. H. W. Grover; extension to bottling store, the Brewery, High-street, for Messrs. Benskins, Ltd.; offices, Cecil-street, Messrs. Bracey & Clark; drying-room, Vi-Cocoa factory, for Dr. Tibbles, Ltd.

Whiteinch.—Lodging-houses (10,000*l.*); Mr. J. Bell, architect, 8, Merry-street, Motherwell.

Wolsingham.—Secondary school (11,000*l.*); Messrs. Walton Brothers, builders, Crook, Durham.

York.—Additional laboratory at Archbishop Holgate's Grammar School (500*l.*), for the Governors.

Master Builders' Associations, etc.

COVENTRY MASTER BUILDERS' ASSOCIATION.

The Coventry and District Master Builders' Association have sent a representation to the Coventry City Council calling attention to the great inconvenience likely to be caused by plans for buildings, etc., being approved once a month instead of fortnightly as hitherto. At the meeting of the City Council on Tuesday Councillor Gardner, Chairman of the General Works Committee announced that it had been arranged for a Plans Sub-Committee to be appointed to sit fortnightly for the special purpose of dealing with plans for new streets and buildings, so that this business would really be facilitated.

Obituary.

MR. HALL.

We have to announce the death, on October 18, at his residence in Quernmore-road, Stroud Green, N., of Mr. Henry Hall, aged 82 years. Mr. Hall, who four years ago removed from No. 19, Doughty-street, Mecklenburgh-square, W.C., to Stroud Green, was elected in 1861 an Associate, and in 1878 a Fellow, of the Royal Institute of British Architects. He was the architect to the School Board for Dartford of the West-hill schools, and of the York-road, East-hill, school (for 500 boys), for which he won the first premium, 1899-1903; All Saints' Church, Merstham, near Redhill, 1897; the Congregational Church at Ashford, Middlesex; a factory at Crewkerne for Mr. J. H. Waller; a villa residence for Colonel Morgan at Sunbury-on-Thames; and, as we gather, Cheltenham Grammar School, of which the plans and designs—selected in competition—were illustrated in the *Builder* of May 8, 1886. We may mention that Mr. Hall took a warm interest in the proceedings of the Architects' Benevolent Society, and served as auditor upon two or three occasions.

General Building News.

ST. MARK'S CHURCH, WOODCOTE, PURLEY.

The foundation-stone of St. Mark's Church, Purley, was laid on Saturday, October 23. The church is designed in the decorated Gothic style. The nave is 25 ft. 6 in. wide, 38 ft. high, and 83 ft. long, divided into five bays. The chancel is 24 ft. 6 in. wide and 38 ft. 6 in. long. There are north and south lean-to aisles, 10 ft. 3 in. wide, and double transepts, that on the north side forming the nave to an apsidal ended chapel. The vestries are placed on the south side of the chancel, and the organ-chamber is formed over the choir vestry. The tower is placed at the junction of the aisle and transept on the north side of the church, and has a copper covered spire rising to a height of 130 ft., the base of

Digitized by Google

the tower forming the principal entrance to the church. The baptistery is placed at the west end, and is flanked on either side by entrance porches. The materials used are Kentish ragstone laid in random courses, with Bath stone dressings externally, and brick facing, with stone dressings internally. The church is being built by Messrs. R. Wilkins & Sons, of Bristol, from the designs of Mr. Geo. H. Fellowes Prynne, of Westminster.

ROMAN CATHOLIC CHURCH, CHESTER-LE-STREET.

The foundation-stone was recently laid of a new Roman Catholic church at Chester-le-Street. The building, which is being erected according to designs by Mr. Theodor Korner, of Sunderland, is of stone from the Long Bank Quarry at Layburn Hold. The church and presbytery together are estimated to cost 3,000*l.*, and there will be accommodation for 300 people.

PRIMITIVE METHODIST CHURCH, HIGH LITTLETON.

A new Primitive Methodist church has been opened at High Littleton. The building has seating accommodation for about 240 persons. It is lighted throughout with acetylene gas, the windows are of stained leaded lights, and it is heated with hot water on the low pressure system. The building operations have been carried out by Messrs. Coles Brothers, of Peasedown St. John, from plans by Mr. G. H. Gibson, of Radstock.

CHURCH, GRANGETOWN, SUNDERLAND.

Plans for a new church, to be erected at Grangetown, have been prepared by Mr. Hodgson Fowler, of Durham. The first part of the building, which is to cost 3,500*l.*, will be begun at soon as possible.

CHURCH RESTORATION, GAYWOOD, KING'S LYNN.

The parish church of Gaywood, King's Lynn, an ancient structure with remains of Saxon and Norman work, has undergone considerable restoration and extension under the direction of Mr. W. D. Caröe. The chancel has been restored and refitted, and an oak reredos, the work of Mr. N. Hitch, has been erected; an east window, put up by Messrs. Powell, of Whitefriars; a vestry, organ-chamber, and south chapel built, and the transepts restored. The sum of 2,500*l.* is required to complete the restoration and enlargement of the church in accordance with the architect's plans.

HIGH SCHOOL FOR GIRLS, DONCASTER.

The Doncaster Education Committee have, out of twenty-one tenders received for the erection of the new Doncaster High School for Girls, decided to accept that of Mr. J. T. Wright, of Leeds, amounting to 12,733*l.* The architects for the building are Messrs. J. M. Bottomley, Son, & Wellburn, also of Leeds.

NEW SCHOOLS, WHITLEY.

Plans have been prepared by Messrs. Marshall & Tweedy, architects, Newcastle, for new schools at Rockcliff, Whitley Bay. The class-rooms of the proposed building are grouped round a central hall, having side light, and are planned to accommodate about fifty pupils each. The ventilation is by windows and fan-lights above the doors, a special foul-air flue being provided from each room to the roof, where the foul air will be forced out by an electric fan. The building will be heated by radiators, and the heating-chamber is in the basement, the floor above it being concreted to prevent danger. The plans include a care-taker's house.

PUBLIC HALL, CARRON, N.B.

A new public hall, with reading-room and library, has been erected at Carron. It was designed by Mr. C. C. Doig, of Elgin, and the contractors were:—Mason, Mr. Peter M'Combie, Aberlour; slaters, Messrs. Davidson & Son, Elgin; plasterer, Mr. A. Bain, Aberlour; painter, Mr. R. Grant, Aberlour; carpenter, Mr. A. Innes, Knockando.

PARISH HALL AND INSTITUTE, WILLESDEN GREEN.

Last week the new parish hall and institute in connexion with St. Gabriel's Church, Willesden Green, was opened, the ceremony being preceded by a service in the church. The building, which is situated at the corner of the Anson and Chichele roads, contains a large and a small hall, Council, reading, billiard, and artistes' rooms, kitchen, lavatories, etc., and is electric lighted throughout. It is built of red brick, with white facings, and has been erected by Messrs. Patman & Fotheringham, from the plans of Mr. C. H. Freeman.

HOSPITAL REBUILDING, GLASGOW.

The premises of the Glasgow Cancer Hospital are being rebuilt. For the accommodation of patients there are four wards, each containing eight beds. A convalescent ward is also provided, and nine single wards. The floors are fireproof, being formed of concrete blocks deafened with felt, and finished in pitch-pine and polished. The walls are tiled to a height of 5 ft., and the upper walls and ceilings finished with Keene's cement and enamel paint. The ceilings are flat, having no projecting beams, and all angles and corners are rounded. The whole of the top flat of the north-east portion of the building has been arranged as a research department. The basement is occupied by the kitchen and stores, etc. The nurses' home, occupying the western portion of the site, has been entirely rebuilt. Accommodation for sixteen nurses and eighteen servants is provided, with dining and sitting rooms for each, and on the ground floor a suite of rooms for the matron. Each nurse has a separate bedroom, with a fireplace for ventilation purposes, and also a radiator. To the rear of the building a laundry has been erected. A destructor and a steam disinfector have also been installed, and adjacent to the laundry is placed a large Cornish boiler for supplying steam for heating, hot water, cooking, and sterilising purposes. To the east of the site a small mortuary and mortuary chapel are placed, where funeral services may be held. The whole of the buildings are heated on the "Reck" system by means of radiators. The patients will shortly be removed from the old portion of the buildings into the new wards, and the older part will then be entirely rebuilt, bringing it into harmony with the remainder of the buildings. Two fully-equipped operating theatres will form part of this section. The entire buildings and equipment have been carried out, under the supervision of Dr. Mackintosh, of the Western Infirmary, by Messrs. James M. Monro & Son, architects, with Mr. John Dixon as consulting engineer.

GENERAL HOSPITAL, RAMSGATE.

A new hospital has been built on a site in West Cliff-road, Ramsgate, from plans prepared by Messrs. Woodd & Ainslie, architects. It provides for thirty-two beds in ordinary circumstances, and consists of two blocks of buildings connected by a corridor, the wards being at the rear. The buildings are constructed of Crowborough dark brick and Newington (Sittingbourne) red brick, the tiles being supplied by Messrs. Pascall & Sons, of Wrotham. Messrs. J. W. Woodhall & Son, Ramsgate, are the general contractors, the others being as follows:—Heating apparatus, Haden & Sons, London; electric lighting, Middleton & Co., Dover and Ramsgate; floors and pavements, Rust's Vitreous Mosaic Company, London, British Doloment Company, Stuart's Granolithic Pavement Company, and Arts Pavement Company; sanitary fittings, Doulton & Co. and Finch & Co.; stonework, Mr. Sackett, Ramsgate; Frazzi fireproof floor construction, Mr. A. E. Brown; glazed partitions and tiles, Leeds Fire Clay Company; ironmongery, Gibbons & Co., Wolverhampton; electric fittings, Verity & Co., London, and Osler & Co., Birmingham. Mr. D. Davies has acted as clerk of works.

CLUB PREMISES, COGGESHALL.

New Liberal Club premises have been opened at Coggeshall. The building consists of a large billiard-room, bagatelle-room, and reading-room. The builders were Messrs. Jepp & Crabb, and the architect Mr. Harold Judges, of Coggeshall.

CLUB PREMISES, NEWCASTLE.

New premises are being built for the Northern Conservative Club in Pilgrim-street, Newcastle. The plans have been prepared by Messrs. Cackett & Burns Dick, architects.

PROPOSED COUNTY COUNCIL OFFICES, DERBY.

A Local Government Board inquiry was recently held by Mr. E. Dudley, F.S.I., into an application for permission to borrow 8,000*l.* for land for the extension of the Derbyshire County Council offices. Mr. J. J. Hughes-Hallett, Clerk to the Council, gave details of the accommodation proposed to be provided. There was no opposition to the application.

READING-ROOM, DUNDEE.

Premises known as the St. Roque's Reading-room are to be built in the Blackscroft district of Dundee. The plan, prepared by Mr. James Thomson, City Architect, provides for a building one story in height and constructed with local stone. The following contracts have been accepted for the work, amounting in all to 3,510*l.*, namely:—Mason work, D. K. Symington, 2,476*l.*; joiner work, James Pollock, 453*l.*; slater work, Charles Brown, 49*l.*; plaster work, Alexander M'Ritchie, 66*l.*; plumber work, J. Farquharson & Sons, 162*l.*; painter work, R. Lang, 32*l.*; fittings, Wishart & Son, 162*l.*; electrical fittings, A. Westwood & Son, 110*l.* The gymnasium, which at present occupies the site, is to be removed about 100 yds. east to a piece of ground in Blackscroft belonging to the Town Council. The contracts for this work were placed as follows:—Mason work, John Craig, 1,389*l.*; steelwork, David Keay, 352*l.* Both undertakings will be commenced forthwith.

BUILDING IN UPPER RENFREWSHIRE.

At a meeting of the Buildings Committee for the First or Upper District of the county of Renfrew it was intimated that for the five weeks ending October 11 plans for the erecting of the following buildings had been lodged:—Villa in Woodend-road, Newlands, for Mr. W. M. Robertson, 175, West George-street, Glasgow; double villa in Church-road, Giffnock, for Messrs. George Dixon & Sons, Giffnock; terrace of sixteen cottages in proposed new street on Braidbar Estate, Giffnock, for Messrs. Robertson & Gow, 175, West George-street, Glasgow; terrace of eight cottages in Mossgeil-road, Newlands, for Messrs. George Eadie & Sons, 405, Mathieson-street, Glasgow; four double villas in proposed new street at Giffnock, for John Taylor, Eddlehurst, Larkhall; additions to the Johnstone and District Cottage Hospital, Elderslie, for the Hospital Trustees; double cottage at corner of Beith-road and Newton-avenue, Elderslie, for Mr. James Keanie, Dunconnell, Johnstone; four tenements in proposed new streets on Braidbar Estate, Giffnock, for Mr. John E. Stevenson, 140, West George-street, Glasgow; double villa in proposed new street on Eastwood Mains Estate, for Mr. James Bell, 14, Hamilton-terrace, Govan; double villa in Southbrae-drive, Jordanhill, for Mr. Andrew Mickel, 65, Bath-street, Glasgow; two-story tenement at Brig o' Lea, Neilston, for the Barrhead Co-operative Society, Ltd.; addition to house at Stanely Reservoir, Paisley, for the Paisley Water Commissioners; and villa in proposed new street off Busby-road, Clarkston, for Messrs. Whyte & Galloway, 121, Bath-street, Glasgow. The valuation of the linings was estimated at 35,860*l.*, as compared with 16,050*l.* for the corresponding period of last year.

PROPOSED IMPROVEMENTS TO THE SEA-FRONT, EASTBOURNE.

The Borough Surveyor of Eastbourne has prepared plans for certain projected improvements on the sea-front. One is for an extension of the pavilion shelters on the centre parade, and another for the laying-out and equipment of a music-garden in the Redoubt Grounds. The proposals are to be reported on by the Pleasure Grounds Committee.

NEW BUILDINGS, ETC., AT DUNFERMLINE.

The Dunfermline Dean of Guild Court have granted permission to Messrs. J. & A. Thomson, New-row, to erect semi-detached villas at the east end of Brucefield-street; Mr. John Crawford, Campbell-street, to build semi-detached villas on the new street leading from Victoria-terrace to Thistle-street; Mr. James Drummond, to convert part of a house at 32, Chalmers-street, into a butcher's shop; Mr. Erskins Beveridge has been granted warrant to lay out new streets on the estate of Brucefield; Mr. James Smith is to be allowed to erect three double cottages on the new street leading from Victoria-terrace to Thistle-street.

PROPOSED ADDITION TO CONSUMPTIVES' HOME, BROOMHILL, N.B.

Mr. John Shanks, architect, recently submitted plans to the Kirkintilloch Dean of Guild Court for an extensive addition to Lanfine Home for Consumptives at Broomhill. The plans provide for the addition of other eighteen beds, with bathrooms, dressing-rooms, and verandah. The construction is to be on the Frazzi principle. The estimated cost is between 2,000*l.* and 3,000*l.*

NEW BUILDINGS, ABERDEEN.

The Plans Committee of the Aberdeen Town Council has sanctioned the following plans:—Alterations and additions in connexion with office on the south side of Rosebank-terrace, for Mr. John G. Duncan; alterations in connexion with premises No. 6. Pierhead, Torry, for Messrs. Craig & Cormack, per Mr. William Beattie, architect; alterations in connexion with dwelling-house, No. 13, Chestnut-row, for Mr. William Skinner, per Mr. Harvey Mennie, architect; alterations in connexion with Hutcheon-street slaughter-house, for the Aberdeen Flesher Incorporation, per Mr. John Rust, architect.

NEW BUILDINGS AT BEDFORD.

The Bedford Town Council have approved the plans of the following:—Two houses, Denmark-street, for Mr. C. Rootham; store and shed, Phœnix Inn, St. John's-street, for Messrs. Jarvis & Co.; warehouse, Foster Hill-road, for Mr. F. Jones; three houses, Denmark-street, for Mr. W. Braybrook; house and stables, Denmark-street, for Mr. D. Francis; five houses, Southville-road, for Messrs. C. Melcombe & Son.

"WELLINGTON HOUSE" HOTEL.

A large building known as "Wellington House" Residential Hotel has just been opened at Buckingham-gate, and occupies a superficial area of 12,272 ft., having a frontage

Digitized by Google

to Buckingham-gate of 174 ft., and 143 ft. to York-street. The building occupies an island site. The accommodation consists of self-contained flats and single rooms, with public rooms for use of tenants, consisting of billiard-room, smoking-room and lounge, restaurant, dining, drawing and writing rooms, with banqueting and reception rooms *en suite*, the scheme being to produce something between a high-class hotel and self-contained flats *de luxe* at one inclusive charge. The elevations are carried out in red brick and gauged work in a style of free Renaissance, with modelling and decorations in Dennis terra-cotta, with dragged surface. The general contractor was Mr. C. Gray, of Kensington. The kitchen equipment was supplied and fixed by the Falkirk Iron Company, and passenger and service lifts by Messrs. Waygood & Co. The decorations, furniture, and appointments were carried out by Messrs. Maple & Co., Ltd., from designs and under the supervision of the architects, Messrs. Palgrave & Co., with Mr. Percival Hawkins as chief of staff.

Miscellaneous.

THE LIVERPOOL HEALTH COMMITTEE.

An address was recently delivered by Councillor A. Shelmerdine before a local working-men's association on the "Work of the Liverpool Health Committee." Mr. Shelmerdine pointed out that the Health Committee of the Corporation was the largest sanitary authority in the country, and every matter connected with the administration of the health of the community other than that of hospital treatment was under the jurisdiction and guidance of the Committee. Proceeding, the lecturer said that one of the most important and pressing questions of the day was that of the height of buildings, which must be adhered to in the future. The new Royal Liver building, which is being constructed of reinforced concrete, is, he thought, an object-lesson which must receive careful consideration in the future. When completed it will be 168 ft. in height from the ground to the main roof, and 290 ft. to the top of the main towers. Personally he would be very sorry to see the experience of New York repeated in Liverpool. When walking up Broadway between those high buildings, very like the new Liver building in their construction, he had been impressed with the fact that all sunlight is shut out, and to a certain extent a free current of air prevented. Liverpool streets were generally narrow, much more so than any of the American cities, and should the principle of high buildings be adopted it certainly would not conduce to the health and comfort of Liverpool. The Health Committee had lately given orders for all the old tin cans and metal to be picked and sorted out of the town refuse, and a powerful hydraulic plunger press was shortly to be fixed at a cost of under 200*l*., into which all this old metal refuse will be tipped, the material being squeezed by hydraulic pressure into blocks or cakes of iron, which it was expected would realise a further saving of nearly 2,000*l*. per annum. The washing of streets, courts, back passages, etc., formed a large part of the work of the Health Committee owing to the defective planning of many minor streets, and the absence of adequate back passages, some difficulties have yet to be overcome before this can be considered satisfactory. The progress of sanitation in Liverpool has advanced by leaps and bounds during the past twenty years. The death rate has been reduced in consequence from 27·5 per 1,000 in 1890, to 18·5 in 1908.

BISHOP WILBERFORCE MEMORIAL, CHICHESTER.

A memorial to Bishop Wilberforce has been unveiled in Chichester Cathedral. The general design is by Mr. Somers Clarke, architect to the cathedral, and the work was executed by Mr. John Tweed, who has sculptured the figure of the late prelate, kneeling at a faldstool.

CHANGES IN MARYLEBONE.

Messrs. Niven & Wigglesworth have been appointed architects, on behalf of Count Herman Wrangel, for the Swedish church which it is proposed to build in Harcourt-street. The Church Army have acquired the adjacent premises on the south side of Marylebone-road, of the old brewery, known for more than a century and a half past as the "Yorkshire Stingo," whence on July 4, 1829, Shillibeer started the first two omnibuses used in London, which plied through the parish to and from the Bank of England. The brewery will be converted into a Central Labour Home, with the adaptation as a chapel of the large vat-room, and the erection of a home for "star class" prisoners (first offenders), and relief and work depôts for married and single men in place of the premises in Crawford-street and Tooting-court, at an estimated cost of some 20,000*l*. The authorities of Bedford College, who recently opened an additional residence for twenty students in South Villa, Regent's Park, have resolved to erect and equip new buildings in the park at an outlay of about 100,000*l*. for the maintenance of a college for the education of women. South Villa, on the south side of Inner Circle, has grounds of 11 acres, which extend to the lake, and was the home of George Bishop, F.R.S., who, in 1837, built the observatory wherein Dr. Hind, F.R.S., F.R.A.S., conducted his famous observations of asteroids and planets of the solar system, in 1844-54. Thirty years ago a new lease was obtained from the Crown conditionally upon not less than 50,000*l*. being expended, and that amount was exceeded, in improving the property. Fresh premises are about to be built in Great Portland-street for the British and Foreign Blind Association.

PROPOSED STREET IMPROVEMENTS, BRADFORD.

Mr. Edgar Dudley, Inspector to the Local Government Board, held an inquiry on the 19th inst. at the Bradford Town Hall in reference to an application for permission to borrow 12,538*l*. for works of street improvement and other sums amounting to 7,216*l*. for the purposes of certain improvements at Odsal, for providing a tip for refuse, and for the work of fencing. The Town Clerk, Mr. F. Stevens, explained that the tipping place was urgently needed, both for destructor output tipping and for spoil. The sum of 12,538*l*. was required for the paving of a number of streets. There was no opposition to the application.

A NEW SELF-CLOSING HINGE.

The Self-closing Hinge Syndicate send us the accompanying illustration and a description of their hinge, which appears as if it should work well. The hinge works on balls on a curved inclined plane or helical surface,

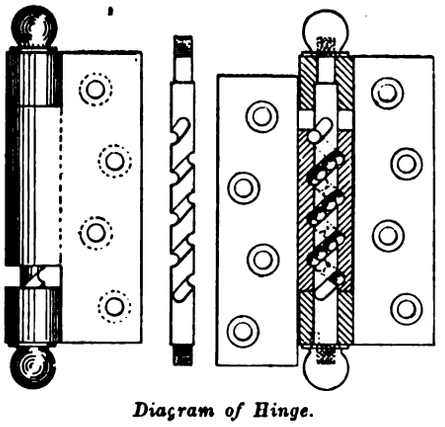


Diagram of Hinge.

like a screw thread. The act of opening the door raises the door, so that it clears the carpet, and when the door is released the hinges close the door as the balls roll down the inclined plane. As the door closes it lowers and forms a draught excluder.

LANDALE'S STONE SAW FRAME.

In respect of general arrangement the machine recently placed on the market by Mr. Charles Landale, of Derby, is not materially different from the ordinary horizontal stone sawing frame. There is, however, an important difference in the path followed by the reciprocating saw, the benefits claimed being an increased rate of cutting and a reduced consumption of power. Instead of working horizontally to and fro, the saw is guided by means of a parallel motion proportioned so as to give a curved path to the saw, whose cutting edge maintains a position which is always tangential to a curve of large radius, the ends of the saw being alternately lifted to allow the ingress of abrading material to the bottom of the dratt. The advantages claimed for this arrangement are (1) that some part of the saw is always acting on the stone, and (2) that the edge acts on a smaller length of stone at one time, thereby securing a keener bite. In the case of an ordinary saw stroke of 12 in. to 13 in. the actual cutting stroke is comparatively small, and the work intermittent instead of continuous. Mr. Landale adopts a 21-in. stroke, and claims that by utilising the whole of this the effective cutting stroke per minute on his machine is upwards of four times that in an ordinary saw frame. We are informed that one of the new machines has been working with highly successful results at Huddersfield for the last three or four months.

BUILDING ACCIDENTS.

In the House of Commons on October 20 Mr. Summerbell asked the Home Secretary whether he is aware that four fatal accidents have taken place recently, three occurring in the space of fourteen days, upon buildings in course of construction in Hull; and if he will state when it is intended to carry into law the recommendations of the Building Accidents Committee.—Mr. Gladstone, in a written reply, said:—As the question only appeared on the paper this morning, there has not been time to obtain a report on the subject of the accidents referred to; but, as the hon. member is aware, the legislation which is necessary in order to enable the recommendations of the Building Accidents Committee to be carried into effect has already been introduced, and I hope that it will be possible to pass it in the course of the next session.

STREET IMPROVEMENT, PORTSMOUTH.

Mr. F. H. Tulloch, Local Government Board Inspector, held an inquiry recently into the application of the Town Council to borrow 1,835*l*. for works of street improvement, *i.e.*, the laying of block asphalt in King'-road (170*l*.) and Queen-street (1,665*l*.). The Borough Engineer, Mr. P. Murch, stated that King's-road was laid with compressed asphalt seventeen years ago, and in that time only 187*l*. had been spent in repair. It was proposed to relay portions of King's-road where traffic had concentrated. Mr. Murch, in reply to the Inspector, said he had no evidence as to how the block asphalt would wear, as the first laid in Portsmouth, in Castle-road, had only been down six years. So far it was satisfactory, and after a course of years the blocks became welded together. After further evidence the inquiry closed.

INTERNATIONAL RAILWAY EXHIBITION, BUENOS AYRES, 1910.

In commemoration of the centenary of the formation of the South American States, the Argentine Republic announces the opening of an International Railway Exhibition on May 15 next in Buenos Ayres. This will be in connexion with an Agricultural Exhibition, which will demonstrate the recent development of the land. The Government has voted about 570,000*l*. towards the expenses of the commemoration. Simultaneously with the Exhibition a South American Railway Congress will be held, whose business is to inquire into all questions relating to the building and management of railroads. The President is the well-known Director-General of the Argentine Railways, Albert Schneidewind. According to information supplied by him, the State has a railway system of 24,000 kilometres, and 5,000 kilometres in course of construction, while private companies are building a further 12,000 kilometres. He calculates that under favourable political circumstances the system will reach 40,000 kilometres in the next six or seven years. The total cost of the projected railroads is about 60 million sterling, the work being chiefly in the hands of English and of Franco-Belgian companies. No German company is at present on the list.

Law Reports.

DISPUTE BETWEEN QUANTITY SURVEYOR AND CONTRACTOR.

THE case of Bramall *v.* Gowing came before a Divisional Court of King's Bench, composed of Justices Darling and Bucknill, this week, on an appeal by the defendant from a judgment of the County Court judge of Birmingham.

Mr. Maddock appeared for the appellant, and Mr. Hurst for the respondent.

Mr. Maddock said the action in the County Court was brought by the plaintiff for damages for alleged wrongful dismissal. The defendant admitted the dismissal, but pleaded that he had reasonable cause for dismissing the plaintiff; but the County Court judge entered judgment for the plaintiff for 25*l*. and costs. Plaintiff was a quantity surveyor of Manchester, and the defendant was a contractor of Birmingham. Defendant was erecting some large works for the Humber Company at Coventry, and it became necessary to have someone accustomed to measure up work. He advertised for a man, and ultimately engaged the plaintiff at 3*l*. 15s. a week, promising him a bonus at the end of the job to make his salary up to 4*l*. a week. There arose a question later on as to an order of the defendant to the plaintiff to go to Coventry with the defendant's manager and check some figures that he (plaintiff) had made. Plaintiff refused, and left. He sued for 93*l*. odd in the County Court, and it was argued there that the plaintiff was not a servant, and that the defendant was not justified in dismissing him in the way he had done. The learned counsel now argued that the findings of the County Court judge that the

Digitized by Google

agreement meant that the plaintiff was engaged as a professional man was wrong, and that the defendant had the right to make the request he did to the plaintiff to go to Coventry with his manager, and upon his refusing to dispense with his services.

Mr. Hurst, for the respondent, contended that the plaintiff was not subject to orders from the defendant as an ordinary servant, and therefore his dismissal for disobedience was unreasonable.

Their lordships, at the conclusion of the arguments of counsel, allowed the appeal, and ordered a new trial, holding that the County Court judge had misconstrued the documents in the case.

EAST BARNET DRAINAGE DISPUTE.

THE case of the East Barnet Valley Urban District Council *v.* Stallard came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Moulton and Farwell, on the 23rd inst., on the plaintiffs' appeal from a decision of Mr. Justice Swinfen Eady in the Chancery Division.

The plaintiffs brought the action for a declaration that the defendant, the owner and occupier of Heddon Court, was not entitled to cause any sewer or drain from any portion of the premises without the plaintiffs' district to communicate with any sewer of the plaintiffs' except on such terms and conditions as might be agreed or settled under sect. 22 of the Public Health Act, 1875. Plaintiffs also claimed an injunction to restrain the defendant from discharging the outside drainage into the sewers until those terms and conditions had been so determined. The defence was that the connexion had been made by the plaintiffs themselves some years ago without imposition of any terms on the defendant's predecessor in title, and therefore that sect. 22 of the Act was not applicable.

It appeared that much the greater part of the defendant's premises were outside the plaintiffs' district, and before 1895 the house drainage went to a cesspool, with an overflow drain leading into a pond, both being in the plaintiffs' district. The drainage from the stable and farm buildings went along another drain which joined the cesspool outflow drain before it reached the pond. The overflow from the pond went into a storm-water drain along the Cat Hill-road to a place called Pymme's Brook. In 1895 the pond became a public nuisance, and at the instigation of the plaintiffs' surveyor the then owner, a Mr. Hanbury, connected the cesspool overflow drain direct with the storm-water drain by a 9-in. pipe through the pond. A nuisance afterwards arose in the road gullies and the brook, and in 1897 plaintiffs, without consulting Mr. Hanbury, turned their storm-water into a soil sewer lower down the road. In 1900 the plaintiffs asked Mr. Hanbury to agree to provide another system of drainage, and they proposed that he should pay the usual outside rate of 10 per cent. per annum on the assessable value of the portion of the premises without their district. Mr. Hanbury contended that as the 9-in. pipe was laid down with the Surveyor's permission, and the connexion with the main sewer was made without consulting him, he was not liable to pay anything. No further steps were taken. Mr. Hanbury died in December, 1900. Plaintiffs, in November, 1902, extended their soil sewer further up the road, and connected it directly with the 9-in. pipe. In December, 1904, plaintiffs served a fresh notice on Mr. Hanbury's executors, but took no further steps. In June, 1905, defendant bought the premises for a boys' school, and put in extra water-closets and baths, which he connected with the 9-in. pipe. Defendant, however, pulled down the stables and farm buildings, and, according to the evidence, the drainage was not increased. The cesspool was cleared away. In July, 1907, and March, 1908, plaintiffs served the defendant with notices requiring him to agree to terms on which the communication was to be continued, or to provide another mode of disposal of the sewage; but as the defendant declined to act on the notices the plaintiffs brought the present action, claiming the relief before stated. Mr. Justice Swinfen Eady decided that when once the communication with the sewer was made it could not be interfered with, and that there was no new communication within sect. 22 of the Act, and he dismissed the action with costs. Hence the present appeal of the plaintiffs.

Mr. Micklem, K.C., and Mr. Naldrett appeared for the appellants; and Mr. Frank Russell, K.C., and Mr. Sheldon for the respondent (the defendant).

At the conclusion of the arguments of counsel for the appellants, and without calling upon counsel for the respondent, their lordships held that the decision of Mr. Justice Swinfen Eady was perfectly right, and dismissed the appeal with costs.

Patents.

APPLICATIONS PUBLISHED.*

21,176 of 1908.—Edward Bowden: Heat insulation of pipes.

23,506 of 1908.—Jean Henri Chatenet: Manufacture of blocks or other pieces of reinforced wood.

23,554 of 1908.—Frederick George Wright: Lifting and traversing jacks.

23,991 of 1908.—Joseph Walwyn White: Aerial ropeways.

24,348 of 1908.—John Joseph Rawlings, Henry William Handcock, and Alfred Herbert Dykes: Sheathing of electrical wires.

27,777 of 1908.—Henry Jocelyn Davidson: Windows.

890 of 1909.—Hugo Sack: Rolled metal bar.

2,672 of 1909.—Alexander Stuart Merson and Leeds Fireclay Company, Ltd.: Lavatory basins, wash bowls, and sinks.

3,835 of 1909.—Abraham Fenn and William Fenn: Heads for chimney-pots and ventilators.

4,610 of 1909.—William Newman & Sons, Ltd., and George Frederick Newman: Panic-bolts.

6,073 of 1909.—Arnoldo Schindler: Houses for regions subject to earthquakes.

10,183 of 1909.—Henry Ernest Austide Gallon: Apparatus for beading or turning over the ends of tubes.

11,937 of 1909.—Erik Steenberg: Tipping wagons.

13,367 of 1909.—Charles Josiah Crapper: Revolving shutter.

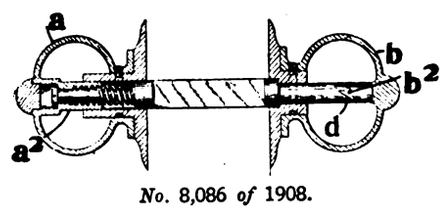
13,437 of 1909.—Augustus Smith: Hoisting apparatus.

15,294 of 1909.—Arthur Kingston: Safety lock-bolt for windows.

18,295 of 1909.—William Herbert Percy: Reinforced concrete piles, struts, and subaqueous structures.

SELECTED PATENTS.

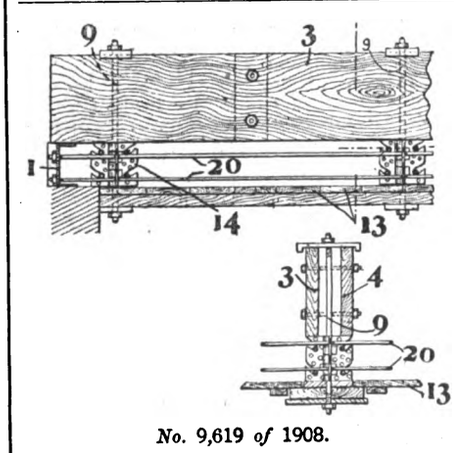
8,086 of 1908.—Noel Pemberton Billing: Latches. This relates to a latch in which the outer knob *b* is disconnected from the latch spindle by the rotation of the inner knob *a* in



No. 8,086 *of* 1908.

one direction. A stem a^2 within the knob is internally threaded to engage a screwed portion of the spindle, which may thus have its serrated end *d* disconnected from a stem b^2 within the knob *b*.

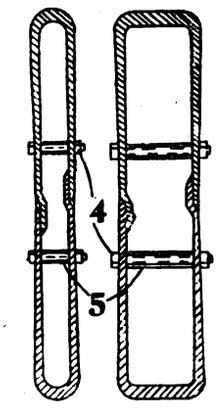
9,619 of 1908.—Ernst Baum: Reinforced concrete floors. This relates to a method of construction of reinforced concrete floors in which the temporary centring 13 is suspended by bolts 9 from double beams 3, 4, placed above the floor level and resting directly on the walls or on rails 1 on the walls. The reinforcing bars 20 are positioned and supported by



No. 9,619 *of* 1908.

notched and bent shot-metal supports 14 having ears through which the bolts 9 pass, and perforations to key with the concrete. The bars 20 may be anchored to the rails 1. When the concrete has set, the bolts 9 are withdrawn and the centring and beams are removed; the bolt-holes in the concrete may be filled in, or may be used for fixing the floor joists.

10,133 of 1908.—Thomas Gunstone Hill: Girders and beams. This relates to a beam or girder of the type described in Specification No. 3,767 A.D. 1907, formed



No. 10,133 *of* 1908.

of two U-shaped plates, thick at the bends and with the sides tapered to the edges, which are lapped and welded or riveted together. The sides are stiffened by bolts 4 in sleeve 5.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

October 11.—By HUTTON, THOMPSON, & COLBOURNE (at Southam).

Southam, Warwick.—Daventry-st., draper's shop and premises, f., y.r. 50*l.*	£610
Daventry-st., house and shop, f., y.r. 18*l.*	235
High-st., three cottages, f., gross rentals 24*l.* 8s.	230
Banbury-rd., 12 cottages and garden ground, f., gross rentals 82*l.* 5s.	425
Daltons Land, 9 a. 3 r. 35 p., f.	515
Welsh-rd., three fields, 9 a. 0 r. 17 p., f.	610
Stockton, Warwick.—Spiers Farm, 50 a. 1 r. 4 p., f.	1,125
Griffins Farm, 82 a. 1 r. 12 p., f.	1,950
Napton-on-the-Hill, Warwick.—The Beeches, 14 a. 0 r. 10 p., f.	580
Hillside Cottages and 3 r. 35 p., f.	115
Fenny Compton, Warwick.—Two cottages and ¼ a., f.	320

October 13.—By JOSEPH STOWER (at Tenby).

Manorbier, Pembroke.—Norton Cottage and 7 a. 0 r. 36 p., c.	430
The Shanty, c.	410

By HUMBERT & FLINT (at Birmingham).

Kingsbury, Warwick.—Part of the Drayton Manor Estate, 1,174 a. 3 r. 4 p., f. (in lots)	37,290

October 18.—By WEATHERALL & GREEN.

Chiswick.—Oxford-rd., l.g. rents 32*l.* 8s., u.t. 57 yrs., g.r. 1*l.*	520

October 19.—By ROGERS, CHAPMAN, & THOMAS.

Chelsea.—16, 17, and 18, Godfrey-st., f., w.r. 93*l.* 12s.	685
17, Riley-st., f., w.r. 41*l.* 12s.	325
8, Anderson-st., u.t. 32½ yrs., g.r. 10*l.*, y.r. 50*l.*	315
Pimlico.—Ebury-st., l.g.r. 30*l.*, u.t. 13½ yrs., g.r. 2*l.*	275

By F. VARLEY & SON.

Finsbury Park.—96, Finsbury Park-rd., u.t. 57 yrs., g.r. 8*l.* 8s., e.r. 48*l.*	310

By CAMERONS.

Willesden.—10, Huddleston-rd., u.t. 72½ yrs., g.r. 6*l.* 10s., y.r. 32*l.*	235

By GRIFFITHS & MILLINGTON (at Worcester).

Grimley, Worcester.—The Noken Farm, 107 a. 3 r. 16 p., f.	2,850
Oakhall Green, five freehold cottages and 2 r. 14 p.	255
The New Inn and 3 a. 3 r. 16 p., f.	800

By MORRIS, MARSHALL, & POOLE (at Leominster).

Docklow, Hereford.—Lower Docklow Farm, 246 a. 1 r. 35 p., f.	4,500
West End Farm, 214 a. 1 r. 35 p., f.	4,300
Arable land, 3 a. 0 r. 26 p., f.	140
Eardisley, Hereford.—Lower Welson Farm, 204 a. 3 r. 11 p., f.	3,325
The Common Fields, 3 a. 3 r. 32 p., f.	170

By BOULTON & COOPER (at Malton).

Bulmer, Yorks.—Farm and enclosures, 177 a. 0 r. 14 p., f.	5,322

By BAXTER, PAYNE, & LEPPER.

Barbican.—38 and 40, Golden-la., f.g.r. 100*l.*, reversion in 68 yrs.	2,500

By ROBINSON & PARRATT.

Balham.—135, Bedford-hill, u.t. 68¼ yrs., g.r. 16*l.* 16s., e.r. 65*l.*	510

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xv.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

OCTOBER 31.—**Pembrokeshire.**—FARMHOUSE, ETC.—The Pembrokeshire Small Holdings and Allotments Committee invite model plan and specification for a farmhouse and outbuildings. For further particulars see advertisement in our issue of October 9.

NOVEMBER 1.—**Kendal.**—TECHNICAL SCHOOL.—The Corporation of the Borough of Kendal invite architects residing and practising in Westmorland to submit a competitive design, together with a written description and estimate for the erection of a technical school in the said Borough. A premium of 15*l.* is offered for the design considered by the Corporation first in order of merit, and further premiums of 10*l.* and 5*l.* respectively for those which are, in their opinion, second and third in order of merit; such designs, on payment of the promised premiums, shall become the absolute property of the Corporation. Particulars, etc., together with the plan of site, showing levels, etc., may be obtained free, on application to the Borough Surveyor. (Mr. J. E. Bolton, Town Clerk.)

NOVEMBER 1.—**Preston.**—GRAMMAR SCHOOL.—The Corporation of Preston invite architects practising as principals to submit competitive designs and plans for a new grammar school for boys, to be erected in Moor Park-avenue, Preston, and estimates for the same. Premiums of 50*l.*, 30*l.*, and 20*l.* Conditions of competition and plan of site will be sent on application to Mr. Alfred Howarth, Town Clerk, Town Hall, Preston.

NOVEMBER 3.—**Fermoy.**—WORKMEN'S DWELLINGS SCHEME NO. 3.—Applications are invited from civil engineers with a University degree and from members of the Royal Institute of Architects for the work of preparing all necessary plans, etc., and superintending the erection of workmen's dwellings, to be built shortly by the Fermoy Urban Council. Applicants to state the percentage they will charge on the building outlay. Mr. P. J. Lane, Town Clerk, Urban Council Chamber, Court House, Fermoy.

* NOVEMBER 24.—**Bury.**—LAYING-OUT GARDEN CITY SUBURB.—The Bury Housing and Town-Planning Association offer three prizes for a design for laying-out a garden city suburb. See advertisement in this issue for further particulars.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—**The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.**

* NOVEMBER 30. — **Workington.** — SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. See advertisement in this issue for further particulars.

DECEMBER 1.—**Bangor.**—LAYING-OUT A PARK.—The U.D.C. of Bangor (Co. Down) invite a scheme for the laying-out of a public park, 20 acres in extent, on ground acquired by them within their District. A premium of 30*l.*, to include all expenses, will be paid to the person whose scheme may be selected. Mr. J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2*s.* each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2*s.* from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 1.—**Dearham (Cumberland).**—HOUSE.—For erection of a dwelling-house at Dearham. Plans, etc., can be seen at Mr. George Cameron's, Crakahall, Dearham.

NOVEMBER 1.—**Keighley.**—New entrances and concrete floor at the fire brigade station. Full particulars from the Borough Engineer, Town Hall, Keighley.

NOVEMBER 1.—**Kilmallock.**—ALTERATIONS.—The Committee of the Effin Co-operative Agricultural and Dairy Society, Ltd., Newpark, Kilmallock, Co. Limerick, invite tenders for the carrying out of alterations to premises recently purchased from the Co-operative Wholesale Society, Ltd., Manchester, for the purpose of converting same into a hall. Plans, etc., can be seen by intending contractors at the offices of the dairy, or copies of specification will be supplied on application to manager.

NOVEMBER 1. — **Mickley Square.** — SHOP.—The Committee of the Blaydon Co-operative Society invite tenders for the erection of a drapery shop. Plans, etc., may be seen at the office at Blaydon or at the above branch.

NOVEMBER 1.—**Newcastle-on-Tyne.**—ADDITIONS, ETC.—Additions and alterations to the Convent of the Good Shepherd, South Gosforth, Newcastle-on-Tyne. Names to Messrs. Brodrick, Lowther, & Walker, F.R.I.B.A., architects, 77, Low-gate, Hull, and Central-chambers, Bridlington, with a deposit of 1*l.* 1*s.*

NOVEMBER 1.—**Pencoed (Wales).**—SHOP, ETC.—For erecting a shop and bakery at Pencoed. Plans, etc., may be seen at Kingston, Coity-road, Bridgend.

NOVEMBER 1.—**Portsmouth.**—GARAGE.—For pulling down old buildings and erecting a new garage and workshop and repairs to existing workshops, etc., for Messrs. Linington Bros., Ltd., Swan-street, Portsmouth. Plans, etc., can be seen, and all particulars obtained from the architects, Messrs. Rake & Cogswell, Prudential-buildings, Portsmouth.

NOVEMBER 1-15. — **Rowley Regis.** — SCHOOL.—Rowley Regis U.D.C. Education Committee invite tenders for the erection of a public elementary Council school for 250 infants at Tividale, Rowley Regis. One guinea for bills of quantities and form of tender must be sent to Messrs. Pritchard & Pritchard, architects, Kidderminster, before November 1, with name and address of applicant. Plans, etc., will be open for inspection at the Council Offices.

NOVEMBER 2.—**Dartmouth.**—ADDITIONS.—For additions and renovations to Stokecliffe, Dartmouth, for the Rev. E. C. Bayliss. Plans may be seen at the office of Mr. W. Percy Marr, A.R.I.B.A., architect and surveyor, Dartmouth, and a copy of schedule obtained on deposit of 1*l.* 1*s.*

NOVEMBER 2.—**Handsworth.**—ROOFWORK.—The U.D.C. invite tenders for tiling, slating, and repairing the roof of Victoria Park House, Grove-lane, Handsworth. Specification, etc., may be seen, and bill of quantities, etc., obtained, on application to Mr. H. Richardson, A.M.Inst.C.E., Surveyor to the Council.

NOVEMBER 3.—**Caerleon.**—PLAYSHEDS.—Erection of playsheds at Williams' Endowed Schools, Caerleon. Quantities may be obtained from Mr. Henry J. Griggs, architect, Metropolitan Bank-chambers, Newport, Mon.

NOVEMBER 3. — **Cranbrook.** — WORKHOUSE ADDITIONS.—The Guardians invite tenders for the erection of a tramp ward, lavatory, and alterations at the Workhouse at Cranbrook. Drawings, etc., may be seen on application at the Workhouse. Forms of tender, etc., may be obtained from Mr. C. Payne, Surveyor, Cranbrook.

* NOVEMBER 3.—**Devon.**—SCHOOLS.—The Devon County Education Authority invite tenders for new Council Schools at Heavitree and Newton Abbot. See advertisement in this issue for further particulars.

NOVEMBER 3.—**Inchicore.**—HOUSES.—The Directors of the Great Southern and Western Railway Company invite tenders for the erection of two semi-detached houses at Inchicore. Plans, etc., can be seen at the Engineer's office, Inchicore.

NOVEMBER 3.—**Kinsale.**—COTTAGES.—The Kinsale R.D.C. invite tenders for building cottages; also tenders for fencing plots, and for additions to and repair of existing cottages. Tender forms, etc., can be had on application from Mr. John Murphy, Clerk of Council, Council Office, Kinsale Workhouse.

NOVEMBER 3.—**Pensarn, etc.**—SCHOOL WORKS.—Additions, alterations, and repairs to the Pensarn Council School and Llandrygarn Council School respectively. The plans may be inspected at the respective schools.

NOVEMBER 3.—**Rhosesmor (Holywell).**—CHAPEL.—For a new chapel and schoolroom, etc., at the Rhosesmor Welsh C.M. Church. Plans, etc., may be inspected at the present chapel schoolroom on application to Secretary.

NOVEMBER 5.—**Crosby.**—HOUSE, ETC.—Erection of a dwelling-house, shop, and business premises at Crosby, in the County of Lincoln. Plans, etc., may be seen from Mr. W. H. Buttrick, P.A.S.I., architect, Scunthorpe.

NOVEMBER 5.—**Shoreham.**—LIFE-SAVING APPARATUS HOUSE.—The Board of Trade invite tenders for the erection of a rocket life-saving apparatus house at Shoreham. Copies of the plan, etc., can be obtained on application at the Coastguard Station, Shoreham.

NOVEMBER 6.—**Belfast.**—SCHOOLS.—Building new schools for the Select Vestry of All Saints' Parish, Belfast. Plans, etc., can be seen at office of Mr. William J. Fennell, F.R.I.B.A., architect, 2, Wellington-place, Belfast. Bills of quantities can be obtained from Messrs. M'Carthy & Brookes, surveyors, Scottish Provident-buildings.

NOVEMBER 6.—**Ramsgate.**—FLOOR.—The Corporation of Ramsgate invite tenders for the provision of a new rock maple block floor at their Royal Victoria Pavilion, Ramsgate. Full particulars can be obtained on application at the Borough Engineer's Office, Albion House, Ramsgate.

NOVEMBER 8.—**Wrightington.**—SCHOOL.—Lancashire Education Committee invite tenders for the erection of a new Elementary School at Wrightington, near Wigan, to accommodate 120 children. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l.*

NOVEMBER 9.—**Galashiels.**—ACADEMY.—The Galashiels Burgh School Board invite separate tenders for the mason, joiner, plumber, plaster, slater, painter, glazier, ironwork, and fittings of the Galashiels Burgh Academy, to be built on the Melrose-road, Galashiels. Plans can be seen, and form of tender, etc., obtained, at the office of the architects, Messrs. J. & J. Hall, architects, Galashiels.

NOVEMBER 10.—**Wrexham.**—GLASS ROOFS.—For glass roofs to the balconies at the new Workhouse Infirmary, for the Guardians. Plans, etc., can be seen, and all particulars obtained, upon application to Mr. J. Price Evans, Argyle-chambers, Wrexham.

NOVEMBER 11.—**Cappoquin.**—LIBRARY.—The Lismore Public Libraries Committee invite tenders for building a branch "Carnegie" Free Library at Cappoquin, Co. Waterford, from the plan, etc., prepared by Mr. Geo. P. Sheridan, F.R.I.A.I., architect, 25, Suffolk-street, Dublin, which can be seen at Board-room, Workhouse, Lismore.

NOVEMBER 11.—**Halifax.**—STORE, ETC.—Erection of a store, butcher's shop, and appurtenances, also two through dwelling-houses, to be situate at Skircoat, Halifax, for the Halifax Industrial Society, Ltd. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Clement Williams & Sons, architects, Post Office-buildings, Commercial-street.

* NOVEMBER 11. — **Streatham, S.W.** — ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving part of Welham-road, Streatham. See advertisement in this issue for further particulars.

NOVEMBER 12.—**Bournemouth.**—SIX-CELL REFUSE DESTRUCTOR, BUILDINGS, ETC.—Bournemouth T.C. invite schemes and tenders for the construction of a six-cell refuse destructor, buildings, etc. Full particulars, etc., can be obtained at the office of the Borough Engineer, provided the sum of 5*l.* 5*s.* has been deposited.

NOVEMBER 13.—**Dorchester.**—SCHOOL WORKS.—Alterations to entrance, etc., at the Girls' School, Icen-way, Dorchester. Plans, etc., may be seen at the office of the architect, Mr. J. Feacey, South Walks, Dorchester.

NOVEMBER 13.—**Widnes.**—MUNICIPAL SECONDARY AND TECHNICAL SCHOOL EXTENSION.—The Local Higher Education Sub-Committee invite tenders for the enlargement and extension of the Widnes Municipal Secondary and Technical School. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 3*l.*

NOVEMBER 15.—**Caerphilly.**—HOUSES.—Tenders are invited for the building of three houses, etc., on site of Old Parrot Inn. Plans, etc., may be seen at the office of Mr. C. M. Davies, 112, High-street, Merthyr.

* NOVEMBER 15.—**Liverpool.**—NEW BUILDINGS.—The Committee of the Royal Liver Friendly Society, Liverpool, invite tenders for bricklayer's work required in construction of area walls and keeper's quarters. See advertisement in this issue for further particulars.

NOVEMBER 15.—**Merton.**—COTTAGES.—Erection of a block of five cottages and a block of eight cottages in Mill-road, Merton Abbey Estate, High-street, Merton, S.W. Plans, etc., can be seen at office of Mr. Henry R. G. S. Smalliman, A.R.I.B.A., 8, Queen-street, Cheapside, E.C.

NOVEMBER 15.—**Portsmouth.**—URINAL.—For a six-stall urinal in Eastney-road, Eastney, at the side of the new Eastney Police-station. The specification and plan may be seen, and a form of tender obtained, at the Borough Engineer's Office at the Town Hall.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

✱ NOVEMBER 16.—**Victoria Park, N.E.**—REPAIRS.—The Guardians of Bethnal Green invite tenders for repairs to relief hall of their Administrative Offices, Bishop's-road, Victoria Park, N.E. See advertisement in this issue for further particulars.

NOVEMBER 18.—**Blackburn.**—ERECTION OF COUNCIL SCHOOL, BANGOR-STREET.—The Corporation of Blackburn invite tenders for the erection of the new Council school. Forms of tender, etc., may be obtained from the architects, Messrs. Cooper & Slater, 13, Richmond-terrace, Blackburn, on deposit of 1*l.* 1s. Names to the architects immediately.

NOVEMBER 18.—**Morecambe.**—CONVENIENCES.—The Corporation of Morecambe invite tenders for the construction of underground conveniences on Promenade, near Clock Tower. Plans, etc., may be seen, and form of tender, etc., obtained, on deposit of 2*l.* 2s., upon application to Mr. J. W. Hipwood, A.M.Inst.C.E., Borough Surveyor.

NOVEMBER 20. — **Bury St. Edmund's.** — SCHOOL WORKS.—West Suffolk Education Committee invite tenders for the provision of a cookery-room, assembly hall, and alterations to the County School and P.T. Centre, Bury St. Edmund's. Specification and form of tender may be obtained on application to the Building Inspector, Mr. A. Ainsworth Hunt, Shire Hall, Bury St. Edmund's.

✱ DECEMBER 1. — **Burslem.** — PUBLIC BUILDINGS.—The Burslem B.C. invite tenders for new Public Buildings in Wedgwood-place, Burslem. See advertisement in this issue for further particulars.

✱ DECEMBER 8. — **Middlesbrough.**—LIBRARY.—The Middlesbrough B.C. invite tenders for new Public Library in Dunning-street, Middlesbrough. See advertisement in this issue for further particulars.

NO DATE.—**Belfast.**—LECTURE HALL.—Erection and completion of proposed lecture hall and billiard-rooms, Ardoyne, Belfast, for the trustees. Plans, etc., can be obtained at the office of Messrs. Moore & Flanigan, architects, 35, Royal-avenue, Belfast.

NO DATE. — **Bradford.** — COTTAGES. — Erection of fifteen cottages, Bradford. Brick and mason (labour only); joiner, plumber, slater, plasterer (full contract). Write N. 786, The *Yorkshire Observer*.

NO DATE.—**Bury.**—ADDITIONAL WORKHOUSE ACCOMMODATION.—The Guardians invite tenders for the above work. Names and addresses to the architect, Mr. Alfred Hopkinson, 15, Agur-street, Bury, accompanied by a deposit of 5*l.*

NO DATE. — **Cardiff.**—SUNDAY SCHOOLS.—Extension of the Wesleyan Sunday Schools, fronting Fanny-street, Cathays, Cardiff, for the Trustees. Names to Mr. Henry Budgen, F.R.I.B.A., 95, St. Mary-street, Cardiff, with deposit cheque 2*l.* 2s.

NO DATE.—**Huddersfield.**—STABLE, ETC.—Erection of a four-stalled stable and shed at Hillhouse. Plans may be seen, and bills of quantities obtained, at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

NO DATE.—**Shardlow.**—WORKHOUSE BUILDINGS.—Shardlow Board of Guardians invite tenders from builders and contractors within the area of the Shardlow Union District only for converting the old laundry block into a day-room and dormitory at the Shardlow Union Workhouse, in accordance with plans, etc., prepared by Messrs. Naylor & Sale, F.F.R.I.B.A., architects and surveyors, Market-place, Derby. Quantities will be supplied by the architects upon application to them, and a deposit of 1*l.*

ENGINEERING, IRON, AND STEEL.

NOVEMBER 2.—**Newry.**—HEATING.—The U.D.C. of Newry invite tenders for the heating of the Board-room and offices of the Town Hall, Newry, by a low-pressure hot-water system. Particulars can be had on application to the Town Surveyor, Town Hall, Newry.

NOVEMBER 2. — **Warrington.** — GEAR. — The Electricity and Tramways Committee of the Corporation of Warrington invite tenders for arc lamp lowering gear. Specification and form of tender can be obtained from Mr. F. V. L. Mathias, Borough Electrical and Tramways Engineer, Howley, Warrington.

NOVEMBER 4.—**Southwark, London.**—ALTERATIONS TO WELL AND PUMP AT NEWINGTON WORKHOUSE, WESTMORELAND-ROAD, WALWORTH, S.E.—Alterations to the existing well and pump. Forms of tender, etc., may be obtained on application to offices of Mr. Sydney Wood, Clerk, Union Offices, John-street West, Blackfriars-road, S.E., on payment of 1*l.* 1s. Drawings of the proposed works may be seen at the Newington Workhouse.

✱ NOVEMBER 8.—**Romford.**—IRON BUILDINGS.—The Guardians of the Romford Union invite tenders for the erection complete of iron buildings. See advertisement in this issue for further particulars.

✱ NOVEMBER 10.—**Highgate, N.**—NEW BOILER. — The Hornsey T.C. invite tenders for supplying and fixing new sectional boiler to heating apparatus at the Council's School, North Hill, Highgate. See advertisement in this issue for further particulars.

NOVEMBER 10. — **Hornsey.** — NEW BOILER FOR THE COUNCIL'S HIGHGATE SCHOOL.—The T.C. invite tenders for the supply and fixing of a new sectional boiler at the Council's School, North-hill, Highgate. Copies of the conditions of contract, etc., can be obtained upon application to Mr. W. Ludford Freeman, Secretary for Education, 206, Stapleton Hall-road, Stroud Green, N.

NOVEMBER 24.—**Inverness.**—TRAMWAY SCHEME CONTRACT NO. 1.—The Inverness T.C. invite tenders for the supplying and laying of about 1667 yds. of permanent way between the gasworks and the refuse tip. Plans may be seen, and specification, etc., obtained, at the office of Mr. T. H. Scott, C.E., Burgh Surveyor, on payment of the sum of 1*l.* 1s.

DECEMBER 1.—**Newcastle-upon-Tyne.**—COMBINED MOTOR HOSE CARRIAGE FIRE-ESCAPE AND CHEMICAL ENGINE.—The Fire Brigade Committee invite tenders for supplying the Fire Brigade of the City with a combined motor hose carriage fire-escape and chemical engine. Specifications may be obtained from the Chief Constable, Central Police Offices, Newcastle-upon-Tyne.

MISCELLANEOUS.

NOVEMBER 1.—**Cleckheaton.**—STALL COVERS.—The Cleckheaton U.D.C. invite tenders for forty stall covers in connexion with their market. Full particulars may be obtained from the Surveyor at the Town Hall.

NOVEMBER 2. — **Ewell.** — SCAVENGING.—Ewell P.C. invite tenders for removal of house refuse and the emptying and cleaning of ashpits. Agreement and specification are open for inspection at the office of the Council, High-street, Ewell.

NOVEMBER 2. — **Keighley.** — FENCE WALL. — The Guardians of the Keighley Union invite tenders for the erection of about 350 lin. yds. of fence wall adjoining the Keighley Union Infirmary. Bills of quantities can be obtained from Mr. F. J. M. Short, Workhouse Master, Keighley, and a plan can be seen at the Workhouse.

NOVEMBER 2. — **London.** — TYRES. — The Board of Directors of the Madras and Southern Mahratta Railway Company, Ltd., invite tenders for 1,000 steel tyres for carriages and wagons, as per the specification, which may be seen at the offices of the company. The charge for the specification is 1*l.* 1s., which will not be returned. Mr. H. Bonham-Carter, Secretary, 91, York-street, Westminster, S.W.

NOVEMBER 3. — **Merthyr Tydfil.**—FURNISHING.—The Merthyr Tydfil Board of Guardians invite tenders for the furnishing of the new Receiving Home for Children at Aberdare. Printed schedules can be obtained from Mr. Frank T. James, Clerk to the Guardians, 134, High-street, Merthyr Tydfil, or from the Superintendent of the Training School, Aberdare.

NOVEMBER 4.—**Mickleover.**—SCAVENGING.—Repton R.D.C. invite tenders for emptying and cleansing of all dustpits, closets, etc., and the removal of house refuse. Forms of tender, etc., may be obtained from Mr. F. W. Bullock, Sanitary Inspector, Egginton, Derby, or Mr. C. F. Chamberlin, Clerk to the Council, Union Offices, Burton-on-Trent.

NOVEMBER 4. — **Sunderland.** — FURNISHING. — The Guardians of the Poor of the Sunderland Union invite tenders for the furnishing of the alterations and additions to the Workhouse. Drawings may be inspected, and bills of quantities obtained, on depositing 1*l.* 1s., at the offices of Messrs. W. & T. R. Milburn, FF.R.I.B.A., 20, Fawcett-street, Sunderland.

NOVEMBER 5.—**Cardiff.**—DISINFECTION.—The Guardians invite tenders for the supply of disinfectants to the Cardiff and Ely Workhouses. Forms of tender must be obtained from Mr. Arthur J. Harris, Clerk, Union Offices, Queen's-chambers, Cardiff.

NOVEMBER 5. — **Dinnington.** — ASPHALTING.—The West Riding Education Committee invite tenders for asphalting playgrounds, Dinnington Provided School. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

NOVEMBER 6. — **Crosby.** — STREET LIGHTING.—The Crosby P.C. invite tenders for the lighting, extinguishing, and maintenance of twenty-four oil lamps shortly to be erected in the Parish. For specification apply to Mr. E. Hall, Clerk.

NOVEMBER 8. — **Dublin.** — STEEL RAILING. — The Directors of the Great Northern Railway Company, Ireland, invite tenders for 2,300 ft. unclimbable steel railing in 10 ft. bays 6 ft. 6 in. high, delivered at their Dundalk Station. Parties wishing to tender can obtain forms of tender and drawing for the sum of 2s. 6d. (not returnable) by applying to Mr. W. H. Mills, Engineer-in-Chief, Amiens-street, Terminus, Dublin.

NOVEMBER 8. — **Monkseaton.**—CARTING.—Carting about 600 tons of cast-iron pipes from Monkseaton Station. Specification may be seen, and forms of tender obtained, at the office of Mr. John F. Smillie, Borough Surveyor, Tynemouth.

NOVEMBER 11. — **Cork.**—STEAM ROAD ROLLER.—The Council of the County Borough of Cork invite tenders for a 15-ton steam road roller, complete. Mr. F. W. M'Carthy, Town Clerk.

NOVEMBER 12. — **Hull.** — FURNITURE, ETC.—The Property Committee of the Corporation invite tenders for the furniture and fittings required for the new City Hall. Drawings may be seen at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull, and quantities and specifications obtained upon 2*l.* 2s. deposit.

NOVEMBER 16. — **Holsworthy.**—STEAM ROLLING.—Tenders are required by the Holsworthy R.D.C. for steam rolling in their district. Full particulars and form of tender can be obtained on application to the Surveyor, Mr. W. Horace Cousins, Bodmin-street, Holsworthy.

NOVEMBER 17. — **Hythe.** — SCAVENGING.—The Corporation of Hythe invite tenders for the collection and removal of house refuse for a term of five years. The specification can be seen, form of tender, etc., obtained, on application to Mr. Chris. Jones, C.E., Borough Surveyor, 54, High-street, Hythe, Kent.

NOVEMBER 30. — **Hale.** — STREET-LAMP FITTINGS. —The Hale U.D.C. invite offers for street-lamp fittings. Further particulars can be obtained from the Council's Surveyor on application to his office, Ashley-road, Hale, Cheshire.

DECEMBER 1.—**Newcastle-upon-Tyne.**—COMBINED MOTOR HOSE CARRIAGE, FIRE ESCAPE, AND CHEMICAL ENGINE.—The Fire Brigade Committee invite tenders for a combined motor hose carriage, fire escape, and chemical engine. Specifications may be obtained from the Chief Constable, Central Police Offices, Newcastle-upon-Tyne.

PAINTING, etc.

OCTOBER 30. — **Latchford.** — DECORATING. — The Baptist Church Decorating Committee invite tenders for decorating, etc., the church inside. Can be seen by appointment. Mr. J. R. Conway, Secretary, 651, Knutsford-road, Warrington.

NOVEMBER 1. — **Sheffield.** — PAINTING, ETC.—The Guardians of the Poor of the Sheffield Union invite tenders for painters' and whitewashers' work required at the Union Workhouse, Firvale, viz.:—(1) Inside work at the female asylum; (2) inside work at the female main building, in accordance with specifications, which may be seen, and further particulars obtained, on application to the Workhouse Master.

✱ NOVEMBER 9. — **London, S.E.** — PAINTING.—The Lambeth B.C. invite tenders for certain internal painting and general repairs to Public Baths, Kennington-road, S.E. See advertisement in this issue for further particulars.

NOVEMBER 10. — **Batley, etc.** — PAINTING, ETC.—Batley Education Committee invite tenders for painting, colour-washing, etc., at Batley C.E. School, Carlinghow, and Purlwell Council Schools, and Staincliffe C.E. School. Specifications may be obtained from Mr. G. R. H. Danby, M.A., Director of Education, Education Offices, Batley.

ROADS, SANITARY, AND WATER WORKS.

NOVEMBER 1. — **Amble.** — STREET WORKS. — The Amble U.D.C. invite tenders for making up portions of George-street with macadam and the back lane with chip paving, and Green Field-terrace lane with chip paving. Particulars of the work may be seen at the Council Offices, 94, Queen-street, Amble.

NOVEMBER 2.—**Llandaff.**—STREET IMPROVEMENTS.—Llandaff and Dinas Powis R.D.C. invite tenders for street improvement works in Whitchurch-road, Gabalfa, in the Parish of Llandaff. Plans, etc., may be seen, and bills of quantities obtained, on depositing the sum of 1*l.* 1s. with the Engineer, Mr. James Holden, A.M.Inst.C.E., 20, Park-place, Cardiff.

NOVEMBER 3.—**Hollingbourn.**—LOWERING WELL. —The Guardians invite tenders for lowering the well at the Union Workhouse, Hollingbourn. Drawings, etc., can be seen on application at 33, Earl-street, Maidstone.

NOVEMBER 3. — **Wanstead.** — ROAD WORKS. — Wanstead U.D.C. invite tenders (*a*) for kerbing and channelling (about 1,400 ft. run) in Woodford-road; (*b*) for the laying of 9-in. sewer and surface-water drains and works of paving, kerbing, channelling, etc., in connexion with "The Elms" Improvement, High-street. Copies of specification, quantities, and form of tender can be obtained, and drawings and form of contract inspected, at the Council Offices, Wanstead, N.E. (Surveyor's Department).

NOVEMBER 4. — **Liskeard.** — CLEANING DRAINS.—Liskeard R.D.C. invite tenders for cleaning the drains and water-tables of the roads in the respective parishes. Mr. W. Edwin Groves, Surveyor, Pensilva.

NOVEMBER 4.—**Youghal.**—SEWERAGE WORKS.—The Youghal U.D.C. invite tenders for works in connexion with the reconstruction of outfall sluice at Williamstown, Youghal, in accordance with plans, etc., prepared by their Engineer, Mr. W. H. Hill, jun., M.Inst.C.E.I., which may be inspected at the office of the Urban Council, Town Hall, Youghal, or that of the Engineer, 28, South-mall, Cork, and forms of tender may be obtained from the Clerk of the Council.

NOVEMBER 6. — **Alsager (Staffs).**—MAKING-UP.—For making-up of Alsager-road, for the U.D.C. Forms of tender, etc., may be obtained from Mr. H. V. Lynam, Surveyor to the Council, Alsager.

NOVEMBER 9. — **Bolton-upon-Dearne.** — PRIVATE STREET WORKS, VICTORIA-STREET BACK ROAD, GOLDTHORPE. — The Council invite tenders for private street works. Specification, etc., may be obtained from the Surveyor at his office upon a deposit of 1*l.* 1s.

NOVEMBER 9.—**Eston.**—ROADWAY.—Eston U.D.C. invite tenders for the forming of about 230 lin. yds. of new roadway, 36 ft. wide, in continuation of the new road, called Grange-road (leading off Station-road, Grangetown, to the South Tees Electric Power Works). Plans, etc., may be seen, and tender forms, etc., obtained, on application to Mr. C. McDermid, Surveyor, Council Offices, Grangetown, S.O., Yorks.

NOVEMBER 10.—**Blaby.**—ENDERBY WATER.—Laying water mains from the Narborough cross roads to the Village of Enderby. Plans may be inspected, and quantities obtained, on payment of the sum of 1*l.* 1s. Mr. B. A. Shires, Solicitor and Clerk to the Council, 1, Friar-lane, Leicester.

NOVEMBER 10. — **Horsforth.** — SEWAGE DISPOSAL WORKS: SCHEDULE NO. 2.—The U.D.C. invite tenders for the carrying out of works in connexion with the sewage disposal of the district. Drawings may be seen, and specification, etc., may be obtained, on application to Mr. Robert R. Jones, M.Inst.C.M.E., Council Offices, Horsforth, on payment of the sum of 3*l.* 3s.

NOVEMBER 10. — **Lancing, Brighton.** — WATER MAIN.—The B.C. invite tenders for the laying of 2,284 yds. of 6-in. water mains, 2,306 yds. of 4-in. water mains, etc., for the purpose of supplying water to the Bungalow Town Estate, in the Parish of Lancing. The specification, etc., may be obtained on application at office of Mr. Hugo Talbot, Town Clerk, at the Town Hall, Brighton.

NOVEMBER 11. — **Reading.** — PRIVATE STREET IMPROVEMENT WORKS.—The Urban Sanitary Authority invite tenders for making-up Northumberland-avenue (part from Warwick-road to the southern boundary of Iffley). The drawings may be seen, and specifications, etc., obtained, at offices of Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

NOVEMBER 15.—**Urmston.**—FLAGGING, ETC., FOOTPATHS.—The Urmston U.D.C. invite tenders for flagging and kerbing the footpaths in parts of Flixton, Stretford, and Station roads. Specifications, etc., can be seen, and quantities, etc., obtained, on application to Mr. James Heath, Council Offices, Urmston, upon payment of 2*l.*

NOVEMBER 15. — **Watford.** — CHURCH-STREET SEWERAGE.—The Watford U.D.C. invite tenders for the construction of stoneware pipe sewers. Drawings, etc., to be seen, and form of tender, etc., obtained,

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

on application to Mr. D. Waterhouse, Engineer, Council Offices, High-street, Watford.

NOVEMBER 22.—**Birkdale.**—AINSDALE SEWERAGE AND SEWAGE DISPOSAL, CONTRACT No. 1.—The U.D.C. of Birkdale invite tenders for the laying and jointing of cast-iron pipe effluent drain and sewers, etc. The drawings, etc., may be seen, and bills of quantities, etc., obtained, at the offices of the engineers, Messrs. Willcox & Raikes, of 63, Temple-row, Birmingham, on payment of a deposit of 5*l.* 5s.

NOVEMBER 22.—**Brentwood and Billericay.**—SEWERAGE AND SEWAGE DISPOSAL.—The Joint Committee of Brentwood U.D.C. and Billericay R.D.C. invite tenders for the provision, laying, and jointing of about 1½ miles of 21-in. diameter outfall sewer, and about 2 miles of 18, 15, 12, and 9-in. diameter intersepting sewers, together with manholes, etc. Drawings, etc., may be seen, and bills of quantities obtained, at the offices of the engineers, Messrs. Willcox & Raikes, 63, Temple-row, Birmingham, on payment of a deposit of 5*l.* 5s.

NOVEMBER 22.—**Steyning.**—STREET WORKS.—Steyning West R.D.C. invite tenders for the making-up of College-hill, Steyning. Drawings can be seen at the office of the Surveyor to the Council, Mr. Fredk. Slaughter, A.M.Inst.C.E., High-street, Steyning, from whom specifications, etc., can be obtained.

NOVEMBER 24. — **Longwood.** — ROAD WORKS.—Formation and sewering of two streets off Dale-street, Longwood. Plans may be seen, and quantities obtained, at offices of Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

DECEMBER 7.—**Shanklin.**—CHILLERTON AUXILIARY WATER SUPPLY.—The U.D.C. invite tenders for the supply and delivery at Newport, Isle of Wight, of cast-iron pipes, etc. Specification, etc., may be obtained from the Engineer, Mr. Ernest Charles Cooper, on payment of 3*l.* 3s.

NO DATE.—**Exeter.**—ROAD WORKS.—Work necessary to make the roads at Park House Estate, St. Thomas, Exeter. Names to Mr. J. Archibald Lucas, F.S.I., A.R.I.B.A., architect and surveyor, Guildhall-chambers, Exeter.

STONES, MATERIAL, AND STORES.

NOVEMBER 3.—**Camberwell.** — MATERIALS. — The Guardians of the Poor of the Parish of St. Giles, Camberwell, invite tenders for building materials, ironmongery, glass, timber, iron trusses, stoneware pipe, etc. Forms upon application to Mr. Charles S. Stevens, Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

NOVEMBER 3.—**London.** — MATERIALS. — The Guardians of the Poor of the Parish of St. Giles, Camberwell, invite tenders for the following to be supplied to their Gordon-road Workhouse during the ensuing twelve months, viz.:—Building materials, ironmongery, glass, timber, iron trusses, stoneware pipe, etc. Forms upon application to Mr. Charles S. Stevens, Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

NOVEMBER 8. — **Birmingham.** — STORES. — The Water Committee invite tenders for the supply of certain stores for one year. Patterns of some of the stores may be seen on application at the Foreman's Office, Brasshouse-passage, Broad-street, Birmingham, on November 2 and 3. Forms of tender and copies of conditions may be obtained at the offices, 44, Broad-street, Birmingham, on payment of 1*l.*

NOVEMBER 8.—**Romford.**—ROAD MATERIAL.—Romford R.D.C. invite tenders for the supply of 526 tons of best quality blue Guernsey granite; also 800 tons of Rhenish (only) basalt stone and 220 tons of best quality Kentish flints. Specifications and form of tender may be obtained from Mr. George Lapwood, Highway Surveyor, Victoria-chambers, Romford.

NOVEMBER 10. — **Carshalton.**—GRANITE. — The U.D.C. invite tenders for the supply of 1,000 cubic yds. of 1½ in. granite and for the hire of a steam road roller. Particulars may be obtained on application to the Council's Surveyor, Mr. W. Willis Gale, A.M.Inst.C.E., at District Council Office, The Square, Carshalton.

NOVEMBER 11.—**Ogmore.**—JOISTS, ETC.—Ogmore and Garw U.D.C. invite tenders for the supplying and delivering at Ogmore Vale G.W.R. Station of rolled steel joists and plates, Lewis bolts, nuts, tie rods, etc., of British manufacture, Siemens-Martin acid process throughout. No foreign steel will be accepted. All particulars may be obtained from Mr H. Dawkin Williams, Surveyor, on making personal application at the Council Offices, Brynmenyn, Glam.

NOVEMBER 13.—**Bradford.**—GENERAL STORES.—The Bradford Corporation invite tenders for the supply of miscellaneous stores. Schedule and conditions of tender may be had on application at the Tramway Offices, 7, Hall Ings, Bradford, on payment of the sum of 1*l.* 1s.

* NOVEMBER 18.—**London.**—STORES.—The London General Omnibus Company, Ltd., invite tenders for supply during year 1910 of various stores. See advertisement in this issue for further particulars.

NOVEMBER 19.—**Liverpool.**—STORES.—The Cheshire Lines Committee invite tenders for the supply, during the year 1910, of stores and materials. Specifications, etc., can be obtained upon application to Mr. S. Saxon Barton, Stores Superintendent, Cheshire Lines, Warrington.

NOVEMBER 22.—**Birkdale.**—AINSDALE SEWERAGE AND SEWAGE DISPOSAL, CONTRACT No. 4.—The U.D.C. invite tenders for the supply of iron pipes. Specifications, etc., can be obtained at the offices of the engineers, Messrs. Willcox & Raikes, 63, Temple-row, Birmingham, on payment of a deposit of 3*l.* 3s.

NO DATE.—**Aberkenfig.**—CLAY.—Puddling clay, free from sand and vegetable matter. Apply, stating price and quantity available, to Mr. Gilbert Hart, Brynmenyn, Aberkenfig, R.S.O.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*ASSISTANT ROAD OVERSEER	Hong Kong P.W. Department	See advertisement in this issue	Nov. 10

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*STOCK OF PAPERHANGINGS, REDCROSS-STREET, E.C.—On the Premises	Fryer, Cooper, & Co.	Nov. 3
*BUILDING MATERIALS, CLAPHAM JUNCTION—On the Site	A. W. Taylor & Co.	Nov. 4
*BUILDING MATERIALS, CHATHAM MILITARY BARRACKS—On the Premises	Hooker & Webb	do.
*BLDR'S. & CONTRACTOR'S PLANT & MCHRY., BELVEDERE-RD., S.E.—On the Premises	Fuller, Horsey, Sons, & Cassell	Nov. 10
*FREEHOLD BUILDING SITE, BOROUGH HIGH-STREET—At the Mart	Jones, Lang, & Co.	Nov. 15

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 6 6	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	„ delivered
Flettons..... ...	1 4 6	„ at railway depôt.
Best Fareham Red	3 12 0	„ „ „
Best Red Pressed Ruabon Facing..	5 0 0	„ „ „
Best Blue Pressed Staffordshire ...	3 15 0	„ „ „
Do. Bullnose	4 0 0	„ „ „
Best Stourbridge Fire Bricks	3 14 0	„ „ „
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers.....	10 7 6	„ „ „
Headers.....	9 17 6	„ „ „
Quoins, Bullnose, and Flats	13 17 6	„ „ „
Double Stretchers	15 17 6	„ „ „
Double Headers...	12 17 6	„ „ „
One Side and two Ends	16 17 6	„ „ „
Two Sides and one End.....	17 17 6	„ „ „
Splays and Squints	15 7 6	„ „ „
Best Dipped Salt Glazed Stretchers	10 7 6	„ „ „
Headers.....	9 17 6	„ „ „
Quoins, Bullnose, and Flats	13 17 6	„ „ „
Double Stretchers	15 17 6	„ „ „
Double Headers...	12 17 6	„ „ „
One Side and two Ends	16 17 6	„ „ „
Two Sides and one End.....	17 17 6	„ „ „
Splays and Squints	15 7 6	„ „ „
Second Quality White and Dipped Salt Glazed	1 5 0	„ less than best.

BRICKS, &c. (*continued*).

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	„ „
Best Portland Cement.....	28 0	per ton, „
Best Ground Blue Lias Lime	19 0	„ „

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt.....	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt.....	1 8½	„ „
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	„ „
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	„ „

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer „	1 6	„ „
Greenshill „	1 10	„ „
Darley Dale in blocks ...	2 4	„ „
Red Corsehill „	2 2	„ „
Closeburn Red Freestone	2 0	„ „
Red Mansfield „	2 4	„ „
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks.	2 10	per ft. cube, deld. rly. dep.
6 in sawn two sides landings to sizes (under 40 ft. super.).....	2 3	per ft. super. „
6 in. rubbed two sides ditto. ditto	2 6	„ „
3 in. sawn two sides slabs (random sizes)	0 11½	„ „
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	„ „
1½ in. to 2 in. ditto. ditto	0 6	„ „
Scappled random blocks.	3 0	per ft. cube. „
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. „
6 in. rubbed two sides ditto	3 0	„ „
3 in. sawn two sides slabs (random sizes)	1 2	„ „
2 in. self-faced random flags	0 5	„ „

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 „ „	13 17 6	„ „
20×10 first quality „	13 0 0	„ „
20×12 „ „	13 15 0	„ „
16×8 „ „	7 5 0	„ „
22×10 best blue Portmadoc	12 12 6	„ „
16×8 „ „	6 12 6	„ „
20×10 best Eureka unfading green ...	15 17 6	„ „
20×12 „ „	18 7 6	„ „
18×10 „ „	13 5 0	„ „
16×8 „ „	10 5 0	„ „
20×10 permanent green	11 12 6	„ „
18×10 „ „	9 12 6	„ „
16×8 „ „	6 12 6	„ „

TILES.

	s. d.	
Best plain red roofing tiles...	42 0	per 1000 at rly. dep.
Hip and Valley tiles ...	3 7	per doz. „
Best Broseley tiles	50 0	per 1000 „
Do. Ornamental tiles	52 6	„ „
Hip and Valley tiles ...	4 0	per doz. „
Best Ruabon red, brown, or brindled do. (Edwards) ...	57 6	per 1000 „
Do. Ornamental do.....	60 0	„ „
Hip tiles	4 0	per doz. „
Valley tiles	3 0	„ „
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 „
Do. Ornamental do.	54 6	„ „
Hip tiles.....	4 1	per doz. „
Valley tiles	3 8	„ „
Best "Rosemary" brand plain tiles.....	48 0	per 1000 „
Best Ornamental tiles.....	50 0	„ „
Hip tiles.....	4 0	per doz. „
Valley tiles	3 8	„ „
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 „
Do. pressed	47 6	„ „
Do. Ornamental do.....	50 0	„ „
Hip tiles	4 0	per doz. „
Valley tiles	3 6	„ „
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 „
Hand-made sand-faced ...	45 0	„ „
Hip tiles	4 0	per doz. „
Valley tiles	3 6	„ „

Digitized by Google

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	15 0 0
Deals: best 3 by 9	13 0 0	14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	,,
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¼ in.	1 0 0	,,
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft 4 10 0	5 0 0
Seconds	4 0 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 10 0	3 0 0
Pitch-pine timber (30 ft. average)	4 0 0	4 15 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	25 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Do. 3 in. by 9 in.	12 10 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	14 10 0	15 10 0
,, ,, 3 in. by 9 in.	13 10 0	14 0 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
,, ,, 3 in. by 9 in.	12 10 0	13 10 0
Battens	10 0 0	11 0 0
Pitch-pine: deals	18 0 0	21 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	,,
Seconds, regular sizes	33 0 0	,,
Oddments	28 0 0	,,
Kauri Pine - Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak logs— Large, per ft. cube	0 3 0	0 3 9
Small ,, ,,	0 2 6	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	0 0 9½
¼ in. do. do	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0
Teak per load	17 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0

Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. ,, ,,	0 14 0	0 18 0
¾ in. by 7 in. white ,, ,,	0 10 0	0 11 6
1 in. by 7 in. ,, ,,	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	7 10 0
Compound Girders, ordinary sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	10 0 0
Flitch Plates	9 0 0	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON— Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	—
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
,, ,, Galvanised	17 0 0	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black— Ordinary sizes to 20 g.	9 15 0	—
,, ,, 24 g.	10 15 0	—
,, ,, 26 g.	12 5 0	—
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	—
,, ,, 26 g.	16 10	—

METALS (*continued*).

	Per ton, in London £ s. d.	£ s. d.
IRON (*continued*)— Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18 0 0	—
,, ,, 22 g. and 24 g.	18 10 0	—
,, ,, 26 g.	20 0 0	—
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	—
,, ,, 22 g. and 24 g.	14 15 0	—
,, ,, 26 g.	16 5 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	—
,, ,, ,, 26 g.	15 0 0	—
Cut Nails, 3 in. to 6 in. (Under 3 in., usual trade extras.)	10 10 0	11 0 0

LEAD, &c.	Per ton, in London. £ s. d.	
LEAD—Sheet, English, 8lb. and up.	16 15 0	—
Pipe in coils	17 5 0	—
Soil pipe	19 5 0	—
Compo pipe	20 5 0	—
ZINC—Sheet— Vielle Montagne	27 5 0	—
Silesian	27 0 0	—
COPPER— Strong sheet per lb.	0 1 0	—
Thin ,, ,,	0 1 1	—
Copper nails ,, ,,	0 0 10	—
Copper wire ,, ,,	0 0 10	—
BRASS— Strong Sheet ,, ,,	0 0 11	—
Thin ,, ,,	0 1 0	—
TIN—English Ingots ,, ,,	0 1 4	—
SOLDER—Plumbers' ,, ,,	0 0 6½	—
Tinmen's ,, ,,	0 0 9	—
Blowpipe ,, ,,	0 0 11	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
,, fourths	1½d. ,, ,,
21 oz. thirds	3d. ,, ,,
,, fourths	2½d. ,, ,,
26 oz. thirds	4d. ,, ,,
,, fourths	3d. ,, ,,
32 oz. thirds	4½d ,, ,,
,, fourths	4½d. ,, ,,
Fluted Sheet, 15 oz	3½d. ,, ,,
,, 21 oz.	4½d. ,, ,,

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
¼ ,,	2¾d. ,, ,,
¼ ,,	2½d. ,, ,,
Figured, Oxford Rolled and Oceanic "Glass, white	3½d. ,, ,,
,, ,, tinted	5d. ,, ,,

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 7
,, ,, ,, in barrels	,,	0 2 8
,, ,, ,, in drums	,,	0 2 11
Boiled ,, ,, in barrels	,,	0 2 11
,, ,, ,, in drums	,,	0 3 2
Turpentine in barrels	,,	0 3 5
,, in drums	,,	0 3 7
Genuine Ground English White Lead	per ton	20 0 0
Red Lead, Dry	,,	19 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABBOTS LANGLEY.—For drainage of property at Waterside, for Watford Rural District Council. Mr. E. Lalley, Surveyor, 9, Market-street, Watford:—

C. Gentle	£114 12 11	A. Timberlake, King's Langley*	£77 10 0
A.M.Macdonald	105 0 0		
H. Brown	96 0 0		
Bracey & Clark	87 0 0		

[Surveyor's estimate, £70.]

ALDERSHOT.—For making-up Eland-road, for the Council. Mr. Fred. C. Uren, A.M.Inst.C.E., Surveyor to the Council:—

J. A. Frank	£218 2 6	A.M.Macdonald	£196 19 11
W. Norris	210 10 5	A. Wilcox	190 18 10
Ripley, Strong, & Co.	208 6 0	Martin, Wells, & Co., Ltd., Aldershot*	169 16 8
G. Kemp & Co.	199 0 0		

BARGOED.—For the erection of twenty or more houses at Bargoed, for the Graig Building Club, Bargoed. Mr. H. Gabe Jones, architect and surveyor. Hengoed:—

F. D. Watkins	£215 0 0
Vodder & Lee, Bargoed*	198 15 0
H. J. Davies	196 17 0

BARNSLEY.—For making up etc., of Plummer-street, Barnsley, for the Town Council. Mr. J. H. Taylor, M.Inst.C.E., Borough Surveyor, Manor House offices, Barnsley:—

J. Hood, Peel-street, Barnsley*	£267 15

BEDFORD.—For paving in Kempston-road, Harpur-street, and The Embankment, for the Town Council:—

Empire Stone Co., Ltd., London	£315 10 2	Kempston-road.
	143 18 4	Harpur-street.
	244 19 10	The Embankment.

BIRMINGHAM.—For new laundry at the Birmingham Workhouse, for the Guardians of the Poor of the Parish of Birmingham. Under the direction of Messrs. W. H. Ward, architects, Paradise-street, Birmingham:—

J. Atkinson	£4,250	S. F. Swift	£3,850
G. Robinson	4,240	R. Harris & Sons	3,795
E. Bates	4,160	J. Bowen & Sons	3,747
W. Payne	4,083	W. Sapcote & Sons	3,745
W. & J. Webb	4,040	W. Bishop	3,737
J. Webb	3,989	H. Taylor	3,735
T. Elvins	3,940	G. Webb & Son	3,722
W. H. Gibbs	3,900	J. Dallow & Sons	3,676
R. Fenwick, Ltd.	3,883	E. Crowder, Birmingham*	3,447
F. Smith	3,870		
J. Barnsley & Sons	3,866		

BRUMBY.—For erecting a boundary wall round land to be added to the Cemetery, for Brumby and Frodingham Urban District Council. Mr. Joe Green, Surveyor, Council Offices, Frodingham, Scunthorpe:—

T. H. Burnett	£214 10	J. Wilson	£179 5
C. Willingsmith	194 13	Smith Bros.	160 0
W. Robertshaw	179 10	W. Pullister*	153 10

[All of Cusby Scunthorpe.]
Surveyor's estimate, £156 7*s.* 6*d.*

BUSHEY.—For making up Vernon and Beechcroft roads, for the Urban District Council. Mr. E. E. Ryder, Surveyor, Council Offices, Bushey. Quantities by Surveyor:—

Champniss & Co.	£1,460 13 0
T. Free & Sons	1,384 9 11
F. P. Bliss	1,320 18 9
Bracey & Clark	1,256 0 0
W. Bailey & Sons	1,161 0 0
G. Jaggard, Bushey*	1,151 6 3

CHITTERNE (Wilts).—For the erection of a hous and stables, etc., for the Rev. T Mason. Mr. W. Cecil Glass, architect, 9, The Bridge, Frome, Somerset:—

F. Curtis & Son	£666 0 0
R. Butcher & Son	643 12 0
Polden & Feltham, Chitterne, Codford, Wilts‡	617 8 0

‡ Recommended for acceptance.

COALBROOKDALE.—For the erection of the Madeley secondary school, for the County Council of Salop. Mr. J. Holt, A.R.I.B.A., 9, Albert-square Manchester:—

H. Dorse, Cradley Heath	£5,859 15 9

DEVIZES.—For erection of a house of detention at the Central Police Barracks, for Wilts County Council. Mr. G. G. Powell, County Surveyor, County Offices Trowbridge:—

W. E. Chivers & Sons	£853 19	E. Preece	£750 0
G. Burton	850 0	W. Webb	625 0
H. Blackford & Son	805 0	T. Stone	515 0
Patson Bros.	768 0	H. Ash	498 0
J. Siding	750 0	Moore & Sons, Trowbridge*	472 0

FRIZINGHALL.—For erecting a workshop at the Chemical Works, for Bradford Corporation. Mr. Reg. G. Kirkby, City Architect, Whitaker-buildings, Bewery-street, Bradford. Quantities by Architect:—

Excavating Mason and Bricklayer:
W. Booth*
Carpenters and Joiners: Foothill & Balmforth*
Ironfounders and Smiths: S. Parsons & Co.*
Plumbers and Glaziers: A. Higginbotham & Son*
Slater: W. A. Nelson
} Schedule of Prices,
[All of Bradford.]

GRIMSBY.—For erecting a new Council school in Strand-street, for the Education Authority. Mr. H. C. Scaping, architect, Court-chambers, Grimsby:—

W. Kirton, Grimsby*	£11,200

HIGHAM HILL.—For new school to be erected on the Bulls Farm Site, Higham Hill, for Walthamstow Education Committee. Mr. H. Prosser, Architect. Quantities by Mr. G. T. G. Wright, F.S.I., 3, Great Winchester-street, E.C.:—

C. Roper	£7,990	H. J. Carter	£6,590
J. Stewart	7,586	W. E. Davey	6,469
Webb & Co.	7,499	W. J. Maddison	6,399
Shurmur & Sons	7,326	J. & J. Dean	6,395
Perry & Co.	7,260	A. Monk	6,390
Smith & Sons	7,260	Hammond & Son	6,369
Lawrance & Sons	6,992	F. J. Coxhead	6,311
Lawrence & Son	6,884	Knight & Son, Tottenham*	6,269
B. E. Nightingale	6,775	T. M. Moss	6,200
Brand, Pettit, & Co.	6,655	R. & E. Evans	5,987
H. C. Horswill	6,643		
Gathercole Bros.	6,600		

HINCKLEY.—For the erection of additions to Sketchley Dye Works, Hinckley, Leicestershire. Mr. W. T. Grewcock, A.R.I.B.A., Architect, Leicester and Hinckley:—

Haskard, Rudkin, & Beck	£3,670 0 0
H. Herbert & Sons	3,664 0 0
Bowles & Sons	3,660 0 0
S. Hutchinson & Sons	3,590 0 0
T. Herbert	3,585 0 0
Scurr, Jowett, & Co.	3,450 0 0
S. Chapman & Son	3,440 0 0
Bradshaw Bros.	3,433 0 0
A. Jeffcote (Hinckley)	3,372 11 6
S. Bentley & Co.*	3,319 0 0

Digitized by Google

LLWYNHUDOL.—For erecting a new residence at Llwynhudol, Abereron, Pwllheli, for Mrs. M. Williams. Mr. R. Lloyd Jones, architect, 36, High-street, Pwllheli:—

Jones, Roberts, & Jones	£910 0	J. H. Roberts	£767 0
E. Jones	900 0	E. Williams	766 0
O. Parry	849 0	E. Thomas	728 17
J. T. Jones	820 0	G. Jones, Morfa Nevin, Pwllheli*	683 0

LONDON.—For handicraft, metalwork, and laundry centres, The Acland, St. Pancras, N., for the London County Council:—

Marchant & Hirst	£3,464	C. R. Price	£2,777
Stapleton & Sons	3,168	Stevens & Sons	2,761
Brand, Pettit, & Co.	3,166	C. F. Kearley	2,757
G. S. S. Williams & Son	3,091	Treasure & Son, Ltd.	2,696
J. Willmott & Sons	2,942	McCormick & Sons, Ltd., Northampton-street, Essex-road*	2,669
Patman & Fotheringham, Ltd.	2,807		

[The estimate of the Architect (Education), comparable with the tenders, is £2,747.]

LONDON.—For alterations, Mantle-road, Deptford, for the London County Council:—

H. H. Hollingsworth	£1,981 0 0	G. Parker & Sons	£1,608 0 0
F. Smith & Co.	1,767 1 1	T. D. Leng	1,574 0 0
Holliday & Greenwood, Ltd.	1,732 0 0	F. & T. Thorne	1,556 0 0
J. & C. Bowyer, Ltd.	1,673 0 0	F. & G. Foster	1,548 0 0
W. Downs	1,668 0 0	J. Garrett & Son	1,496 0 0
J. Appleby & Sons	1,667 0 0	A. E. Symes	1,493 0 0
		H. L. Holloway, Church-street, Deptford*	1,490 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £1,605.]

LONDON.—For painting (Camberwell, N., Gloucester-road; Southwark, W., West-square), for the London County Council:—

Gloucester-road.

J. Garrett & Son	£676	Maxwell Bros., Ltd.	£612
A. F. Vigor & Co.	638	Lathey Bros.	601
J. Marsland & Sons	629	Holliday & Greenwood, Ltd., Brixton*	547
E. Triggs	622		

West-square.

W. Downs	£831	Maxwell Bros., Ltd.	£619
T. D. Leng	763	Rice & Son	591
Lapthorne & Co.	698	Holliday & Greenwood, Ltd.	583
J. Marsland & Sons	647	H. Bragg & Sons, Ltd., 19, Robsart-street, Brixton*	527
W. V. Goad	638		
J. Garrett & Son	634		
W. King & Son	632		

[The estimates of the Architect (Education), comparable with the tenders, are £650 and £585.]

LONDON.—For supply of gravel for parks and open spaces, for the London County Council:—

South-west District—Archbishop's-park, Hall & Co., 5s. 11d.; Battersea-park, Crayford Sand and Gravel Pits, 4s. 5d.; Brockwell-park, Martin, Martin, & Webb, 4s. 6d.; Clapham-common, Hall & Co., 5s. 11d.; Kennington-park, Crayford Sand and Gravel Pits, 4s. 6d.; Myatt's-fields, Martin, Martin, & Webb, 4s. 5d.; Tooting-common and Wandsworth-common, Hall & Co., 5s. 8d.

South-east District—Blackheath, Martin, Martin, & Webb, 4s. 6d.; Dulwich-park, Hall & Co., 5s. 5d.; Hilly-fields, Martin, Martin, & Webb, 4s. 6d.; Horniman-gardens, Martin, Martin, & Webb, 4s. 8d.; Manor House-gardens, Crayford Sand and Gravel Pits, 4s. 2d.: Mountsfield-park, Crayford Sand and Gravel Pits, 4s. 5d.; Peckham-rye and park, Martin, Martin, & Webb, 4s. 2d.; Ruskin-park, Crayford Sand and Gravel Pits, 4s. 6d.; Southwark-park, Martin, Martin, & Webb, 4s. 6d.; Sydenham-Wells-park, Crayford Sand and Gravel Pits, 4s. 8d.; Telegraph-hill, Martin, Martin, & Webb, 4s. 6d.

North-west District—Hampstead-heath, A. W. Tansley, 6s. 5d.; Lincoln's-inn-fields, H. Boyer, 6s. 3d.; Marble-hill, Hall & Co., 7s. 2d.; Pimlico-gardens, H. Sabey & Co., 6s. 3d.; Ravenscourt-park, J. Latter, 5s. 10d., Shepherd's-bush-common, J. Latter, 5s. 10d.; Waterlow-park, H. Barnaby, 6s. 6d.

North-east District—Bethnal-green-gardens, W. E. Stevens, 5s. 6d.; Clissold-park, J. E. Clark & Co., 6s.; Finsbury-park, J. Abrahams, Ltd., 6s.; Hackney-commons, H. Barnaby, 6s. 3d.; Hackney-marsh, W. E. Stevens, 6s. 6d; Highbury-fields, W. Weatherley, 6s. 1d.; Meath-gardens, W. E. Stevens, 5s. 6d.; Springfield-park, J. E. Clark & Co., 6s. 4d.; Tunnel-gardens, W. E. Stevens, 5s. 9d.; Victoria-park, W. Skipp, 5s. 1d.; Well-street-common, W. E. Stevens, 6s.; East-end churchyards, J. E. Clark & Co., 6s. 3d.

LONDON.—For fencing Garratt-green, for the London County Council:—

H. H. Martyn & Co., Ltd.	£529 10 0		
S. Wright	385 13 6		
H. E. Buck & Co.	318 0 0		
M. McVey & Co.	290 8 9		
L. Faulkner & Sons	289 0 0		
W. Hayward & Sons, Ltd.	287 0 0		
Bayliss, Jones, & Bayliss, Ltd.	279 1 6		
J. Elwell	273 0 0		
Hill & Smith, Ltd.	270 18 9		
W. Bain & Co., Ltd.	264 0 0		
T. W. Palmer & Co., 5, Victoria-street, Westminster, S.W.*	252 16 0		

LONDON.—For new school, Haverstock-hill, St Pancras, W., for the London County Council:—

W. Moss & Sons	£13,294 10 6		
L. H. & R. Roberts	12,789 0 0		
C. F. Kearley	12,769 0 0		
J. & M. Patrick	12,672 0 0		
T. D. Leng	12,654 0 0		
Patman & Fotheringham, Ltd.	12,651 0 0		
G. Godson & Sons	12,639 0 0		
Treasure & Son, Ltd.	12,630 0 0		
E. Triggs	12,348 0 0		
McCormick & Sons, Ltd., Northampton-street, Essex-road*	11,842 0 0		

LONDON.—For heating, Cow-lane, Rotherhithe, for the London County Council:—

Stevens & Sons	£673	Cannon & Hefford	£559
Moorwood, Sons, & Co., Ltd.	609	J. Yetton & Co.	549
J. Grundy	597	W. G. Cannon & Sons, Ltd.	477
J. Gray	570	Wenham & Waters, Ltd., Croydon*	371
R. H. & J. Pearson, Ltd.	564		

[The estimate of the Architect (Education), comparable with the tenders, is £575.]

LONDON.—For heating, Hitherfield-road, Wandsworth, for the London County Council:—

Stevens & Sons	£412 0 0
Korting Bros., Ltd.	375 0 0
Wontner-Smith, Gray, & Co.	374 17 6
Pemberton, Arber, & Carey	350 0 0
Hayward Bros. & Eckstein, Ltd.	349 10 0
J. & F. May	330 0 0
Palowkar & Sons	328 0 0
Cannon & Hefford	327 0 0
H. J. Cash & Co., Ltd.	325 0 0
J. Gray	325 0 0
J. Yetton & Co., Ltd.	320 0 0
Brightside Foundry & Engineering Co., Ltd.	309 0 0
Wenham & Waters, Ltd.	288 0 0
W. G. Cannon & Sons, Ltd., 107, London-road*	287 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £333.]

LONDON.—For heating, Adys-road, Dulwich, for the London County Council:—

Shelby Manufacturing Co.	£386 10 0
Stevens & Sons	374 0 0
W. G. Cannon & Sons, Ltd.	360 0 0
Comyn Ching & Co., Ltd.	347 0 0
Cannon & Hefford	334 0 0
Moorwood Sons, & Co., Ltd.	330 0 0
Brightside Foundry & Engineering Co., Ltd.	313 10 0
Strong & Collings, Ltd.	297 10 0
Wenham & Waters, Ltd., Croydon*	289 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £325.]

LONDON.—For heating (Battersea—The "Latchmere"; Bethnal Green, N.E.—Cranbrook-road), for the London County Council:—

The "Latchmere."—Providing additional Heating Surface.

J. F. Phillips & Son	£169 0 0
Davis, Bennett, & Co.	143 0 0
Strong & Collings, Ltd.	135 10 3
Palowkar & Sons	134 0 0
Cannon & Hefford	129 0 0
H. J. Cash & Co., Ltd.	127 10 0
W. G. Cannon & Sons, Ltd.	121 10 0
Wenham & Waters, Ltd., Croydon*	107 0 0

Cranbrook-road.—Providing and Fixing a new Boiler.

W. Simmons	£213 4 0
J. F. Phillips & Son	197 0 0
J. Yetton & Co., Ltd.	155 0 0
J. Grundy	149 10 0
Wontner-Smith, Gray, & Co.	142 18 0
G. & E. Bradley	133 10 0
Tilley Bros.	132 10 0
Wenham & Waters, Ltd., Croydon*	129 0 0

LONDON.—For heating, London County Council Technical Institute and County Secondary school, Paddington:—

F. W. Brock	£257 0 0
R. H. & J. Pearson, Ltd.	219 0 0
Palowkar & Sons	216 10 0
H. J. Cash & Co., Ltd.	215 0 0
W. G. Cannon & Sons, Ltd.	215 0 0
Cannon & Hefford	213 0 0
G. & E. Bradley	211 0 0
J. Yetton & Co., Ltd.	210 0 0
Brightside Foundry and Engineering Co., Ltd., Victoria-street, Westminster*	197 10 0

[The estimate of the Architect (Education), comparable with the tenders, is £218.]

LONDON.—For heating (Buxton-street, Whitechapel), for the London County Council:—

Stevens & Sons	£663 0	Tilley Bros.	£541 10
J. Wontner-Smith, Gray, & Co.	630 0	J. C. Christie	532 10
J. & F. May	600 0	W. G. Cannon & Sons, Ltd.	532 0
J. Grundy	587 0	Brightside Foundry & Engineering Co., Ltd.	515 0
A. Macintosh & Sons, Ltd.	581 10	W. J. Burroughes & Sons, 143, Queen Victoria-street*	502 0
J. Yetton & Co., Ltd.	575 0		
Cannon & Hefford	566 0		
Palowkar & Sons	542 0		

[The estimate of the Architect (Education) comparable with the Tenders is £570.]

LONDON.—For repair of river wall, Abbey-mills pumping-station, for the London County Council:—

J. Mowlem & Co., Ltd. £300

LONDON.—For finishing of carriageways and footways on Tower gardens, section White Hart-lane, for the London County Council:—

Rowley Bros.	£6,137 0 0
T. W. Pedrette	5,916 18 8
F. J. Coxhead	5,687 0 0
Grounds & Newton	5,507 17 4
E. T. Bloomfield	5,115 12 0
E. J. Knifton, Edmonton*	4,838 14 8

[The Architect's estimate, comparable with the tenders, is £5,500.]

LONDON.—For (*a*) kerbing and channelling roadways, (*b*) paving footpaths of part of Newlands Park, Sydenham, for Lewisham Borough Council. Mr. Ernest van Putten, Surveyor. Quantities by Surveyor:—

W. Pearce, Forest Hill,* (*a*) £76, (*b*) 3s. 1d. yard super.; Mowlem & Co., Ltd., Westminster, (*a*) £79; Woodham & Sons, Catford, (*a*) £79; Fry Bros., Greenwich, (*a*) £94; Atlas Stone Co., Ltd., Cambridge, (*b*) 3s. 9d. yard super.; Brookes, Ltd., Halifax, 2½-in. Perfecta, (*b*) 5s. 4½d. yard super.; 2-in. Shap adamant, (*b*) 4s. 8d. yard super.; 2-in. Shap pink pressed flags, (*b*) 4s. 11d. yard super.

LONDON.—For installing low-pressure heating apparatus at St. James's Church, Clerkenwell, E.C., for the churchwardens and trustees:—

E. E. Logsdon, 15, Little James-street, W.C.* £211 10

LONDON.—For painting and repairing work at the Mead Ambulance Station, Carnwath-road, Fulham, S.W., for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.Inst.C.E., Engineer-in-Chief:—

Jarman & Co.	£889 0	D. T. Bostel & Sons	£355 0
Swan Bros.	725 0	J. S. Fenn	344 0
G. Eyles	708 0	L. Kazak	342 0
W. Hussey	498 0	Bridge, Barrett, & Co., Ltd.	306 0
C. H. Boyd	472 0	A. H. Inns	298 0
Barnett & Brotchie	470 0	Vigor & Co.	285 0
J. M'Kenzie	465 0	T. Brown & Son	270 0
E. Lawrance & Sons	445 0	S. T. Wright	257 5
H. U. Adams	443 0	E. Newbery, Albany-road, New Malden, Surrey*	247 0
T. E. Wright	425 0	B. Jewell‡	232 0
A. Roberts & Co., Ltd.	410 0	S. Squire	210 10
Warburton & Son	385 0		
Campbell & Christmas	378 0		

‡ Subsequently amended to £332.

LONDON.—For repairs and redecking of Billingsgate Market Pontoons, opposite Custom House Quay, for the Corporation:—

J. Cochrane & Sons	£398	J. Mowlem & Co.*	£183
G. Munday & Sons	378		

LONDON.—Paving of roadway of Dreyton-gardens, for the Kensington Borough Council:—

Road Paving and Cement Co., Ltd. £537 10

LONDON.—For rebuilding the retaining wall in Brookbank-road, Lewisham, for Lewisham Borough Council. Mr. Ernest van Putten, Surveyor. Quantities by Surveyor:—

Woodham & Sons	£305	W. Pearce, Forest Hill*	£267
Fry Bros.	296		

LONDON.—For the construction of isolation rooms at the Eastern Fever Hospital, Homerton, N.E., for the Metropolitan Asylums Board. Messrs. T. W. Aldwinckle & Son, architects, 20, Denman-street, London Bridge, S.E.:—

	Isolation Rooms.		Repainting.	
Pasterfield & English	£2,498 0 0		£64	0 0
Johnson & Co.	2,219 0 0		93	0 0
J. W. Jerram	2,150 0 0		120	0 0
B. E. Nightingale	2,180 0 0		85	0 0
E. Brown & Son, Ltd.	2,167 10 0		81	0 0
W. Reason	2,099 0 0		129	0 0
W. Johnson & Co., Ltd.	2,098 0 0		84	0 0
A. Roberts & Co., Ltd.	2,100 0 0		75	0 0
Hammond & Miles	2,045 18 7		112	16 3
J. Willmott & Sons	2,057 0 0		91	17 6
R. Marrable	1,987 14 7		104	0 9
W. J. Fryer & Co.	1,975 0 0		95	0 0
F. Webster & Son	1,987 0 0		60	0 0
R. Woollaston & Co.	1,931 17 0		69	0 0
F. & G. Foster, Camden Works, Norwood Junction*	1,882 0 0		59	0 0

MERTON.—For road making and sewering works in Cannon Hill-lane, for the Urban District Council. Mr. G. Jerram, Surveyor, Council Offices, Merton:—

	With Flint Surface to Carriageway.	With Granite.
S. Lane & Co.	£990	£1,070
E. & E. Iles	957	1,056
G. Bell & Sons	879	960
J. Mowlem & Co., Westminster*	824	*900

MIDDLESEX.—For additions to Napsbury Asylum, for the County Council. Mr. Rowland Plumbe, architect, 13, Fitzroy-square, W.:—

H. J. Williams, Ltd.	£71,300 0 0
J. Allen & Sons, Ltd.	70,070 0 0
Dick, Kerr. & Co., Ltd.	68,469 3 6
Higgs & Hill, Ltd.	68,244 0 0
Holland & Hannen	66,750 0 0
J. Carmichael	66,100 0 0
C. Wall, Ltd.	65,000 0 0
Chessum & Sons	64,760 0 0
J. Greenwood, Ltd.	64,450 0 0
Pethick Bros., Ltd.	63,266 0 0
Waring & White, Ltd.	63,041 0 0
Mowlem & Co., Ltd.	62,913 0 0
Holloway Bros., Ltd.	62,600 0 0
Perry & Co., Ltd.	61,975 0 0
Pattison & Son, Ltd.	61,120 0 0
F. G. Minter	61,000 0 0
H. Lovatt, Ltd.	60,915 0 0
Spencer, Santo, & Co., Ltd.	60,760 0 0
Leslie & Co., Ltd.	60,358 0 0
Foster & Dicksee, Ltd.	59,859 0 0
G. E. Wallis & Sons, Ltd.	58,276 0 0
W. Johnson & Co.	57,750 0 0
W. Lawrence & Son, Moselle Works, Tottenham, N.†	56,948 0 0

[Architect's estimate, £62,004.]

MILLBROOK.—For restoration of old church, for the Rev. G. G. Elton. Mr. B. D. Cancellor, architect, 12, Jewry-street, Winchester:—

G. Harris	£435 6 8	W. Buck, jun.	£235 0 0
J. Thompson & Co.	418 0 0	D. J. Crook, Millbrook, Southampton*	225 0 0
Jenkins & Sons	305 0 0	Exors. of W. Franklin	215 0 0
J. Saunders & Co.	285 14 7		
C. Barter	273 0 0		
Coston & Co.	259 0 0		

RASTRICK.—For additions and alterations to Rastrick Grammar School. Messrs. Stocks & Sykes, architects, St. Peter's-street, Huddersfield:—

Mason: J. Bottomley, Brighouse	£624 0 0
Joiners: T. Bottomley & Sons, Brighouse	570 0 0
Plumber: G. H. Sykes, Brighouse	338 6 0
Slater: J. Smithies, Brighouse	91 10 0
Plasterer: W. Walker, Brighouse	91 0 0
Painters: F. Roebuck & Son, Brighouse	71 0 0
Concreting: J. E. Dyson, Huddersfield	226 12 8
Heating: G. H. Sykes, Brighouse	131 0 0

Digitized by Google

WEARDALE.—For construction of new road from Eastgate to Rookhope, for the Rural District Council. Mr. G. W. Eggleston, Highway Surveyor, Board Room of the Guardians, Stanhope:—

—	Section No. 1.	Section No. 2.	Total.
	£ s. d.	£ s. d.	£ s. d.
J. W. Henderson	1,589 10 4	2,102 9 2	3,691 19 6
J. W. White	2,195 0 0	2,955 0 0	5,150 0 0
C. Bushby & Sons	2,600 0 0	2,500 0 0	5,100 0 0
J. Coulthard & Sons	1,873 10 0	2,342 5 0	4,215 15 0
F. Sowerby	1,693 3 0	2,986 8 6	4,679 11 6
J. J. Reed	1,673 7 9	2,088 15 9	3,762 3 6
C. S. Bunch	1,895 0 10	2,428 0 1	4,323 0 11
J. W. Robson	2,034 0 2	2,406 2 10	4,440 3 0
M. D. Young	1,625 3 0	1,930 9 0	3,555 12 0
G. E. Simpson	2,045 4 10	2,753 0 5	4,798 5 3
J. Grey	2,020 0 0	—	—
E. Peart	1,688 0 0	2,090 0 0	3,778 0 0
R. Nicol, Gosforth, Newcastle-on-Tyne*	1,236 0 0	1,666 0 0	2,902 0 0

PONTARDAWE.—For sewerage and sewage disposal works at Clydach-on-Tawe, for Pontardawe Rural District Council. Mr. J. Morgan, Engineer, Pontardawe:—

W. G. Jones & Co	£15,968 5 10
D. Jenkins, Ltd.	15,688 13 3
A. E. Nunn & Co., Ltd	13,947 5 10
W. J. Griffiths	13,742 18 2
J. Mackay	13,700 0 0
G. L. Morgan	13,437 17 5
H. V. Smith	13,176 9 5
W. H. Taylor & Sons	12,871 13 4
J. & T. Binns	12,725 13 11
O. Wright & Co	12,320 18 4
Walters & Johns	12,294 7 5
W. & T. R. Watson, Ltd	11,579 7 5
Johnson Bros.	11,370 0 1
Barnes, Chaplin, & Co	10,928 19 10
T. Walker, Clydach*	10,285 16 9

ROYDON (Essex).—For repairs and renovations to Council school, for Essex Education Committee. Mr. F. Whitmore, Architect, Chelmsford:—

W. S. Carse	£96 11 0	J. Oram & Son	£77 10 0
L. Lown & Co.	92 0 0	W. Barrack, Roydon*	75 18 6
H. Coleman & Co.	81 0 0	J. A. Hunt	75 17 0
J. Jenkins	78 10 0		
J. Newton & Sons	77 13 0		

SCARTHO.—For erecting an elementary school, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln:—

W. Hill	£1,430 0 0	Hewins & Goodhand	£1,145 0 0
Wright & Son	1,258 10 0	Hollingsworth Bros.	1,125 12 0
Mawer Bros.	1,217 8 0	W. Kirton	1,124 16 7
H. Marrows	1,212 0 0	F. T. Salmon & Co., Cudworth, Barnsley*	1,079 0 0
H. & E. Smith	1,179 0 0		
J. G. Allison	1,154 6 3		
Holmes & Richardson	1,149 10 0		

THOMASTOWN AND COED ELY.—For laying and jointing about 530 lin. yds. of 4-in. and 3-in. cast-iron water mains at Thomastown and Coed Ely, and about 700 lin. yds. of 4-in diameter cast-iron water main between Llantrisant and Cross Inn, for the Llantrisant and Llantwit Fardre Rural District Council. Mr. Gomer S. Morgan, Surveyor, School-street, Pontyclun:—

Smith & Jones	£233 13 0	J. Sutherland	£97 15 8
Johnson Bros.	179 2 9	John & Est.	91 11 9
R. Webb	137 6 0	H. Murray	89 19 2
Hammond & Co.	128 15 0	Barnes, Chaplin, & Co	87 2 6
Davies & Co.	127 17 6	G. L. Morgan	85 9 0
T. Taylor	119 15 6	W. Brown, Merthyr*	74 14 1
T. Lewis	116 17 0	W. Jenkins	40 7 11
R. Pomeroy & Co.	114 19 0		
D. Jones	102 15 0		

THREE BRIDGES (Sussex).—For rebuilding the "Plough Inn." Mr. C. H. Burstow, architect, 6, West-street, Horsham. Quantities by architect:—

T. Webber	£1,536 0 0
G. Potter	1,513 0 0
H. Baker & Son	1,485 0 0
Hillman & Murrell	1,468 8 9
Murrell Bros.	1,461 6 4
A. Peskett & Co.	1,459 0 0
Rowland Bros.	1,449 0 0
W. Potter	1,425 0 0
W. H. Simmonds	1,419 1 7
W. Arthur	1,413 17 4
C. W. Peters	1,391 0 0
J. Ockenden & Son	1,345 0 0
Bartley & Ward	1,289 0 0
R. Cook & Sons, Crawley*	1,250 0 0

TONYREFAIL.—For providing, laying, and jointing about 320 lin. yds. of 6-in. diameter stoneware pipe sewers, together with manholes, ventilating columns, and other appurtenant works, for the sewerage of Llantrisant-road, Tonyrefail, for Llantrisant and Llantwit Fardre Rural District Council. Mr. Gower S. Morgan, Surveyor, School-street, Pontyclun:—

Smith & Jones	£190 16 2	J. Sutherland	£136 13 0
Davies & Co.	171 12 7	John & Est.	134 10 8
L. Evans	159 5 9	Barnes, Chaplin, & Co.	131 9 5
R. Webb	156 15 4	H. Murray	129 3 5
T. Taylor	150 14 4	W. Brown	121 19 7
T. Lewis	149 1 10	W. Haimes, Pontyclun*	116 14 9
R. Pomeroy & Co.	141 17 10	W. Jenkins	99 10 2
G. L. Morgan	138 0 1		
J. Habukkuk	136 15 2		

TOTTENHAM.—For the erection of a new disinfector-house at the North Eastern Fever Hospital, St. Ann's-road, Tottenham, N., for the Metropolitan Asylums Board. Mr. W. T. Hatch, M.Inst.C.E., Engineer-in-Chief:—

J. Smith & Sons (Norwood), Ltd.	£547 0	E. Wall	£315 0
E. Lawrance & Sons	375 0	F. Pike	312 0
R. Goodman & Sons	367 0	Bridge, Barrett, & Co., Ltd.	308 0
J. Steward	349 17	G. Eyles	297 0
L. Kazak	328 0	W. H. Hyde & Co.	275 0
W. J. Fryer & Co.	327 0	J. Oram & Son, Waltham Abbey*	274 10
B. Jewell	322 0		
Gardner & Hazell	317 0		

TREHERBERT.—For water supply works, for Llanybyther Rural District Council. Mr. Joshua Evans, engineer, The Mills, Llanybyther:—

D. Rogers, 124, Lammas-street, Carmarthen† £329 11 5

† The tender was accepted subject to the Council obtaining the sanction of the Local Government Board to borrow the required sum.

J. J. ETRIDGE, Jr.

LTD.,

SLATE MERCHANT,

SLATER & TILER.

Penrhyn-Bangor,
Oakeley-Portmadoc.

BEST WORK ONLY.

Hand-made Broseley Tiles in Three Shades.

Applications for Prices, etc., to

BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited
(incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PROCESS BLOCK MAKERS
of all descriptions.
4 & 5, East Harding-street, Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS,
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

OGILVIE & CO., Telephone: DALSTON 128
Many years connected with the late firm of W. E. LASCELLES & CO., LTD., of Bunhill Row.
Amhurst Works, **DALSTON LANE, N.E.**
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.

The best materials and workmanship are supplied by
THE
French Asphalte Co.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company.
5, LAURENCE POUNTNEY HILL, CANNON STREET, E.C.

ALSO AT DEPTFORD, LIVERPOOL, BRISTOL,

GLASGOW, FALKIRK, BELFAST, & DUBLIN.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3483. NOVEMBER 6, 1909.

Contents.

	PAGE
The Published Plans of St. Peter's, Rome ..	481
The Housing and Town-Planning Bill	482
The Chancellor of the Exchequer and the Building Trade.....	483
Notes	483
The Royal Institute of British Architects ..	486
Architects' Technical Bureau.....	490
Picture Exhibitions.....	490
The London County Council	490
Applications under the London Building Acts, 1894 to 1908	492
Architectural Societies.....	492
Legal Column	492
Engineering Societies.....	494
Belgian Glass and Cement	494
Institute of Sanitary Engineers, Ltd.	494
Lyons Public Works	495
London County Council Education Committee	495
Meetings	496
Fifty Years Ago	496
Illustrations:—	
Portrait of Dr. Arthur Evans	496
The Ponte Nomentano, Rome	496
Staircase Hall and Billiard-room, Silverlands, Chertsey.....	496
S. Edward's Church and Parsonage, Lugano, Switzerland	497
St. Margaret Clergy House, Aberdeen	497
Competition News.....	497
Trade Catalogues.....	497
Books Received.....	498
Correspondence:—	
Shoolbred *v.* Wyles.....	498
Dry Rot in Buildings.....	498
Hollow Walls Conveying Sound	498
Westminster City Council.....	498
Middlesex County Council	499
London and District Borough Councils	499
Master Builders' Associations, etc.....	499
Projected New Buildings in the Provinces ..	499
Builders' Information Centre	500
Obituary	500
General Building News.....	500
Stained Glass and Decoration	502
Sanitary and Engineering News	502
Miscellaneous	503
Law Reports:—	
What is a "Builder"?	505
Action by Builders and Contractors	505
Claim by a Bricklayer	505
Brickbats.....	505
Capital and Labour.....	505
List of Competitions, Contracts, etc., Open ..	506
Patents	508
Some Recent Sales	509
Prices Current.....	510
Tenders	511

Illustrations.

Portrait of Dr. Arthur Evans, Institute Gold Medallist.

Ponte Nomentano, near Rome. From a Drawing by Mr. J. Tavenor-Perry.

Hall and Staircase, Silverlands, Chertsey: Billiard-room, Silverlands. Mr. Ronald P. Jones, Architect.

Church and Parsonage, Lugano. Mr. Geo Jeffery, Architect.

Illustration in Text. PAGE

The Guildhall Entrance Front as it would appear with Dance's Eastern Screen Reinstated 485

The Published Plans of St. Peter's, Rome.

ALTHOUGH it was known from the first that there was some deflexion from the axis of the dome and western portion of the building of St. Peter's, in that of the nave which Carlo Maderno added to it, the fact has not been recognised so generally as might have been expected, while it has been practically ignored in all the principal plans of the edifice which have been published. Hence it is that many architects are quite unaware of the existence of so serious a defect in the symmetrical arrangement of the building; but to those who have made a study of it on the spot the defect is most obvious. The fault, for in a structure of this character it can be described as nothing else, has been pointed out in text-books or referred to by those who have visited Rome; but their statements have been received with a certain amount of incredulity in the face of the fact that all the recognised standard plans, some drawn to a large scale, show the building to be in one straight line from porch to apse.

Apart from the evidence of eye-witnesses to the imperfection, we have the record of Carlo Fontana's observations in his work, "Il Tempio Vaticano," published in Rome in 1694, wherein he devotes a chapter to describing the "error," as he is pleased to term it, and the circumstances which he considers may have caused it, together with rules for the avoidance of such mistakes in future. Besides this, there is the statement in Wyatt Papworth's edition of Gwilt's "Encylopædia of Architecture," to the effect that the part which Maderno added inclines above 3 ft.; and the late Mr. Penrose, in his Notes on St. Paul's in the *Transactions* of the Institute, 1878-1879, speaks of the inclination as small but very perceptible.

Of the several Italian plans of St. Peter's made during the century in which it was completed, the principal are perhaps those by Gio. Battista Costaguti in his "Architettura della Basilica di S. Pietro in Vaticano," published in Rome in 1684, and that by Carlo Fontana in the work already mentioned. Neither of these bears any indication in the drawing of the deflexion, or has any figured dimensions, but they are to a scale sufficiently large to have shown the defect, the scale of the former being one to 784, and the latter one to 670. The two most important French plans are one published in Paris in 1763 by Gabriel-Martin Dumont in his "Details des plus Intéressantes parties d'architecture de la Basilique de S. Pierre," which has no scale, although the principal dimensions are figured; and the other the plan published by Letarouilly in his book, "Le Vatican et la basilique de S. Pierre," which is drawn to the very respectable scale of one to 500. This great work of Letarouilly's, which is perhaps more used than any other by students engaged in the study of the architecture of St. Peter's, omits altogether to show on the plan any sign of the deflexion; and, on the contrary, by carefully figured dimensions of the several parts along the north and south faces of the nave, measured in millimètres, the sum of which, 95,402, from the east wall to the dome, being exactly the same on both sides, would seem to demonstrate the impossibility of the existence of any such defect.

The plan given by Baron Geymüller on Plate 45 of his work, "Les projets primitifs pour la Basilique de Saint Pierre de Rome," which is to about the same scale as Letarouilly's, gives no indication of the defect; but this may perhaps be excused, as the plan is rather in the nature of a diagram coloured to show the work of the various architects engaged upon the fabric. The principal English plan is perhaps the one given in Fergussson's "History of the Modern Styles of Architecture," to the small scale of one to 1,200. This plan not only omits all reference to the deflexion, but seems to adopt another error in making the distance of the piers supporting the dome less from north to south than from east to west, and less than the diameter of the dome above. Whence this error, if it be one, was derived is uncertain, as the authority for the plan is not given; but it has been followed in the *Transactions* of the Institute, Vol. V., New Series, Plate 63, in illustrating an essay on "Five Famous Domes," by Mr. Percy Scott Worthington.

As to the exact nature and extent of the defect, there is some indefiniteness in the descriptions. Gwilt says the inclination is more than 3 ft. to the north, north being obviously intended for south, a sort of mistake commonly made by English writers in describing Roman churches by the points of the compass. Fontana says that the axial line bends *molti palmi* towards the south, but gives no accurate dimension, and Mr. Penrose merely mentions St. Peter's among other churches having a nave leaning towards the south. But a review of the circumstances under which such an "error" occurred is necessary to understand the matter; and this may perhaps lead to the conclusion that Maderno, who has enough to bear without being charged with such a flagrant blunder in setting out his building, was compelled to adopt the course he did, and made the deflexion with his eyes open to the effect it was bound to produce.

Fontana, in apologising for the imaginary mistakes of Maderno, suggests that he may have been considerably bothered

Digitized by Google

by the walls and foundations still standing of the hastily-destroyed ancient nave, and contrasts his want of care with Bernini's success in accurately setting out his great curved colonnades in equally broken ground. But he forgets to mention the great brick wall which was built across the middle of the old basilica before the apse and transepts were pulled down, and which stood there for over a hundred years, until after Maderno's work was completed, and must have added considerably to the difficulties of correctly joining on the new nave and aisles to the dome and chapels already completed. This wall was only removed in 1615, and the church opened out its full length on Palm Sunday in that year; but a considerable amount of making good at the point of junction must even then have remained to be finished. The confusion this wall caused, although the deflexion of the nave need not be attributed to it, shows very well in the opening of the north aisle on the line of junction between the chapels del Sagramento and Gregoriana, where the pilasters and arch over have had to be set considerably askew, a very noticeable peculiarity quite omitted from all the plans.

The original cause of the defect may perhaps be traced to the very earliest period in the history of the basilica for, as Professor Lanciani points out in his "Pagan and Christian Rome," Constantine's architect was somewhat negligent in setting out his work, with the result that the tomb of S. Peter was left "some inches" to the left or south side of the axis of the apse. This uncentral position is shown in the plan published in Fontana's work, and in one engraved in 1673 by Gio. Battista Falda, published in the "Descritione fatta della chiesa antica e moderna di S. Pietro," by Carlo Padre Dio, and judging by the scale of these drawings the distance from the centre was about three palms, or 26 in. On the other hand, Ciampini places the Confession quite in the centre, and Costaguti rather to the north; but the weight of evidence is in favour of Professor Lanciani's statement. There can be no doubt that the tomb remains exactly on the same spot it has always occupied since the date of the first historical or traditional notice of it, and it would appear equally certain that it stands now central to the steps leading to the Confession, as shown on a detailed plan, published by Professor Lanciani, made by Benedetto Drei, master mason to Pope Paul V.; and as this stands central to the north and south piers of the dome it seems to suggest that the axis of the western portion of the church was altered when Bramante commenced his work.

When Rossellini started his rebuilding to the westward of the ancient basilica none of that was then interfered with, as the old apse and transepts were only removed fifty years afterwards by Julius II.; and as Rossellini's apse was destroyed at the same time, we cannot be sure of its exact position, although Baron Geymüller shows it a little to the east of the existing one, and exactly of the same width and on the same axis line. But after the screen wall had been built across the nave of the old basilica everything to the westward of it was cleared away, and the new building was set out with the idea of making the dome the great canopy over the Apostle's tomb, and therefore it is most improbable that care was not taken to make it exactly central to the Confession. Besides this, the whole site being cleared of the old buildings, the architect had nothing to guide him in setting out his new work but the position of the tomb and the raw end of the old basilica nave, showing against the temporary brick screen, and it would seem probable that a line drawn from the centre of the old nave through the centre of the Confession formed the axial line for the new building.

When Maderno started to erect his new nave, although the division wall was still standing, he might undoubtedly with but little difficulty have prolonged Bramante's axial line through it, and made his work central to that, but he had to deal with another difficulty of which Fontana in his criticism makes no mention. Before the old nave was destroyed, and when there was no intention of rebuilding it, San Gallo had erected for Paul III. the Sala Regia and its extension the Capella Paolina, which closely abutted on the old north wall, and which now stand in the angle of the building behind the northern projection of the narthex. This, and his difficulties with the foundations on the south side, had very considerably reduced the possible width of his building towards the east, and to have slewed it round to the north so as to continue Bramante's axial line would have involved a further reduction of some 6 ft. or 7 ft. Under these circumstances Maderno may have considered that the course which he adopted was the lesser of two evils; and he may have trusted that the slight deflexion, which only amounts to between one and two degrees, would have been imperceptible. Perhaps at first this was the case, as we have no record of any adverse criticism following the opening out of the building; and perhaps the defect only became noticeable after Bernini had erected his great Baldacchino and the shrine for the Cathedra in the apse beyond.

Whether Maderno's eastern extension is erected exactly parallel to the old nave, as it is generally shown to be on those plans which give the outlines of the two churches, is uncertain, but could be ascertained by careful measurements to some portions of the Vatican buildings known to have been erected before the old nave was destroyed; but neither this question nor that of the extent of the deflexion can be determined until an accurate plan of the edifice has been made. In measuring a Gothic church the most minute dimensions are taken and the greatest care given to obtain by triangulation measurements exactly the extent of any deviation from the straight line, evident or latent; but in dealing with a Renaissance or Italian building the symmetrical arrangement of its parts is too often assumed, and a few leading dimensions are considered to be sufficient. This has been to a great extent the case with S. Peter's; but its spaces are so vast and its distances so great that it wants dealing with like a piece of open unknown country, and should be plotted by a surveyor with his theodolite.

THE HOUSING AND TOWN-PLANNING BILL.

THE history of the progress of the Housing and Town-Planning Bill through the two chambers might afford Sir W. Gilbert the suggestion for a good bit of musical comedy. In the House of Commons everything has made towards supporting the position and authority of the Local Government Board. When the Bill goes to what is euphemistically referred to as "another place" the tendency is all the other way; the Local Government Board is deposed from its "bad eminence," and County and District Courts are exalted above its head. Then the Bill comes back to the Commons and all this work is undone and the District Councils and County Courts are swept on one side again, and the authority of the Local Government restored. Over and over again we find the same proposals to omit the words "the County Court" or "the District Council" which had been inserted by the Lords, and leave the Local Government Board the sole and final authority. And though there were many speeches in opposition to this centralisation of the authority, it is noticeable that none of the speakers raised any objection to the Board under its present Head; "the President of the Local Government Board," said one speaker, "was not going to live for ever, and what guarantee was there that his successor would be equipped with the facility, impartiality, and common sense of the right hon. gentleman?" That we shall not easily find another Mr. John Burns we fully admit, but a high tradition will have been established in the Department, and we must hope that it will be carried on.

What is quite certain is that if anything is really to be done, within a reasonable time, in the way of improvements in housing and town-planning, it will be best and most quickly done under the ægis of a central authority, and that provisions for appeal to County Courts and District Councils will mean the provision of so many excuses for delay and loopholes for evasion. To put the matter in Mr. Burns's own words:—

"What other alternative was there to the central department for securing that a local authority should act fairly and that owners should be properly treated? If some local authorities were to be saved from land speculation, the action of a strong central department was needed. This plan had been adopted in Germany, and was being attempted in America, and he wanted England to have the honour and distinction of being the first to attempt to give town-planning schemes a reasonable legislative shape."

This appeal elicited a vote of 145 to 29 "for disagreeing with the Lords' amendment," and leaving the approval of a scheme by the Local Government Board to have the effect of an Act of Parliament, thereby introducing as little machinery as possible between the inception of an improvement scheme and its realisation.

We have not space of course to follow in detail the long debate of Monday night; but after noting that the general result was to re-affirm and establish the authority of the Local Government Board, there are one or two other points that call for special remark. One is in regard to back-to-back houses, which, as we mentioned on a former article, the House of Lords had taken under its

Digitized by Google

protection, for reasons which we totally fail to understand; the charitable conclusion is that it was the result of ignorance, coupled possibly with appeals made to them by owners of house property of that description. On the motion to disagree with the Lords on this point, several members attempted to make a case for back-to-back houses, but the only argument (except mere assertions as to their innocuous character) seemed to be that as Leeds had somehow acquired by-laws admitting back-to-back houses, which the Bill did not touch, it was illogical to condemn them elsewhere. We will quote part of Mr. Burns's effective and spirited reply:—

"There had never been a reformer interested in housing for the poorest of the working classes who had not found that wherever back-to-back houses prevailed insanitation, fever, disease, and anæmia followed in their track. As against one authority who asked to be allowed to build these houses, all others, all Government departments, and all medical officers of health that he knew were against them. The Local Government Board inspectors were unanimous. The Leeds Trades Council, members of which lived in these houses, unanimously passed a resolution asking him to ignore the representations of property owners, and to have nothing to do with such houses. Dr. Niven had shown that in districts with no back-to-back houses deaths from all causes were 27·5, as against 38 in those with back-to-back houses; for infectious disease the difference between districts with and without these houses was the difference between 4·5 and 8·7 per 1,000, for consumption between 2·8 and 5·2, and for death from diarrhœa among children between 1·4 and 3·4. It was the general experience that these houses were bad. They might be acceptable when they were new and were occupied by newly-married couples, but an entirely different situation was created when there were several children, and infantile mortality was much greater in back-to-back houses."

Result—the House of Lords and back-to-back houses condemned; and we hope we shall hear no more of the latter.

The other point to which we may refer is in regard to the provision that a medical officer of a county should not be removable by the County Council without the consent of the Local Government Board; a provision which the Lords had struck out of the Bill. As to the great necessity of such an independent protection to the medical officer, who often has to report against insanitary property which is owned by some of his employers (or perhaps knows that he ought to report, and dare not), we have already spoken. Mr. Burns moved the re-insertion of the clause; the usual arguments (if they can be called such) were used by several speakers, to the effect that it was "an unreasonable restriction on the control of a council over its officers," but everyone who knows the facts knows that is a necessary one, and the clause was re-inserted by a majority of 75 to 23.

As the Bill now stands a great deal of its efficiency, which had been weakened by the Lords' amendments, has been restored to it. Whether it will be passed in its present shape, and when, time must show.

FREE LIBRARY, TREHARRIS.—A new free library has been put up at Treharris by the Merthyr County Borough Council. The main elevation is faced with Edwards's Ruabon red bricks, with dressings in St. Aldhelms' box ground Bath stone. The whole of the sculptural carving has been executed by Mr. Frank Ekers, of Newport. The general contractors were Messrs. Jones Brothers, of Treharris, and the inclusive cost is 2,470*l*. The designs were prepared by Mr. William Dowdeswell, architect, Treharris, and were selected in competition.

THE CHANCELLOR OF THE EXCHEQUER AND THE BUILDING TRADE.

THE letter of the Chancellor of the Exchequer to Mr. Percy Alden on an example of the incidence of increment value duty on building land, given in a pamphlet written by Mr. Edwin Evans, will hardly serve to reassure builders to the extent Mr. Lloyd George appears to imagine, if indeed it does so at all. Mr. Evans may or may not have given an unfortunate imaginary example in figures, but the answer to that depends to some extent upon when the pamphlet appeared, as the Finance Bill has been so constantly amended that what was true of its provisions one day ceased to have any application the next day. From a letter written to the *Times* by Mr. Evans on October 29 it appears that the example in question was sent to the Chancellor of the Exchequer in mid-July, whereas the Chancellor's criticism is dated October 28, and he brings to bear the amendments introduced in the Bill up to that date.

Even then, what is the effect of Mr. Lloyd George's answer? It shows clearly that with all the amendments introduced in the Bill a troublesome and expensive inquiry is forced upon the builder in regard to each transaction, in which he will be forced to show to the satisfaction of the Commissioners how far any increase in value is attributable to works executed by himself, and in which he will be compelled to bow to the opinion of the taxing authority as to what extent any increase in value upon an originally hypothetical value is due to his own enterprise or to that unknown quantity, "unearned increment." Mr. Cripps, in a letter to the *Times* of October 30, points out that it is the business of a builder as a trader to select land of improving character, to which there would be an increment value. This is the really important point—the builder can only develop that for which there is a demand; it is not sufficient to make him take up a speculation to earn, say, interest of 5 per cent.; his business capacity enables him to foresee a demand and to supply it, and the Government now calls that demand the "action of the community," and forfeits 20 per cent. of the legitimate profit and takes some credit for allowing the builder to deduct a portion of his actual outlay before estimating what it calls "increment." In this connexion it may be observed that the 10 per cent. allowance has to cover all incidental expenses, such as law costs, commissions, etc., and such an allowance is inadequate.

If a site has to be held until there is a demand, then the builder has to pay undeveloped land duty, an annual charge on capital not then productive, whilst the tax on reversions discourages the leasehold system and renders it more difficult to raise capital.

It is an extraordinary argument that the taxation of the raw material, undeveloped land, will tend to bring it into the market at a lower price and encourage development. On the contrary, the land will be held, but the cumulative tax will be added to its price and laid upon the purchaser.

Mr. Lloyd George's letter is entirely confined to a few imaginary figures, which he with difficulty uses to explain away the effect of one tax only, and he ignores the important point that whilst a profitable transaction is taxed no allowance is made in respect of unprofitable transactions entered into by the same person, and also the incidence of the other taxes. What could be more significant than the concluding sentence of Mr. Lloyd George's letter? He says—

"Unless the bare value of the land as land and apart from anything done to it in the meantime had risen while the house was being constructed, he would not be taxed at all."

What other raw material could be taxed on this basis? If it rises in value, is a portion to be forfeited to the State? Such a theory would in practice extinguish trade and private enterprise. The facts that all the building trade, and the surveyors as a profession, are opposed to the proposals contained in the Finance Bill, that trade and enterprise in this industry is at a standstill, and that unemployment is rife amongst those who depend upon the trade for their livelihood, are rather more eloquent than the manipulation by an empirical Chancellor of the Exchequer of a few figures not based an any actual transaction.

NOTES.

The Canals Commission.

ANOTHER volume of the Report of the Royal Commission on Canals and Waterways deals at length with the subject of inland navigation in France, Belgium, and Germany, and gives some particulars concerning the canals of Holland. As a general rule, the waterways in the countries named are the property of the State, and every possible facility is provided for the benefit of those engaged in waterborne traffic. That, of course, means the support of competition with railways, a condition which is not objectionable where railways also belong to the State. The Report constitutes a valuable book of reference for all who are desirous of learning how canals are administered on the Continent. Another document of somewhat analogous character is the recent United States Government Report on "Transportation by Water." It is interesting to note that of the 4,500 miles of canals constructed in the United States, no fewer than 2,444 miles have been abandoned, partly because of railway competition, and partly because of badly-selected routes and mismanagement. Thus the history of British canals seems to have been repeated in the United States. Most of the private canals suffer from declining traffic, little has been attempted in the way of improvement since the Civil War, several of them have come into the possession or under the control of railway companies, by whom their use is discouraged. Private ownership is quite a failure in America, and even in the development undertaken by States and the Federal Government there is a marked lack of the co-operation between central and local authorities that prevails in connexion with the most successful European canal systems.

Digitized by Google

Undeveloped Land Duty and Gardens. THE exemption of gardens from undeveloped land duty, which we have often urged as a necessity if the health of suburban districts is to be maintained, has been granted in such extraordinary terms in the Finance Bill that it may prove a doubtful boon. The clause in the Bill is 17, subsect. (4), and, as in the original Bill, it only clearly exempts one acre of garden. After that exemption it provides that undeveloped land duty shall not be charged "on the site value of any land being gardens or pleasure grounds occupied with a dwelling-house when the site value of the gardens and pleasure grounds, together with the site value of the dwelling-house, does not exceed twenty times the annual value of the gardens, pleasure grounds, and dwelling-house, as adopted for the purpose of income-tax under schedule A." Then follow provisions that no exemption shall be given in respect of more than five acres, that the Commissioners are to determine which five acres are to be exempted if the gardens exceed that limit, and that if the gardens are assessed under schedule A, together with other land, the Commissioners are to divide the assessment as they shall determine. Surely concessions expressed in such terms offend against all the canons of taxation. The tax should be certain, and the subject matter to be taxed should be clearly defined. Here a valuation is forced upon every owner to find out that uncertain quantity "site value," and at the end of a tiresome inquiry it may be found that, after all, it was unnecessary, as he is exempt. This uncertainty in the terms in which taxation is imposed upon land in the Finance Bill would suffice to condemn that measure, quite apart from the principles involved.

The L.C.C. Architectural Department. WE cannot think that the London County Council have acted wisely, or for the best interests of London architecture so far as affected by their work, in accepting the recommendation of the General Purposes Committee to place all the architectural department work, including that formerly coming into the province of the Education Department Architect, under one head. An amendment was moved, and strongly supported, to appoint an additional responsible architect to take charge of buildings to be carried out, leaving the statutory work (a very large department in itself) under the management of the present architect; and we are glad to see that one member at least urged that they ought to give more attention to the art of architecture, and to place at the head of the building department an architect who was more specially an artist. The Council have refused that, however, and placed everything connected with architecture, statutory work and buildings, into the one department. It seems to be a decision adopted rather for convenience of administration within their own walls than for the best interests of the architecture which is under their control.

Proposed Alterations at the Guildhall. THE City Lands Committee presented a Report, on the 7th ult., in regard to some proposed alterations at the Guildhall, which has been the subject of some rather uncalled for discussion and criticism. A good many years ago a former City Surveyor pulled down the eastern half of the interesting and picturesque quasi-Gothic façade which Dance had erected in 1788, leaving the façade in its present lop-sided appearance; an act of vandalism for which there seems to have been no valid excuse. The City Lands Report proposes to rebuild this in exact accordance with the existing western portion, and utilise the new building for rooms which are a good deal wanted. Architecturally, it is the best thing that could be done; it is not "restoration" in the objectionable sense of the word; it is merely replacing one-half of a complete design, of which the other half remains as a model. The accompanying illustration shows what would then be its appearance. It has actually been proposed to set matters straight by pulling down the west side of Dance's work also—undoing one vandalism by a second. Dance's bit of architecture is very original and picturesque, and harmonises with the situation exceedingly well. It is also proposed (and this part of the scheme at all events no one will criticise) to remove the cookery establishment from the fine crypt beneath the hall—a finer piece of Gothic architecture than most people are aware of—and to connect the crypt with the Guildhall Museum, using it not for objects in cases, which would spoil its appearance, but for relics of masonry and carving, such as would seem not out of place there. We are entirely in agreement with the Report as a whole, and hope the proposed scheme may be carried out.

The Additions at the Law Courts. THE manner of conducting Government business often comes in for adverse criticism, and it would seem as if there was now a good deal to be said against the way in which the additions to the Law Courts in the Strand are being carried out. Work ceased on these additions at the beginning of August, after the walls had reached about 10 ft. above the ground. Nor has work recommenced. There are rumours that the first contract for the erection of the new structure is completed; but if that be so then the contract for the remaining portion should have been entered into at a time which would have enabled the work to be continuously carried out. As it is, a substantial sum of money must have been expended which, so far as interest goes, might as well have been buried. There is also this further point to be noted, namely, that if the new buildings are required for the purposes of the work of the Law Courts, then this kind of procrastination is a mismanagement of the public business.

Kingston Bridge. SINCE we referred to this subject in our last issue, we learn that Mr. Basil Mott the engineer who had been called in to advise, has presented his report. We are very glad to see that he objects, at all events, to the idea of a steel bridge, as he feels that "such a site as that at Kingston should not be occupied by any but a masonry bridge." It is something, in the present day, to find an engineer who will take that view. But he is apprehensive that the attempt to widen the present bridge, which is founded on timber platforms protected by piles, might be attended with danger to the foundations, a practical point of course too serious to be overlooked. He recommends the erection of a new and wider three-span stone bridge. There is a third suggestion for a supplemental bridge, between the present bridge and the railway bridge, to carry the tramways, to which the *Surrey Comet*, representing we suppose local opinion, observes that "there are so many objections that we cannot suppose it will receive a moment's consideration." What the objections are is not stated. We should add that the paper in question fully realises the beauty of the present bridge, which, as it truly says, "fits so naturally into the landscape," and expresses the greatest reluctance to lose it. We cannot help thinking, from observation on the spot, that the inconvenience of the present bridge is much exaggerated, and that it would be quite possible to solve the problem by simply letting it alone. There are surely cases in which it is better to put up with a little inconvenience than to destroy a beautiful thing which is part of the landscape.

The Nature of Portland Cement. A SUGGESTIVE article on this subject is printed in the *Engineering Record* for October 16 last. The writer, Mr. E. Godfrey, of Pitsburg, deals with the nature of cement as manifested by physical tests and experience, and puts forward some considerations which are not stated clearly, even if mentioned at all, in the numerous treatises on Portland cement. Very briefly put, the main propositions of the writer are:—(1) That commercial Portland cement is a colloid mixed with inert particles; (2) that the colloid, or true cement, used alone is weak and useless; and (3) that the colloid when mixed with any inert particles has the power of binding them together. The statement that two mechanical forms of the same material which are inert when applied separately, and yet are actively cementitious when mixed in suitable proportions, may seem paradoxical. But their truth appears to be confirmed by the results of careful tests described by Mr. Godfrey. For instance, he found that the tensile strengths of cement mill dust mixed neat was far lower than that of ordinary cement from the bins, and that by mixing dust and sand in the proportions of 1 : 2 the tensile strength was about equal to that of bin cement. As the latter includes a large proportion of clinker not ground finely enough to enable it to act as true cement, the economic advantage of uniformly fine grinding is clearly suggested. The same point is brought out by the experiments of Mr. H. S. Spackman and Mr. R. W. Lesley, who reground and tested twice successively the material in test briquettes, each time obtaining evidence of the additional cement furnished by the pulverisation of previously inert particles of clinker.

The Bond of Cement Mortar. A PAPER by Professor Kirsch, of Vienna, describes some tests made with the object of ascertaining the tensile strength of the

Digitized by Google

bond between layers of mortar deposited after different intervals of time. Two mixtures were employed 1 : 2 and 1 : 4 of Portland cement and sand, and the intervals of time were 0, 0·5, 2, 6, and 14 hours. The 1 : 2 specimens were taken from the mould after setting for about three days, and the 1 : 4 specimens after eight days, being subsequently seasoned for three months in a damp cellar. The Portland cement tested neat gave the tensile strength of

The Guildhall Entrance Front as it would appear with Dance's Eastern Screen Re-instated.

Digitized by Google

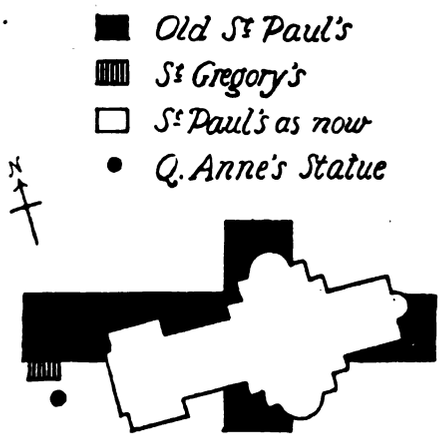
346 lb. at the age of four weeks. The adhesive bond between the different layers was found to be as stated below:—For 1 : 2 mortar 54, 17½, 20½, 15, 14½ lb. per square inch., and for 1 : 4 mortar 56½, 17, 16, 22½, 17 lb. per square inch, the different values corresponding to the intervals of time mentioned above. Although the results are somewhat irregular, they are sufficient to show that the lapse of half an hour before depositing fresh mortar on a partly-set mortar surface reduces the bond to about one-third of the normal strength of the material, and that longer intervals are not materially more prejudicial. These tests make clear the advisability of avoiding all interruptions to mortar and concrete work as far as possible.

Electricity in England and America.

THERE are still many differences in the methods of employing electricity for lighting and traction in this country and in the United States. The original cause of these differences was due to the much stricter Government and municipal regulations in this country. Overhead wires, for instance, are very rarely used. Underground cables are in practically all cases compulsory, and this confines electricity supply to large towns. From a paper on this subject by Mr. Conover, which appeared recently in the *General Electric Review*, U.S.A., we were surprised to learn that over 60 per cent. of the supply stations in the United States were in towns having less than 5,000 inhabitants. In this country very few small towns have an electric supply station. This is probably due to the fact that many small towns in England had a gas supply before the electric light was developed, and hence the latter being a later comer in the field was handicapped. In the States very many small towns were not in existence twenty years ago, and so electricity could compete on equal terms. In electric traction there are several striking differences. In England the maximum permissible speed of tramcars is twelve miles an hour, and in many towns a much lower limit is imposed. In the States a maximum speed of twenty-five miles an hour is commonly permissible. The "inter-urban" trams often run on the highways at speeds of from forty to fifty miles an hour, and so single-decked cars are used, as the mechanical stresses on double-decked cars would be excessive. The American working man's wages leave him a substantial margin above his bare living expenses, and so he takes a car for quite a short distance. Hence flourishing tramway systems are found even in sparsely populated districts. American engineers allow for depreciation at a much higher rate than English engineers, and they are, therefore, prepared to run much greater risks. Although the very rapid increase in advertising by luminous signs in the large cities of America may have benefited the supply companies, we hope that this phase of American life will not make corresponding strides in this country.

Church of St. Gregory by St. Paul's.

A FACULTY will shortly be issued from the Consistory Court of London in respect of the large vault, within the railing around the cathedral, which belongs to the parish of St. Gregory by St. Paul's. The vault, in the south-east corner of the space railed in, was closed against further interments in 1853; a portion of it will be sealed with concrete and utilised for purposes of a scheme for the improved warming and ventilation of St. Paul's. The extension from time to time of the former cathedral encroached upon the two parishes, and their churches, of St. Faith, to the north and east, and St. Gregory, to the south and west. The former church gave way to the completion of the east end of the choir in the middle of the XIIIth century, when a portion of the choir-crypt was set apart for the parishioners' uses. The church of St.



Gregory stood against the south aisle wall, at the western end of old St. Paul's, with its tower—the Lollards' Tower—and west wall in alignment with the west façade of the cathedral. It remained there until Laud pulled it down at the time of the addition of the west portico, and of the other work, carried out by Inigo Jones. As the long axis of the present St. Paul's is inclined at an angle to that of the former structure it happens that the site of St. Gregory's church is just to the north of the statue of Queen Anne. The church is depicted in Van Wyngaerde's view of London, and in Hollar's drawing, from the south, of Old St. Paul's. Whilst the area of St. Paul's is extra-parochial, the north choir-aisle and the eastern apse are in St. Faith's parish; the remainder of the fabric is in that of St. Gregory, in the ward of Castle Baynard.

Canterbury Tower.

MR. W. D. CARÖE has made the discovery at Canterbury that the original piers of the Norman central tower are actually in existence and encased in the masonry of the piers of the later tower; a condition of things which had been suggested as probable both by the late Professor Willis and himself. It appears that the externally visible piers are a shell of masonry only 9 to 12 in. thick, and with no bond into the Norman piers, the space between being merely filled up with rubble. This is almost the case of the Peterborough piers over again; and very likely if the Norman piers had not been preserved the whole interior of the masonry skin, as at Peterborough, would have been filled up with rubble, and probably it is only to the retention of Norman piers inside the later ones that we owe the fact that the centre tower has not come down before now. The story is another curious instance of the happy-go-lucky engineering methods of the great mediæval artists in building.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

OPENING MEETING OF SESSION: PRESIDENT'S ADDRESS AND PRESENTATION OF ROYAL GOLD MEDAL.

THE first general meeting of the Royal Institute of British Architects for the seventy-fifth session was held on Monday evening at No. 9, Conduit-street, Regent-street, W., Mr. Ernest George, President, in the chair.

Deceased Members.

The minutes of the last meeting having been taken as read,

Mr. H. T. Hare, Hon. Secretary, announced the decease of the following members:—

Nathan Solomon Joseph, Associate 1863, Fellow 1890.
F. Hyde Pownall, Associate 1857, Fellow 1860.
Henry Stock, Fellow 1885.
Don Jose Urioste y Velada, Hon. Corresponding Member, Madrid, elected 1905.
F. H. Williams, Associate 1878.
J. Wornham Penfold, Associate 1860, Fellow 1881.
J. Archibald Campbell, Fellow 1906.
W. Owen, Associate 1879.
Auguste Choisy, Hon. Corresponding Member, Royal Gold Medallist 1904.
Charles Follen McKim, Hon. Corresponding Member, Royal Gold Medallist 1903.

Mr. Hare remarked that the last two gentlemen were very distinguished foreign Corresponding Members of the Institute, and their names were so well known throughout the whole of the profession in all parts of the world that he was sure everyone would feel that the profession had suffered a great loss in the death of these distinguished architects.*

New District and Building Surveyors.

The names of candidates nominated for election having been read,

The Secretary, Mr. Mac Alister, announced that the following candidates had passed the recent Statutory Examination held by the Institute under the London Building Act, *i.e.*, Mr. Baxter Greig and Mr. J. Hatton Markham. These gentlemen have been awarded by the Council certificates of competency to act as District Surveyors in London. Mr. Reginald G. Kirkby has been awarded a certificate of competency to act as Building Surveyor under Local Authorities.

President's Address.

The President then delivered the following address:—

"We meet to-night at the opening of the seventy-fifth session of our Royal Institute, and it has been the custom on such first nights for the President to make his oration, and you listened with courteous patience a year ago to my expression of sentiments and views about architecture and the concerns of our calling. My words to-night shall be few, for, happily, we have a more distinct interest in gathering here, perhaps overcrowding our room. Our numbers and our needs have outgrown the accommodation. It is a satisfaction to be able to state that after a few months we shall be suitably housed, spreading into the adjoining galleries that we have long coveted and in which will be our Lecture Theatre. This library will no longer be deranged for Sessional meetings. The pictures, our precious possessions, which are now skied and which are deteriorating in the upper region of exhausted air, will be hung in a becoming light, doing justice to their

* This expression was inaccurate, as M. Choisy was not an architect, but an engineer. The point is worth noting, because the special kind of value of his "Histoire de l'Architecture" and his books on the "Art de Bâtir" of the Romans, Byzantines, etc., is that they are not histories of architecture in the artistic sense, but histories of the constructional methods employed (or in some cases imagined) in different styles of architecture; histories of architecture, in fact, from an engineer's point of view.—ED.

Digitized by Google

distinguished painters and to our Past-Presidents. Our collection will shortly be made richer by the fine portrait of our late President from the hands of Mr. Cope. We shall be able to receive our guests with comfort and propriety without the present struggle for tea and toast. Also we shall have room for the exhibition, under our own roof, of the studentship drawings, and of other collections that may be desirable from time to time.

Artistic Progress.

In our art we do not make history so rapidly that there is a new story to be told each year. Progress, I believe, is steadily making—the result of sound training in our schools and of a truer appreciation among ourselves of the principles of building and design. There is a growing desire for breadth and largeness of treatment rather than for pretty detail and the trivialities that once interested architects and their public.

We must report *l'art nouveau* as already in a moribund state, and happily we have not been startled by a later invention. We are seldom asked now why architects do not originate a style. Those who have followed the history of the art know that each style, seeming distinct, has been the result of growth, changes coming by degrees, sometimes by assimilation of foreign forms, as well as in variations of detail at the hands of the cunning craftsman, who yet held to the traditions in which he moved.

Such changes have at times been accelerated, as when the influence of the revived Greek and Roman art spread through northern Europe, and men of genius made new melodies on the old chords. Yet the giants of those days did not claim to have invented styles. To meet constantly changing requirements and to accept new methods of building, evolving new modes of treatment, will give vitality to modern work which must not resuscitate old models. I give my humble opinion that the average work of architects now is better than it was even several years back, one advantage being that there is less diversity and a more general acceptance of a common style. There is the desire to fall into line rather than for strong self-assertion. Forty years ago, if we had a street frontage to deal with, a first thought was "Shall it be Gothic or Classic?" Now the feeling is that it should harmonise with its surroundings; better than the latter if possible, but not with a clash or discord.

Workmen and Unions.

For the carrying out of our work we have in this country admirable builders, and I am glad to state my experience in this matter. We have also the British workman, who is often spoken of slightingly, and perhaps with justice when known only through the demagogues who are too often his mouthpiece. We have craftsmen and workmen equal to the best. For these to have any independence and strength it was found necessary to combine and form unions, and these have been helpful in preserving the man's rights. We have, however, to lament the short-sighted policy of these unions in suppressing the individuality and self-reliance of the man. The intelligent mechanic, with skill and energy, must receive no higher wage than the wastrel; he must not work an hour longer, nor must he do more work in the hour. He is robbed of all ambition and of the possibility of improving his status. Our politicians on both sides of the House avoid this home truth, and discuss other ways of making our workers compete with skilled and industrious toilers in other countries. They do not say that the law the man makes for himself stultifies him and excludes him from the labour market. These artificial conditions of labour have also made the housing of the working man almost impossibly costly.

Architectural Training.

The future of our art is in the hands of the young men now in our offices, or in the good schools where a training is given much more thorough than could be had a generation ago. We are able to take stock of these future architects annually at the gathering of students' drawings in competition for our medals and prizes. The work shown last winter perhaps exceeded in quantity and quality the product of previous years.

An effort is being made to give direction to the studies of those who go out with our awards, so that time may be spent to the best advantage among the great examples; precious time has sometimes been wasted in miscellaneous and objectless sketching for want of a defined purpose in travel.

One of the aims that we have before us is the founding of a British Architectural School of Rome, the presentation to which would be our highest academic prize, and I am glad to say that this scheme has ceased to be in the clouds. Time and thought have been given to the subject, and much information gathered. A special committee has struggled with the problem, and our able friend, Mr. John Simpson, has drawn up a practical working basis for our consideration.

It has further been proposed by Sir Brumwell Thomas that we should have a "Diploma School"—a school where architectural study would be carried further than in the ordinary course of training or apprenticeship, and on men from this higher grade our "Prix de Rome" would be conferred; this would be equivalent to a prize Fellowship, giving leisure for higher culture.

Town Planning.

It has but lately been realised how important is the study of civic design and town planning. It does not fall to our lot in the old country to scheme new cities on noble lines. We have, nevertheless, most of us seen familiar places change their aspect by degrees, often with lamentable result. There is now a general desire that new quarters of the town and new streets shall not come haphazard and by accident, but shall be the result of forethought, and part of a comprehensive plan with consideration of possible future needs. Architectural effect is to be studied as well as convenience and economy.

These matters have been till now left to surveyors and engineers. The study of such important problems will in future be brought before our architectural students, and by the generosity of Mr. Lever the Liverpool University is the first to enjoy a professional Chair for this special study.

A group of able men among our Institute members form a Committee for the study and elucidation of this subject, and we have had the advantage of addresses here and of essays in our *Journal* and elsewhere giving the results of their research. This Committee is also considering the proposal to organise a Conference of those interested in the work of town planning.

We are glad to realise that something has been done to reform suburban life from its monotonous environment. "Port Sunlight" perhaps was the earliest effort to supersede the usual rows of machine-made workmen's dwellings by groups of cottages with character and individuality, these having their outlook on a garden or green instead of always on the street.

The Garden Suburb at Golder's Green, Hampstead, is another happy growth on somewhat similar lines. It has been laid out with skill and judgment, the several roads or vistas taking advanatge of any points of interest in the view. Ugly "backs" are avoided, the cottages being made seemly all round. There are dwellings for workmen, also accommodation suited to clerks, while there are larger houses for those of larger means. The desire has been to avoid an unrelieved and dreary aggregation of one class.

Another oasis, in a district with no natural attraction, is formed by a gathering of uburban villas, built by Mr. Willett, to the north of Regent's Park. These are by various architects, and they are happily grouped in relation one to another; instead of fences their forecourts or front gardens are enclosed by neatly clipped yew hedges, outside which is a well-shorn grass margin to the road, and this is not harmed by traffic or the passer-by. Looking from these houses or at them the aspect is pleasant with an air of the country and of Kate Greenaway; we wish every success to such speculative building.

We have seen changes come, mostly for the better, in our own great city, while probably greater alterations must follow. Let us prepare for these.

The New Bridge and the Guildhall.

Between the City and Southwark is to be a new "St. Paul's Bridge." This is a matter of vital interest, and we trust that with collective wisdom and good judgment we may have a fine architectural feature, with well studied approaches. Is there any reason why a Thames bridge built now should have less dignity and propriety than London Bridge and Waterloo Bridge? Is there not a shoddy and commercial appearance about most of the later attempts to span the river—a lack of monumental fitness? The bridges of a great city are the features that most impress the mind and remain on the memory.

While speaking of the City I would refer to the Guildhall, with its record reaching back to the days of Henry IV. The interesting crypt and the masonry of the walls remains, but generations of pottering have left little else. Even the late front by Dance has been mutilated. To meet modern wants great changes and rearrangements are to be made shortly, and we trust the best advice and the best possible scheme will be secured for this work. There is also a minor project for building kitchens, etc., now, to the disfigurement of the building, without reference to the future scheme. We would beg the Corporation to defer this work until they have decided on a comprehensive plan. Such halls are of national—I might say international—interest considering their wide hospitality. Some of my friends here will remember how the Burgomaster of Vienna last year, at the Architectural Congress, feasted a thousand of us in the Great Hall of the Rathaus.

Public Architecture.

In England we get fewer opportunities for architecture on a grand scale than is afforded in other countries. With our Continental neighbours a provincial railway-station is made an occasion for an architectural feature; with us we demand only a restricted amount of accommodation and of convenience. The work of a post-office is carried on perhaps in half of a grocer's shop, while in a French town the Bureau de Postes would house its officials in a structure of some magnificence.

Just now interest is taken in a scheme for a Playhouse as a fitting memorial to our great dramatist. I hope this may be realised on a dignified scale.

It is strange that while music and musicians have encouraging support here we cannot have an opera house adequate to our important city. It is not in us to emulate Paris with its Place de l'Opera, where architects, sculptors, and painters have enjoyed a free hand. Here the State is not expected to help in embellishments of the capital. Great demands are made upon her just now, but the desire is rather that she should take a grandmotherly interest in our private and domestic affairs.

We must accept the fact that expenditure on art and objects of beauty must generally be the result of private munificence, and it has been gratifying to see how large sums have been forthcoming when a picture has had to be secured for the nation. In time we may find that architecture is appreciated as one of the great factors influencing the lives of the people. The cost of five

Digitized by Google

Old Masters (at the present artificially inflated state of the market) would provide a noble building in which drama or the muse should be housed, receiving tributes from sculptor and painter. I do not undervalue the great works of great men, but I do feel that they are sometimes secured at an exaggerated cost, while the cheapening process is applied to public buildings and works that might have an exalting influence. The latter are the common property of all and belong to the poorest among us; they are possessions which we all enjoy and which cannot be catalogued in the impending Doomsday Book.

Many of you may feel, as I do, the call from time to time to see something beautiful; perhaps with a few days' leisure to look upon the marble palaces and shrines of Venice. Entering St. Mark's we exult in the tenderness, the mystery, and the richness of that temple. As we see the poor crowding around, whose shoulders and knees have polished the stones, we may almost envy them having this constant possession. My argument is that fine architecture is the least selfish or "classy" of human products; it is for all sorts and conditions of men.

The Royal Academy and Architecture.

We often hear the complaint that architecture is not duly represented in the one small room allotted to it at Burlington House; but we are now, I hope, to be given our chance. We have proposed to the Council of the Royal Academy the arrangement in the winter months of an exhibition of architecture and the contributory arts. The Council has graciously entertained the idea of such a scheme for the winter of next year. It behoves us all to make strenuous efforts for a gathering of works and objects that shall interest the outside world in our art.

Besides perspective views, commonly seen, it is desired to have models, such portions of buildings as are portable, sculptured panels, decorative paintings, and perhaps metal gates or grilles, with detailed drawings or photographs showing the relation of these works to their respective buildings.

The Profession and the Institute.

The work of giving a higher organisation to the profession of architecture through the medium of the Royal Institute is making steady progress. Two and a half years ago we adopted a comprehensive policy by a unanimous vote. Step by step we are carrying out that policy. We have drawn up and obtained the Royal sanction to a new charter. We have drawn up new by-laws after a minute and exhausting discussion, and they are now awaiting the approval of the Privy Council. By the beginning of next year we hope to receive this approval, which will empower us to open the gates of the Institute for the space of one year for the admission of the large number of practising architects of good standing who are still unattached to our body. When that has been done with success we may claim that we represent practically the whole of the architectural profession in this country; we are then to ask Parliament for higher powers and a more secure position. It is our hope that the energies and the good will of all will be united to carry through this policy to ultimate success."

Presentation of the Royal Gold Medal to Dr. Arthur John Evans.

The President then said: "While most of us are occupied with our personal aims and interests, seeking our own profit or advancement, with some consideration for the greatness of our art and perhaps equal consideration for the necessary daily bread, there is among us a small band of workers moving on a higher plane, men who have set themselves to increase the sum of human knowledge. Some of these are engrossed in science, discovering ameliorations to sickness and pain. Some are exploring the desert and the mountain and charting unknown regions and increasing man's resources; while other brave men face the hardships of ice, storm, and starvation and fight their way to the Poles. All these explorers we delight to honour.

But to us the Poles have no professional attraction; we shall not be called upon to house the surplus population and the unemployed in those regions. The inhabited world and a knowledge of past civilisations have for us a much deeper interest, and we owe a great debt to those keen sportsmen who have set themselves to discover the relics of past races, unearthing buried cities, their temples and palaces, deciphering records and showing us how men have lived and fought and built.

To such work our distinguished visitor, Dr. Arthur Evans, has devoted his mind, his time, and his means, with the splendid result of reclaiming from oblivion the long-hidden treasures of Crete. It is our privilege periodically to recommend for his Majesty's approval a name for the distinction of the Royal Gold Medal. It is for one who by building, by writing, or by research has advanced the art of architecture. The first explorer to receive this mark of appreciation was the great pioneer of excavation, Sir Henry Layard, whose winged bulls, so prominent a feature in the British Museum, may be found some day to have relation to the Bulls of Knossos which Dr. Evans describes. At a later date we had the honour of conferring the medal upon Dr. Schliemann, whose splendid tenacity of purpose resulted in the discovery of Troy and of Mycenæ, with the tomb of Agamemnon.

It is my pleasant duty to-day, in your names, to present the King's Gold Medal to Dr. Arthur Evans, who, in discovering the Palace of Minos, has, it is no exaggeration to say, completely revolutionised our accepted ideas of the early civilisations surrounding the Mediterranean basin. He has converted myth into history and floating prehistoric tradition into established fact. But what is of paramount interest to us, he has shown that centuries before the Parthenon was thought of, indeed before the Greek nation came into being, there were architects at Knossos and in other parts of Crete building huge monuments and palaces showing consummate skill in construction and adaptation for the use of man in an advanced state of culture. In fact, Crete has been found actually to have played the part in ancient civilisation which tradition had claimed for it. With Dr. Evans among us to-night it is not for me to tell you of Crete. I will only ask him now to accept the medal as a tribute of our high esteem."

The President, amidst considerable enthusiasm, then invested Dr. Evans with the Royal Gold Medal.

The Palace of Knossos.

Dr. Evans, in reply, thanked the President and the members for the honour conferred upon him, and said that he felt that anything he had done towards lifting the veil which concealed the early civilisation of Crete could not have been achieved had it not been for the powerful and devoted help he had received from a band of workers, and the honour accorded him by the Institute should be shared by those who had worked with him in Crete. He specially mentioned Dr. Mackenzie, Mr. Theodore Fyfe, and Mr. Christian Doll; and but for the cordial co-operation of Mr. Macmillan, Secretary of the Cretan Exploration Fund, they could never have achieved the results they had.

Dr. Evans then gave a summary account of a communication to the Institute "On the Palace of Knossos as a Sanctuary and the 'Miniature Frescoes.'" He drew attention to the evidence that had accumulated throughout the whole course of the excavation of the religious aspects of the great building. It was a sanctuary as much as a palace, and the Minoan kings were also priests. It was unlike other palaces either of the ancient or modern world, in which the demands of cult might be satisfied with a single shrine or chapel. In some respects it might rather be compared to the Vatican, for it swarmed with shrines and halls for ritual functions. The evidence of a whole series of finds had now shown that the chief divinity of Minoan Crete was a virgin goddess, akin to Rhea and the Asiatic Artemis, and the Kings of Knossos seem to have administered their realm as her high priests. Besides the pillars of her shrines, the aniconic image of the goddess was the sacred double axe, and the wonderful painted sarcophagus discovered by the Italian Mission at Hagia Triada, near the southern coast of Crete, showed an actual scene of worship in which offerings were being made to a pair of these axes, rising from stepped pedestals. The double axe, as was well known, recurred at a later date among the kindred Carian population as the attribute of their Zeus, called, from its native name, *labrys*, Labrandeus, and the view put forth on philological grounds that the Cretan Labyrinth derived its name from a dialectic form of the same name was fully confirmed by the archæological evidence. The Palace of Knossos was before all things "the House of the Double Axe," and was thus the true Labyrinth of tradition. Dr. Evans said that exception had been taken to his view that the double axe so constantly recurring on the palace blocks was anything but a mere mason's mark or had any religious signification. Certainly there were many mason's marks on the palace blocks besides the double axe. But in several cases it could be shown by their distribution that these had a distinct application to the character of individual parts of the building. Several of these marks, in fact, belonged to the current hieroglyphic system and possessed a recognised ideographic value. The double axe, for instance, could be shown to recur in what appeared to be official titles and coupled with the "Palace" sign. It was far more numerously applied to the palace walls than any other sign, and marked the principal lines of wall and entrances, the grand staircase, and the most important reception hall. Its repeated occurrence on the stone pillars rising in the centre of two small basement rooms might, then, be taken to show that they possessed a special sanctity. This view had been doubted when Dr. Evans first put it forth, but the discovery of many other similar pillar rooms exhibiting evidence of religious usage has now put the matter beyond doubt. These "Pillar Rooms" were the "crypts" of Minoan sanctuaries. In the south-east house at Knossos the base of a sacred double axe was actually standing against such a pillar, which itself again was marked by the sacred symbol. Ritual vessels and bases of the same kind were found both in the palace and elsewhere either within or in close association with such chambers.

The whole west wing of the palace presented indications of its various halls and chambers having served religious purposes. Besides the central shrine of the goddess, here represented in her nether-world aspect as holding serpents, it was now clear that the chambers contiguous to the room of the Throne contained at least three small shrines, one of which had at first been wrongly supposed to be a kitchen. The throne itself and neighbouring benches seems rather to have belonged to a small consistory of the priest kings, than to have been intended for any secular usage.

At the north-west angle of the palace, near this, had existed another pillar shrine and an upper hall of a ceremonial nature, the wall-paintings taken from which exhibit a columnar structure with pairs of double axes struck into the capitals and sacral horns above the stylobate. Other fragments of fresco from the same place showed votaries bearing gold and silver vessels, and others again related to the sports of the bull-ring which themselves seem to have had a religiou-

Digitized by Google

connexion. But the Miniature Frescoes, derived from some sanctuary structure on an upper floor near the northern "piazza," gave the fullest impression of the religious functions of the palace. Dr. Evans described the methods by which two complete designs, each forming a separate panel, had been reconstructed from the fragmentary remains. One of these depicted crowds of spectators of both sexes looking on at a dance of gaily-dressed females in a court below, and a discovery made this season had supplied a welcome illustration of the character of the performance. From a tomb just excavated by him, near the Royal Tomb already explored and of the same interesting structure, he had obtained a gold signet-ring with a finely-engraved design, the lower part of which exhibited similar dancing female figures parallel in attitude and arrangement to those of the fresco. But in this case, together with sacred emblems, a figure of the great Minoan Goddess appeared above in a reserved celestial space. The dance then was of a religious and orgiastic character and in honour of a goddess who, in a later Hellenic garb, appears as Aphrodite Ariadne. The Court, with dancing votaries, depicted on the fresco, which was obviously some part of the actual palace system, may be taken to represent the actual "Dancing-place of Ariadne," which Dædalos, according to the Homeric tradition, was said to have fashioned "in broad Knossos."

The other panel shows the same crowds of spectators thronging the courts and terraces of a building the central feature of which is a small, brilliantly-coloured pillar shrine with a taller central compartment and two lower wings. It is probable that this may actually represent a shrine existing in the northern quarter of the palace. Some curious evidence, to which attention was called, seemed to indicate that in the latest period of the remodelled palace a Pillar Shrine of the same kind had stood in the part of the west wing facing the Central Court, near the place where the repositories of the earlier shrine of the Snake Goddess had been discovered. On the face of a low stylobate bordering the Court in this quarter traces had appeared—made clearer by successive seasons' rains—of two pairs of column bases with an intervening blank space between them, where, according to the typical plan of the Minoan pillar shrine as shown on the fresco, the central cell would have risen. It was noteworthy, moreover, that in the inner space within one of these wings had been found a series of clay seal impressions showing the great Minoan Goddess on a height between two guardian lions with a small pillar shrine on one side. These sealings themselves naturally indicated the neighbourhood of a sanctuary, and what made the evidence still more suggestive was the appearance inside the central space between the pairs of column bases of a curious recess, in the bottom of which remains of a chest containing clay documents had been found. Putting two and two together, Dr. Evans had arrived at the conclusion that they had here the more or less complete ground plan of a small Minoan pillar shrine, the plan and elevation of which were now shown.

Dr. G. A. Macmillan, Chairman of the Committee of the British School at Athens, in proposing a vote of thanks to the President and Dr. Evans, said that no doubt he had been asked to propose the vote of thanks because of his official connexion with several bodies—*i.e.*, the Hellenic Society, the School at Athens and Rome, and the Cretan Exploration Fund, all of which concerned themselves with matters dealt with by Dr. Evans. He was very glad to hear the reference made by the President to the proposed architectural school at Rome, because last year allusion was made in that room to the matter, and it caused a certain amount of flutter in the minds of certain people, who, when it was suggested that this school should be started in Rome, remarked that the school already existed. These little misunderstandings had now been cleared away. The British School of Archæology at Rome—they did not confine themselves to archæology—had put themselves in communication with the Institute, and they had been met very cordially, and he had reason to believe that when the admirable scheme contemplated was carried out the British School at Rome already existing would have some part in the ultimate result. In the meantime, in order to emphasise the fact that the Committee and the Institute were working together, he might mention that they had invited the Council of the Institute to appoint a representative to join the Committee, and he was glad to say that not only had Mr. J. Simpson been appointed, but that he was going to Rome, and had already had several interviews with the Director of the School on the subject. He believed that in the end the movement would take a form satisfactory to all interested in the movement. No one was more deeply interested in the idea of bringing together all the interests connected with the study of art in all forms at Rome than the present British Ambassador, Sir Rennel Rodd, who is a member of the British School already existing. As to Dr. Evans, whom they had so signally and so worthily honoured that night by that great distinction, those who had heard him that evening for the first time and had not hitherto realised all that his work had meant, would now understand what the world of learning owed to his genius and determination during the last seven or eight years. It was indeed a brilliant piece of imagination which led Dr. Evans first of all to lay his hand on this particular site and to say that there, if anywhere, was to be found the site of the great Palace of Knossos. We all knew that that prophecy came true in the first years in which the altered conditions in Crete enabled him to tackle the site, and since then, year by year, marvellous discoveries had come about; and even that night, although he had heard Dr. Evans so often on the subject, they had heard a new aspect of this extremely rich theme—an aspect which must enchain the interest of all who heard the lecturer. It must have been evident to all that in Dr. Evans they had not only a scholar, a trained student, a patient explorer, but most of all a man with real imagination, whose mind was at all times working on results and trying to piece together the past and bring it back in living form before our eyes.

Mr. George Hubbard, F.S.A., in seconding the vote of thanks, said they were all pleased to hear that after a few months the Institute would be suitably housed in the building they had at present, and they were to be congratulated on their success in having secured the adjoining galleries. The President had rightly told them that their art did not make history rapidly, and the younger members should understand that in their striving for originality they were often stultifying the proper development of their taste. The quick growing shoots, such as the *nouveau art*, were sure to wither away as rapidly as they came into existence. The President had referred to the short-sighted policy of the trade unions. It was indeed lamentable that the great army of good craftsmen should have to march by the strength of their weakest member. These were indeed artificial conditions which did not tend to wholesome development. The future of the profession was in the hands of the young men. As somebody had remarked, "the life of the nation is in the breath of the school children." Competition in the ranks of the profession did not grow less, and it was extremely satisfactory to learn that additional facilities for the learning of our art was now about to be realised in the British Architectural School of Rome, and the thanks of the profession were due to Mr. J. Simpson for his assistance in this direction. The importance of better town planning was one which would be appreciated not only by architects, but by the whole population. It seemed extraordinary that this great city should have existed for so many hundreds of years without any systematic scheme of design, and they were pleased to hear that the Liverpool University had, through the generosity of Mr. Lever, given a professional chair for this special study. As to the new St. Paul's Bridge, if this were constructed diagonally across the Thames, with its central axis directed on St. Paul's, there would be some possibility of better appreciating the beauty and proportion of this cathedral. The President's encouraging remark with regard to the royal sanction to the new Charter was, perhaps, new to some of them, and they were glad to hear that there was a prospect of the Privy Council approving of the by-laws possibly before the beginning of next year, and that when this had been obtained there would be the direct inducement for the whole profession to become embraced in the Institute. When this had been achieved they would possibly be in a position to ask Parliament for higher powers with a unanimous voice. As to Dr. Arthur Evans, there was something peculiarly fitting that he should be the one man in England to make those discoveries in Crete. The fitness lay in the fact that in a wider field his father, the late Sir John Evans, was *the* man who did as much if not more than anyone else to carry back the evidences of the antiquity of man's occupation of the earth. It was this year—just half a century ago—that M. Boucher de Perthes, found in the tertiary gravel beds at Abbeville, in the valley of the Sommes, certain flints bearing a curious resemblance to each other. M. Boucher de Perthes forwarded these flints to Professor Prestwich in England, and he consulted John Evans about them, and together they went to Abbeville for the purpose of making an inspection on the spot. Here they found more flints, which had obviously been fashioned by man into implements; and it was thanks mostly to the marvellous intellect of Dr. Evans's father and his untiring energy that the history of the neolithic and palæolithic periods had been compiled. Now Dr. Evans with that intuitive hereditary instinct conceived that in Crete he would find the evidences of that earlier civilisation which preceded the high culture of Greece. So strong was that impelling force that he went to Crete and looked for what had been lost for thousands of years. He found the outcrop in the land of certain walls, and he could trace by the parched appearance of the land the lines of walls below ground. The next thing he did was to buy the land, and, having secured this, he started his excavations, employing something like two hundred men to carry out the work. The result had been, as all the world knows, that the Palace of Minos had been unearthed. They had heard Dr. Evans's lecture on the subject, and had seen the photographs of the ivory figures, etc., he had found. But it must be remembered that it was only a few years ago that our most distant horizon of the civilisation in Europe showed us the Greek art and culture, behind which an impenetrable veil of ignorance hid all that lay beyond. All honour was due to the man who had swept aside that impenetrable veil of ignorance and had shown us in a clear light of his own intelligence a more ancient civilisation, a more ancient art and race; and so important was the revelation that our histories of architecture would have to be rewritten in the light of Dr. Arthur Evans's discoveries.

Mr. Hubbard then gave some interesting reminiscences as to Dr. Evans's personal adventures and experiences.

The vote of thanks having been heartily agreed to, the President replied, and the meeting terminated.

The next meeting will be held on November 15, when Mr. H. Inigo Triggs will read a paper on "The Planning and Laying-Out of Public Places."

Digitized by Google

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

Extension of the Work of the Bureau in the Colonies.

A MEETING will be held at the Bureau Offices on Wednesday, November 10, at 2.30 p.m., for the purpose of considering the details of the above work with reference to which it is proposed to establish branches in each of the Colonies.

Any architects who have had experience in Colonial work, and who may be in London, are asked kindly to attend the meeting if they are able to, and to communicate with the Secretary, Architects' Technical Bureau, Technical Bureau-buildings, 24 and 25, Hart-street, Holborn, W.C.

Permanent Building Exhibition.

It is in contemplation to establish a Permanent Exhibition of Building Materials and Fittings at the Offices of the Bureau. Manufacturers wishing to display their goods should apply for full particulars to the Secretary, the Architects' Technical Bureau, Technical Bureau-buildings, 24 and 25, Hart-street, Holborn, W.C., without delay.

PICTURE EXHIBITIONS.

SOCIETY OF PAINTERS IN WATER-COLOURS.

THE Society's exhibition, if it does not contain any single work of the highest order, is a very interesting one; indeed, we cannot mention half the works which are worth mention. It is interesting to find two very able members trying something new. Mr. Walter West, besides his beautiful interior with a figure called "Firelight Glow," has a night scene beneath trees in a garden, "The Nightingale," which is a very well-studied piece of effect and handling, though (as usual in such cases) there is a little too much light for night. Mr. Cadogan Cowper's picture of a lady reclining under the shadow of a tree which frames a distant view listening to "Pan's Pipes," is a new kind of departure for him, and a poetic and suggestive work. Of other figure pictures, Mr. Anning Bell's "Going to the Hunt," important for its size, is not one of his best inspirations. Mr. Lionel Smythe's "Wings of the Wind" is a fresh breezy sketch of a seashore scene with a girl and child in the foreground. Mr. Crocket's dairymaid in "Monday Morning" is a very pretty figure, but not equal to his first exhibit in the room. Among pictures in which figures form a portion of the interest are two very clever ones close together by Miss Fortescue-Brickdale; Miss Rose Barton's "The Errand"; and Mrs. Allingham is equal to herself in her cottages and cottagers. Mrs. Laura Knight's large drawing, "Child with Flowers," is clever but not interesting.

The main strength of the exhibition is in landscape and architectural subjects. Various very opposed schools of landscape are well represented; Sir E. Waterlow's soberly satisfactory compositions; Mr. Paterson's broad masses of colour (his "The Quirang, Skye," is a grand landscape); Mr. Eyre Walker's small but solidly painted works, like large pictures seen in miniature; Mr. Herbert Marshall's delicately painted "Evening on the Somme at Amiens." Mr. Albert Goodwin's works are numerous and various in subject; his large picture with the title "He suffered and was buried," is a kind of melodramatic piece of effect which we do not like much. His "Rye" is a remarkable study, the attempt to convey the colour of a green field under moonlight, to make you see that it is green, although there is no actual green. Mr. Colin Phillip sends a large and fine study of Scottish landscape, "Arran from Culzean Bay." From this to such foreground studies as Mr. Arthur Hopkins's "Heather-clad Dunes of Studland" is a long step, but this and another drawing of the same class form much better occupation for an artist than his commonplace figure in "Lovebirds." As an example of what may be done to make a picture out of very simple materials we may point to Mr. J. C. Dollman's little work "September."

Architectural subjects are more numerous than usual. Among them the first place must be given, certainly, to the very fine drawing of the Taj Mahal by Mr. Reginald Barratt, who has forsaken Venice for the East, and contributes several other drawings of Indian architecture. Mr. Rooke's carefully drawn and highly-finished pictures come more within the lines of architectural drawing in the more limited sense, but are exceedingly good work of that class: "The Great Stair, Sagra San Michele" has a pictorial quality of a higher kind. Mr. Cameron has made "Luxor" (from the river) the subject of a picture, which seems rather forced in colour; his "Mosque in Cairo" is a much more satisfactory work in this sense. Mr. Robert W. Allan, who has a very fine coast scene, "The Turn of the Tide," has devoted all his other works to architectural subjects, among which are illustrations of the Tower of the Winds and the Temple of Jupiter at Athens.

OLD DUDLEY ART SOCIETY.

The exhibition of this Society, at the Alpine Club, is a better one than usual, and contains some works of more than average interest. Here also there is a fair proportion of architectural subjects. Those by Mr. Cape, which are the most important in size and finish, are too neat and hard for our liking, but are conscientiously executed. One of the best works of this class is Miss Winans' "Malvern Priory Church."

Among the landscapes the exhibits of Mr. Stacey, Mr. Geo. Marks, Mr. Lexden Pocock, Mr. Burleigh Bruhl (the President), Mr. Haité, and Mrs. Jardine, are especially worth attention.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Hammersmith Borough Council 10,000*l.* for electric lighting, and Woolwich Borough Council 2,199*l.* for electric lighting.

White Hart-lane Estate.—The Housing of the Working Classes Committee recommended:—

That the estimate of expenditure on capital account of 56,788*l.*, submitted by the Finance Committee in respect of the erection of cottages, on the fourth and final part of the Tower-gardens section of the White Hart-lane estate, and on an adjoining plot of land in Benington-road, and in respect of incidental expenses in connexion therewith, be approved.

The consideration of the matter was adjourned.

It was reported that eighty-seven additional cottages containing accommodation for 870 persons have been completed on the Tower-gardens section of the White Hart-lane estate. Of the 103 cottages in course of erection on the second part of sect. B, fifty-seven have been finished. In all, accommodation for 3,844 persons in 467 cottages has now been provided on the estate.

Improvements.—The Improvements Committee recommended as follows:—

That, subject to the Islington Metropolitan Borough Council consenting to the construction of tramways from Highbury-corner to Ball's Pond-road, and agreeing to contribute one-third of the net cost of the necessary street widenings, application to be made to Parliament in the session of 1910 for authority to widen St. Paul's-road in general accordance with the plan.

That, subject to the Hampstead Metropolitan Borough Council consenting to the construction of tramways from High-road, Kilburn, to Upper Avenue-road, and agreeing to contribute one-third of the cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Kilburn-pirory, Alexandra-road, Hillgrove-road, Adelaide-road, and Upper Avenue-road, in general accordance with the plan.

That, subject to the St. Pancras Metropolitan Council giving any necessary consents in respect of the reconstruction of the tramways in Highgate-road, and agreeing to contribute one-third of the net cost of widening Highgate-road, application be made to Parliament in the session of 1910 for authority to widen Highgate-road in general accordance with the plans.

That the resolution approving the capital estimate (No. 6327) of 136,140*l.*, be rescinded, so far as it relates to expenditure exceeding 96,533*l.*

That the purposes of the capital estimate of 136,140*l.*, as reduced by the foregoing resolution to 96,533*l.*, in respect of the widening of East-road, New North-road, and Baring-street, be varied by the omission of the proposed widening of Baring-street, and the inclusion of the construction of a new road at the rear of Baring-street.

That the resolution agreeing to undertake on certain conditions, and sanctioning expenditure in respect of widenings of East-road, New North-road, and Baring-street, be rescinded.

That expenditure on capital account not exceeding 96,533*l.* in respect of the widening of East-road and New North-road, and the construction of a new road at the rear of Baring-street, be sanctioned; that consent be given under sect. 72 of the Metropolis Management Amendment Act, 1862, to the improvement proposed to be executed by the Shoreditch Metropolitan Borough Council in accordance with the plan; that a contribution be made of the net cost of the improvement, provided (i.) that, if such net cost exceed 96,533*l.*, the Council's contribution shall be limited to 96,533*l.*

That, subject to the Shoreditch Metropolitan Borough Council giving any necessary consent in respect of the reconstruction of tramways from City-road at East-road to Southgate-road, application be made to Parliament in the session of 1910 for authority to widen East-road and New North-road, and to construct a new street at the rear of Baring-street.

That, subject to the Islington and Hackney Metropolitan Borough Councils giving any necessary consents in respect of the reconstruction of the tramways from Essex-road to Mare-street, and agreeing to contribute between them one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Ball's Pond-road, Dalston-lane, and Graham-road.

That, subject to the Islington Metropolitan Borough Council giving any necessary consents in respect of the reconstruction of the tramways from New North-road to Highbury-corner, and agreeing to contribute one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen New North-road, Canonbury-road, and St. Paul's-road.

That, subject to the Hackney, Islington, and Stoke Newington Metropolitan Borough Councils giving any necessary consents in respect of the reconstruction of the tramways from Southgate-road to Seven Sisters-road, and agreeing to contribute between them one-third of the net cost of the necessary street widenings, application be made to Parliament in the session of 1910 for authority to widen Southgate-road and Green-lanes.

That application be made to Parliament in the session of 1910 for authority to utilise for the widening of Woolwich-road portions of the Maryon-park site, and of the site of the Lombard-wall school.

That application be made to Parliament in the session of 1910 for authority in respect of the Belvedere-road improvement.

Skating-rinks, Halls, etc.—Applications relating to the following were agreed to:—

Drawings, submitted by Messrs. Norfolk & Prior, of the Catford Central Hall Picture Palace, Sangley-road, Catford, which has accommodation for about 712 persons.

Drawings, submitted by Messrs. Norfolk & Prior, of the Catford Central Hall skating-rink, Sangley-road, Catford.

Drawings of a balcony capable of seating 317 persons, which it is intended to construct in the hall of a skating-rink proposed to be erected at the south-east corner of Church-street and King's-road, Chelsea (Mr. A. W. Hudson).

Drawings, submitted by Mr. E. Keynes Purchase, showing a proposal for adapting the ground floor of premises at No. 24, Tottenham Court-road, for use as a cinematograph hall.

A drawing, submitted by Mr. W. Hancock, of the Electric Palace (late Traders' Hall), Electric-avenue, Brixton. The hall will have accommodation for about 440 persons, and will be used for cinematograph entertainments.

Drawings, submitted by Mr. W. Hancock, of the Electric Palace which is in course of erection in High-street, Lewisham. The hall will have accommodation for about 630 persons, and will be used for cinematograph entertainments.

A drawing, submitted by Mr. W. Hancock, of the Electric Palace, No. 532, Oxford-street.

Drawings, submitted by Mr. I. Davis, of a cinematograph hall proposed to be erected at

Digitized by Google

No. 643, Holloway-road. The hall will have accommodation for about 612 persons.

A drawing, submitted by Mr. C. Barnard, showing alternative schemes for the provision of a heating chamber at the Elephant and Castle Theatre, New Kent-road.

A drawing, submitted by Mr. B. Crewe, showing a proposal to construct a permanent cinematograph chamber at the Empress Theatre of Varieties, Carlton-grove, Brixton, by enclosing a portion of a lavatory at the circle level.

Drawings, submitted by Mr. A. Prettejohn, showing a skating-rink proposed to be erected in Mare-street, Hackney.

A drawing, submitted by Mr. E. Newton, of Holy Trinity Parish Hall, Manor-lane, Lee. The hall has accommodation for about 400 persons.

A drawing, submitted by Mr. C. W. Garrard, showing a permanent cinematograph chamber proposed to be constructed at the Morley Hall, Mare-street, Hackney.

Drawings, submitted by Mr. L. H. Harris, showing proposals to make alterations at the Polytechnic, Regent-street.

A drawing and specification, submitted by Mr. F. Stebbings, of a cinematograph chamber proposed to be constructed at the Regent Theatre, Hackney-road.

A drawing and a specification, submitted by Mr. N. Evans, of the heating and lighting arrangements at the temperance billiard hall proposed to be erected in High-street and Court Hill-road, Lewisham.

Drawings, submitted by the secretary, the Temperance Billiard Halls, Ltd., of the temperance billiard hall proposed to be erected at the corner of Wandsworth-road and Brewery-street. The premises will consist of a billiard-room and café lounge.

Drawings, submitted by Messrs. Norfolk & Prior, of the Wandsworth Central Picture Palace, East-hill, Wandsworth. The hall has accommodation for about 660 persons.

Drawings, submitted by Messrs. Norfolk & Prior, of the Wandsworth Central Skating Rink, East-hill, Wandsworth. The rink has accommodation for 936 persons.

Hanwell Asylum: Additions and Alterations to Male Ward No. 19 *and General Bathroom.*—The Asylums Committee recommended as follows, and it was agreed:—

That the estimate of expenditure on capital account of 2,150*l.*, submitted by the Finance Committee in respect of the execution of additions and alterations to male ward No. 19 and the general bathroom at Hanwell Asylum, be approved.

New Bridge.—It was agreed that the estimate of expenditure on capital account of 7,500*l.*, submitted by the Finance Committee in respect of the construction of a new bridge over the waterworks river at Hackney Marsh, be approved.

Improvement.—It was also agreed that the estimate of expenditure on capital account of 27,200*l.*, submitted by the Finance Committee in respect of the widenings of Dalston-lane and Graham-road, be approved.

That, subject to the Hackney Metropolitan Borough Council agreeing to contribute one-third of the net cost of the improvement, the widenings of Dalston-lane and Graham-road, as provided in resolution, be undertaken.

Educational Architectural Work. — The General Purposes Committee, with reference to the resignation of Mr. T. J. Bailey, the Architect for the Education Department, now recommended that, as from January 1, 1910, the educational architectural work be placed under the charge of the Superintending Architect, and that the staff of the department of the Architect (Education) be transferred on that date to the department of the Architect. In March, 1907, the Committee proposed that Mr. Bailey's office should be abolished, but the recommendations were not moved in the Council, and Mr. Bailey consequently continued in his office until, in consequence of his having attained the age of 65 years, it became necessary to consider the question of the future conduct of his work.

The General Purposes Committee now reported that, after discussing a motion that a separate architect for educational purposes should be appointed, which on being put to the vote was lost, they decided that a sub-committee should consider the possibility of appointing an architect to discharge the duties of the Superintending Architect and a separate architect to supervise the Council's architectural constructional work. The sub-committee considered the matter, and resolved that in their opinion it would be undesirable that the statutory and constructional work should be performed by different officers. At the request of the sub-committee the Architect prepared a report as to the methods by which he would undertake the supervision of the Council's educational architectural work in addition to his present duties. His proposal was to create a section in the charge of an assistant architect to perform the duties before carried out by the department of the Education Architect. To this officer the Architect would, while not disturbing the basis of this organisation, by which ultimate responsibility for the efficiency of the work must be borne by the head of the department, delegate certain work, apart from questions of principle, staff, departmental control, uniformity in methods of construction, and contingent action with other sections of the department. The Architect further stated that it would be his aim from the outset to disturb as little as possible consistently with efficiency the present organisation of the Education Architect's department, so that the work might run on without break or hindrance. The sub-committee reported that after very full consideration they were satisfied that the interests of the Council would best be served by conforming to the principle which has before governed the formation of the several departments of the Council's service—namely, of allotting to one professional department the work which usually falls to that profession. They accordingly recommended that the educational constructional work be placed in charge of the Council's Architect, and the General Purposes Committee endorsed this view.

Mr. Key recommended that the Council should endorse the views expressed by the Education Committee last May, namely, that the educational architectural work should be amalgamated and placed under the control of one officer. Mr. Key contended that there should be a special officer to be held responsible for educational buildings. It was impossible that the Superintendent Architect of the Council could devote the time necessary to educational architecture alone. It was a retrograde step to put this work under the charge of the superintendent officer. He had received a communication from a number of architects who expressed their opinion that it was undesirable that the architectural work should be done by one official, as recommended by the General Purposes Committee.

The Rev. F. Hastings, in seconding the amendment, contended that there should be a special man for architectural work, which was distinct from other buildings. Special training was necessary for an architect for schools, and such an architect ought to have a free hand.

Mr. Norman said it was natural that the members of the Education Committee should like to continue the old arrangement, but the General Purposes Committee did not agree with the tendency towards separation and of watertight compartments. The first principle of efficient and economical administration was that various departments should be united under one professional head. Hence it was advisable that the educational architectural work and the ordinary architectural work should be in one department under one head. The non-provided school survey, for which Mr. Bailey's services had been retained, was now over, and now there was no reason for maintaining a separate architect and staff for education architecture. The only thing to do was, as recommended, to place the whole of the architectural work under one head.

Mr. Gray denied that concentration would be advisable from the point of view of the Education Committee. It was essential that the man who was charged with the erection and remodelling of schools should be an expert Now London had schools which needed remodelling, and such schools could best be dealt with by architects who could devote their sole attention to the planning of schools and improvement of buildings. No master architect could deal effectively with schools unless he had time to go abroad and study schools in all countries. Hence the imperative need for a specialist to be appointed to deal exclusively with educational school problems, and who could give his undivided attention to the subject of the schools. It was essential that a school architect should be in close touch with the Committee, and Mr. Riley would not have the time to pay the attention to the work which it deserved. The man who drew the plans should go to the Committee and be able to amend where necessary. It would be ludicrous to have an assistant architect, who would every time have to go to his superior before being able to make a slight alteration.

Mr. Dowton said there was a question of art, beauty, and design to be considered as well as uniformity. They did not want to impair school architecture just for the sake of unification. The indifference of the public towards architecture was deplorable. In America there was a keener interest taken in architecture that was the case here, and hence architecture was studied and discussed, with much resultant good. It would be a mistake for the County Council to sacrifice the artistic side of architecture merely to secure uniformity.

For the amendment in favour of a separate architect for education, the voting was thirty-three for and sixty-two against.

The recommendation of the Committee to place the educational work under the charge of the Superintending Architect was then adopted.

The Works Department.—The Committee recommended that the return of the principal works executed by the Council between November, 1892, and September, 1907, be placed on sale.

Mr. Johnson said that, in spite of all that had been said against the Department, the total balance of cost below final estimate amounted to over 100,000*l.*

Mr. Taylor moved that the recommendation be referred back, as the Report was not up to date.

Mr. Dew seconded, and said the ratepayers ought to have all the figures before them. If they did the result would not be unfavourable to the Department.

Mr. White said there was no desire to keep the report back, but it had been found impossible to issue it now. In a very short time the final report would be issued.

Mr. Taylor then withdrew his amendment.

Quantity Surveyors.—The Committee reported as follows:—

Standing orders Nos. 237 (1) and 238 (1) provide for the employment, in certain cases, of an outside quantity surveyor. The Council on April 3, 1900, approved a list of seven firms to be employed for architectural works, and this list was amended on July 28, 1903. The list of four firms for engineering works was approved on July 28, 1903. Five additional firms were added to the architectural list on July 25, 1905, in consequence of the Council becoming the London education authority, and the list was then made applicable to all the Council's architectural work. Applications are from time to time received from firms of quantity surveyors to be placed on the Council's list, and these have in the past been referred to the chief officers concerned for attention. We consider it desirable that the Architect and Chief Engineer should report to us periodically as to revising the list of quantity surveyors, and we submit a standing order accordingly. In this is incorporated the substance of standing order No. 239, which provides that work shall be offered in rotation to the surveyors on the list. We recommend—

(*a*) That the following be a standing order of the Council:—There shall be kept lists of firms of quantity surveyors to be employed by the council for (i.) architectural work, and (ii.) engineering work. Work is to be offered in rotation to the firms on the respective lists, and the lists shall be revised periodically by the General Purposes Committee.

(*b*) That standing order No. 239 be rescinded.

The recommendations were agreed to.

County Hall Embankment.—Mr. Dew called attention to a statement that men employed on the embankment in connexion with the County Hall were not being paid an extra 1d. per hour for night work.

Mr. Norman said the Committee were considering letters from the Labourers' Union and the contractors with reference to the matter.

Crosby Hall.—The Local Government Committee recommended that the exchange of a preliminary agreement between the Council and the University and City Association of London, Ltd., with respect to the re-erection of the fabric of Crosby Hall in connexion with the scheme for the erection of buildings to form the University Hall of Residence, Chelsea, and the settlement of the hours during which the public shall have access to the hall, be confirmed.

Mr. H. Percy Harris asked if the Chairman of the Committee could give any information as to the progress of this work. More than a year had passed since the matter was understood to have been settled by the Council, and yet now they found that, apparently, they had not got beyond the state of a preliminary agreement.

Mr. P. E. Pilditch replied that there had been some greater delay than the Council would have liked, but he was glad to be able to tell the Council that most of the difficulties which had cropped up had been overcome. Crosby Hall was now in course of erection, for the foundations were in, and within two or three weeks the actual fabric of the hall would be erected on the site.

The recommendation was then adopted.

MUNICIPAL WASHHOUSE, EDINBURGH. — A washhouse has been built by the Edinburgh Corporation for the inhabitants of Greenside district. The accommodation includes washing-room, drying-chamber, and a mangling and folding room, in addition to offices. The plans were prepared by Mr. Williamson, the City Superintendent of Works.

Digitized by Google

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hammersmith.—One-story shops in front of Nos. 266, 268, 270, 272, 274, and 276, King-street West, Hammersmith (Messrs. Farebrother, Ellis, & Co.).—Consent.

Hampstead.—A one-story shop in front of No. 291, West End-lane, Hampstead (Mr. T. P. Hartley).—Consent.

Holborn.—Retention of a clock over the porch at Pitman's Metropolitan School, Southampton-row, Holborn (Messrs. J. Smith & Sons).—Consent.

Islington, East.†—The retention of a one-story building on the northern side of Northampton-park, Islington, eastward of "Pulbro' Lodge" (the Consolidated Electrical Company, Ltd.).—Consent.

St. George, Hanover-square.—Enclosures to the porch in front of No. 32, Hill-street, St. George, Hanover-square (Mr. G. Chappelow for Mr. H. H. P. Bouverie).—Consent.

St. Pancras, South.—That the application of Mr. E. H. Draper for an extension of the periods within which the erection of buildings on the southern side of Euston-road, St. Pancras, between Tonbridge-street and Mabledon-place, and the erection of a one-story building to abut upon Tonbridge-street, was required to be commenced and completed, be granted.—Consent.

Strand.—The retention of an illuminated projecting sign in front of the Coliseum, St. Martin's-lane, Strand (Mr. H. Crocker).—Refused.

Fulham.—A projecting shop in front of No. 59, Rowallan-road, Fulham (Mr. E. H. Wallis or Mr. B. A. Boyton).—Refused.

Width of Way.

Hammersmith.—A one-story addition to No. 36, Willow-vale, Hammersmith, with a forecourt fence at less than the prescribed distance from the centre of the roadway of the street (Mr. A. G. Channer for Mr. J. Watts).—Consent.

Width of Way and Lines of Frontage.

Fulham.—The rebuilding of Stanley House on the south-western side of Farm-lane, Fulham (Mr. C. W. Stephens for the United Motor Cab Company, Ltd.).—Refused.

Lines of Frontage and Construction.

Wandsworth.—A wood and iron cycle shed of a temporary character in the grounds of the High School for Girls, Wavertree-road, Streatham, to abut upon the eastern side of Daysbrook-road (Miss Rita Oldham).—Consent.

Wandsworth.—An iron and glass shelter in front of the Theatre of Varieties, Balham High-road (Mr. B. Crewe for Electric Theatres, Ltd.).—Refused.

Width of Way and Construction.

Wandsworth.—A wood and iron building of a temporary character on the western side of Putney Bridge-road, Wandsworth (Mr. W. J. Harris).—Consent.

Space at Rear.

Westminster.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of a building at the north-eastern corner of Smith-square, Westminster (Messrs. Blow & Billercy for Lady Agnew).—Consent.

Whitechapel.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of Nos. 72, 74, 76, and 78, Old Montague-street, Whitechapel (Messrs. Moore-Smith & Bromley for Mr. J. Marks).—Consent.

Formation of Streets.

Paddington.—That at the request of Mr. H. T. Steward the Council do permit the retention of wooden fences or barriers across Biddulph-road and Ashworth-road, on the Paddington Estate, Sutherland-avenue, Paddington.—Consent.

Cubical Extent.

Clapham.—Extension of the workshop at the premises of Ross, Ltd., North-side, Clapham-common (Messrs. Searle & Searle for Ross, Ltd.).—Refused.

Uniting of Buildings.

Holborn.—Uniting of Nos. 102-104, New Oxford-street, Holborn, with No. 106, New Oxford-street (Mr. C. W. Oatley for Messrs. J. Lyons & Co., Ltd.).—Consent.

City of London.—A deviation from the plans approved for the erection of two division walls of less thickness than required by the Act in a building erected on the site of Nos. 10 and 11, Old Bailey, City, and the old Sessions House, so far as relates to (i.) the omission of the division wall between the two southern blocks, and (ii.) the omission of the enclosures to the southern staircase (Mr. P. Hoffmann).—Refused.

Finsbury, East.—The retention and formation of openings between (*a*) Nos. 7 and 9, Old-street, Finsbury, and a new warehouse at the rear, and (*b*) Nos. 7 and 9, Old-street, and No. 15, Old-street, and (*c*) No. 25, Old-street and a warehouse at the rear (Mr. H. O. Ellis for R. Moreland & Son, Ltd.).—Refused.

The recommendation marked † is contrary to the views of the metropolitan borough council concerned.

Architectural Societies.

THE ARCHITECTURAL INSTITUTE OF CANADA.

The *Proceedings* of the First General Annual Meeting, held in Ottawa on September 28 to 30 and October 1, have been issued in a pamphlet form. The President, Mr. A. F. Dunlop, opened the proceedings with a short address. The Reports of the Secretary, of the Committee on Legislation, and of the Publication Committee were read and adopted. Up to the time of the meeting the Institute numbered 139 members, and the names of 39 more architects who now applied for membership were read out. A long discussion took place as to the qualification for Associateship, the original proposal being that the candidate should have been two years in practice on his own account; this was modified by the addition of the clause "or shall have passed such qualifying examination as shall satisfy the Council as to his professional ability." Election to the Class of Fellows is to be a vote of the voting members taken by letter ballot according to a form prescribed by the Council; such ballots to be taken at Annual General Assembly or Special General Meeting, after a month's notice to all members. As was not unnatural at the First Annual Meeting, the proceedings were almost entirely occupied with questions of administration, and in view of this it was moved by Mr. Baker (Toronto) that meetings should be quarterly instead of annual. He said:—

"We have an illustration here of the annual meeting. The whole proceedings are filled with regular routine business. If we had those quarterly meetings they might be devoted to the reading of papers and to discussions connected with the practice of the profession. I think the profession demands and requires some papers to be read by its members, and some light thrown on the various phases of work throughout the Dominion. Those quarterly meetings would be just the thing for that. We might devote practically all our time to the reading of papers and their discussion. You must remember that we have no examinations in this Institute, and the least we can do for our members is to give them something in the way of papers and discussion."

After a good deal of discussion, a resolution on the subject was carried in the following form:—

"Other meetings of the Institute may be held half-yearly or quarterly, at such places and at such times as the Council may deem wise. Notice of such meetings and the business proposed to be transacted at the same to be sent to all members at least one month before such meetings are held."

We think it is a pity that Mr. Baker's motion for rendering four meetings compulsory was not adopted. But practically it will very likely come to that.

MANCHESTER SOCIETY OF ARCHITECTS.

The annual report of the Council of this Society shows that the aggregate membership is 265, viz.:—Fellows, 109; associates, 103; students, 53—making a total of 265, as against a membership of 257 at the date of the last report. Among the points specially mentioned in the report, it is stated that the Council has seriously considered the action of members of the Society who submit designs in architectural competitions when the conditions of such competitions have been deemed unsatisfactory by the Council, and, on the instructions of the members assembled in general meeting, has passed an additional by-law, of which the following is a copy:—

"A member shall be considered to have failed in the observance of a lawful regulation of the Society, or of a lawful regulation, by-law or order of the Council, within the meaning of Article 61 of the Articles of Association, and shall be liable to the penalties therein stated if he shall submit either directly or indirectly a design in any architectural competition the conditions of which are unsatisfactory to the Council and of which notice has been given to the members by the Secretary."

A committee has been appointed to consider the clauses of the Town Planning Bill at present before Parliament, and where advisable to communicate with local authorities and influence public opinion on the question. A committee has also been appointed to consider the subject of reinforced concrete, and the fact that the Manchester Corporation by-laws contained no provisions regarding the erection of buildings in this material. An intimation has been received that new by-laws bearing on the subject will be included in the next Bill submitted by the Corporation to Parliament.

The Council in July last suggested to the Royal Institute of British Architects that certain alterations should be made in the document called "Professional Practice as to the Charges of Architects," with a view to limiting the liabilities of architects for defaults of builders; corresponding alterations will also be required in the document issued by the Institute called "Agreement and Schedule of Conditions of Building Contracts." The Secretary of the Institute acknowledged the receipt of the suggestions and promised to lay them before his Council. During the year the attention of the Council has been called to two circulars issued to architects, which have openly offered commissions. The offenders were written to, and in both cases they sent apologies for the issue of the circulars and an assurance that the circulars would be withdrawn and that the offence would not be repeated.

The attention of the Council was drawn to the relation between a report prepared by the Manchester City architect respecting dry rot in and ventilation of buildings, and the by-laws of the Manchester Corporation; an effort was made to ascertain from the City Architect what, in his opinion, is the limit below which architects must not go in the provision for the ventilation of floors. In the end the City Architect stated that, in his opinion, the minimum proportional area of perforation through walls to area of floor could not in any way be definitely defined.

THE GLOUCESTERSHIRE ARCHITECTURAL ASSOCIATION.

A meeting was held in Gloucester on the 28th ult., the President (Mr. H. W. Chatters) in the chair. Others present included Messrs. W. B. Wood, E. J. Cullis, T. Malvern, E. A. Pryer, J. G. Crisp, G. P. Milnes, D. R. Lyne, and T. Overbury (Hon. Secretary). A resolution in favour of the statutory registration of architects was proposed, which gave rise to an animated discussion. The resolution was carried unanimously.

Legal Column.

THE DEVELOPMENT BILL AND ROADS.

WE think a feeling of satisfaction will prevail that the House of Lords in Committee have not amended the Development Bill so as to do away with the proposed Road Board by transferring its duties to the Development Commissions, but have left it as a separate body, and we think they have effected an important improvement in the Bill in two respects. They have enabled the Road Board to make advances to the highway authorities, not only in respect of new roads, but for the improvement of existing roads, or towards the extraordinary expenditure incurred by the highway authorities on the maintenance of roads in consequence of motor traffic. It is obvious that improvements on the existing roads and their better maintenance may in some

Digitized by Google

instances obviate the necessity for new roads being constructed at all, and co-operation between the Road Board and the highway authorities is to be encouraged as promoting efficiency and preventing dissention and unnecessary expenditure. The House of Lords have further improved this part of the Bill by inserting a provision in clear terms that the ratepayers are not to be rendered liable for the maintenance of new roads constructed by the Road Board. The second great improvement effected is the deletion from the Bill of the clause enabling the Road Board to acquire land to the extent of 220 yds. on either side of any new road. This would work out, it was stated, at eighty acres to every half-mile of road, and, quite apart from this provision having a bearing upon the theories of the Government as to "increment," it is clear that the powers to acquire such vast tracks of land would cause a feeling of distrust and delay any scheme in itself desirable. It is undesirable that the Road Board should have powers to speculate in land and to carry out building schemes in connexion with their duties as a new road authority, and the "increment" following upon the construction of motor tracks is very problematic. Lord St. Aldwyn in withdrawing his amendment which would have conferred the duties of the Road Board upon the Development Commissioners, said that the institution of a Road Board would lead to the assumption by the State of the cost of maintaining the main roads of the country, but there were difficulties in the way. This appears to us an end entirely to be desired, and it is for this reason we are glad that the amendment was not pressed. The establishment of the Road Board is, at any rate, one step in the right direction, and may lead to the establishment of State trunk roads maintained out of the taxes to the relief of the ratepayers, who at present bear uneven burdens according to the amount of through traffic which passes through the various counties and districts.

The Finance Bill and Recent Amendments.

The amendments in the Finance Bill still leave much to be desired in one or two particulars, to which we have already called attention at earlier stages of the Bill. The exemption of land from undeveloped land duty where 100*l.* per acre has been expended upon it within the last ten years is still conceived in such narrow terms, *i.e.*, developing roads or making sewers, that many useful operations, such as making wharves, railway sidings, etc., are apparently excluded.

The Bill, moreover, does not adequately protect open spaces or playing grounds. The necessity of forming definite schemes and unalterable agreements will prejudice the existence of many open spaces and playgrounds which are enjoyed without formal agreements from year to year until a real demand for the land occurs, and they are required for building or other purposes, and too much discretion is also given to the Commissioners. The owners of such land will have no direct interest in approaching the Commissioners to save those small open spaces and playing grounds from taxation, they will naturally avoid all unnecessary transactions with the valuing and taxing authorities, and those open spaces will be lost. From a Government which promotes a Town Planning and Housing Bill the most liberal treatment in respect of open spaces and recreation grounds might reasonably have been expected.

Again, the definition of what is to be deemed to be undeveloped land is still unsatisfactory. The clause now reads, "For the purposes of this Act land shall be deemed to be undeveloped if it has not been developed by the erection of dwelling houses or of buildings for the purposes of any business, trade, or industry other than agriculture (but including glass-houses or greenhouses). We have frequently called attention to the necessity of inserting the words, in brackets as otherwise the most highly developed land near London, that used for forcing fruit and vegetables, would be treated as undeveloped. The question now arises, what extent of land is to be considered developed by the buildings or glass-houses erected upon it? In the case of dwelling houses some definite allowance of land is made to go with them, but in the case of business premises or glass-houses no indication is given in the Bill, and the matter is left for decision by the Commissioners. How are the Commissioners to decide these questions of detail? Their number would have to be legion, and even then, should the tax-payer be left in such absolute uncertainty as to whether or not his property is liable to duty?

A Drainage Question.

The case of East Barnet Valley Urban District Council *v.* Stallard, only heard in the Chancery Division in August, has already reached the Court of Appeal. The case will be found noted in the *Builder*, August 14 last, where the facts are fully stated. The action was brought by the Council for a declaration that the defendant was not entitled to connect any sewer or drain from that portion of his premises which lay outside the plaintiffs' district with any of their sewers except on terms and conditions to be settled under sect. 22 of the Public Health Act, 1875. The defence was that the drains or sewers had so been connected by the plaintiffs' own act without the imposition of any terms, and they therefore could not reopen the question. Before 1895 the house drainage went to a cesspool with an overflow into a pond, both of which were in the plaintiffs' district, but from the report of the case it does not appear whether the house itself stood within or without the plaintiffs' district. The stable and outbuildings drained along another drain which connected somewhere between the cesspool and the pond. The overflow from the pond went into a storm-water drain. After 1895 the pond became a nuisance, and the defendant, at the instance of the plaintiffs' surveyor, connected the cesspool with the storm-water drain by a 9-in. pipe. In 1897 the plaintiffs, without consulting the defendant's predecessor, turned the storm-water into a soil sewer, and it was not until 1900 that they approached him suggesting terms. In 1902 the plaintiffs extended their soil sewer and connected it direct with the 9-in. pipe, and they again suggested terms, but no arrangement was ever arrived at. In 1906 the present defendant purchased the premises and put in extra baths and conveniences, but he abolished the stables and farm-buildings, and the volume of drainage was not increased. The Court of Appeal upheld the findings of the judge below, that these internal alterations did not increase the burden on the plaintiffs' sewer, and that no new connexion was being made within sect. 22 of the Act, and that a permission given for value could not be revoked. The effect of the decision appears to be to place persons outside the district on the same footing as persons inside it when once a connexion with the sewers has been sanctioned, as the Court followed a case decided under sect. 21, which applies to premises within the district (Brown *v.* Dunstable Corporation, 1899), and held sect. 22 to have no application. The decision is very important, and we may have to refer to it again when it is fully reported.

Access to Flats.

The case of Lewis *v.* Ronald once again draws attention to the law relating to those whose business takes them to flats. A fishmonger's assistant went to deliver fish at some flats at about 5 p.m. on a November evening. He found the tradesmen's entrance and descended the steps, but at the bottom of the flight it was dark, and after groping about he fell down a second flight of steps and sustained injury. He sued the owner of the block of flats in the County Court and obtained from a jury a verdict for 35*l.*, but the judge entered judgment for the defendant, and on appeal to the Divisional Court this judgment was affirmed on the ground that there was no invitation from the landlord to anyone to walk about in the dark. The Court of Appeal had to consider a somewhat similar case in Huggett *v.* Miers, noted in the *Builder* May 30, 1908, but there was one distinction between the circumstances in that case and those in the present case in that there the tenants of the flats undertook to light the staircases, whereas here the landlord had contracted with his tenants to undertake that duty. Such a contract between the landlord and tenant may possibly hardly affect the rights of parties strangers to the contract, but it would make this difference that in the former case an action would lie against the tenant, whereas in the present case the person injured seems left without remedy against either landlord or tenant. The law does not appear very satisfactory on this point. If the staircase was structurally defective the landlord would have been liable. This was decided in Miller *v.* Hancock (1903) by the Court of Appeal, but in Huggett *v.* Miers the Court of Appeal declined to extend the principle to staircases insufficiently lighted. When the landlord retains control over the approaches and undertakes with his tenants to light them, it would seem reasonable that he should be liable to strangers for deficient lighting as well as for structural defects on the principle laid down in Miller *v.* Hancock, viz., that when a landlord lets out premises in flats he knows that persons having business with his tenants must have access over the common approaches, and therefore there is an implied undertaking that they shall be maintained in a reasonably safe condition for the purpose. The real distinction between want of light and a structural defect would appear to be that in one case the danger is obvious, and the plaintiff may have difficulty in proving that he was not guilty of contributory negligence, whereas a defect may not be obvious, but in the nature of a trap. These are, however, considerations of fact and not law, and the law as at present laid down seems very hard on those visiting flats on business.

The Prevention of Corruption Act: Surveyor's Fees.

The Divisional Court has just had to consider a Report of a Committee of the Law Society in reference to a solicitor whose conduct was brought before the Court in consequence of his having been convicted before a Court of Summary Jurisdiction for offences under the Prevention of Corruption Act, 1906. The offence had apparently consisted in the solicitor having accepted or detained some portion of the fees of a surveyor whose services he had been instructed to engage without the knowledge of his own client; the contention of the solicitor being that as he would obtain no costs from one side he was entitled to receive this commission from the other side. The Court, considering all the circumstances of the case, made no disciplinary order, feeling that it was a case where leniency might be shown, and we only refer to the matter because of the general observations of the Court on the question of solicitors and surveyors and their fees. The Committee of the Law Society had reported "With regard to the alleged practice of solicitors sharing fees with surveyors instructed by them, the Committee know of no such practice." The Court said this must mean no such recognised practice, because before the passing of the Prevention of Corruption Act it was notorious that such practices were acquiesced in not only by members of the above, but also of other professions. The Court then stated that the course to be adopted in such cases was to give due notice of the receipt of such commissions. It is well that this should be remembered—the Act does not render

Digitized by Google

such commissions illegal, but it requires openness between the parties concerned in order to avoid the introduction of any corrupt motive.

EMPLOYER AND EMPLOYED.

The case of Harper *v.* Linthorpe Dinsdale Smelting Company raised a curious point. It was a claim by a workman for damages for loss of time while he was waiting to be paid. The plaintiff was a bricklayer, and his employment terminated by notice at 6 a.m. one morning, he having worked the night shift. He attended at the office for payment at 6 a.m., but there was no one in attendance, and he waited until 10.45 a.m., when he accepted the amount due to him, but proceeded against his employers for 3s. 11d. in respect of the time he lost, and the County Court judge gave him judgment for this amount. The Divisional Court reversed this judgment, acting on the principle of law that if a creditor accepts payment of his debt before taking action no subsequent claim for damages will lie. Besides this technical point the Court found that there was no custom that if a man was kept waiting the time should be paid for, nor was there any implied contract in this case to that effect. The man had waited voluntarily solely for his own purposes.

Engineering Societies.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

AT a meeting of the Council of the Institution, held on October 27, fourteen applications for membership and seven for studentship were considered. Of the former twelve were accepted, of the latter seven. The roll of the Institution is now—members, 630, students 89; total, 719. It was considered advisable that a class of associate members should be attached to the Institution, such associate members to be entitled to the privilege of corporate membership, and it was suggested that the following should be the clause in the by-laws in respect thereto:—

ASSOCIATE MEMBERS.—A candidate for election or transfer to the class of Associate member must produce evidence to the satisfaction of the Council:—
(1) That he
(*a*) has received a good general and scientific education;
(*b*) has been regularly trained in those branches of engineering comprised within the duties of a municipal engineer;
and (*c*) has had subsequent employment in the service of any municipal authority, of which one year at least has been spent in an important position of responsibility in the direction or design of municipal work;
or (*d*) has had such experience in the design or execution of important engineering work for any municipal authority as to qualify him in the opinion of the Council for the distinction of Associate membership.

The opinions of members on the proposal, to be submitted before the next Council meeting, to be held November 27, are invited. It was suggested that "The Council shall at their first meeting after the annual election have power to appoint an honorary librarian from among the members of the Institution, this official to be an *ex-officio* member of the Council until the next annual election." The opinions of members are invited on this proposal also.

JUNIOR INSTITUTION OF ENGINEERS.

The annual general meeting was recently held at the Royal United Service Institution. The Council's Annual Report showed that the membership has increased to 1,063, eighty-five elections and transferences having taken place during the past year. Nine ordinary meetings had been held and thirty-nine visits to works made, covering practically every branch of engineering. A paper was read by Mr. T. A. Watson (member) on "The Reinforced Concrete Construction of the New General Post Office Buildings, London." After giving a general description of the building the author proceeded to deal with the various considerations affecting the design and construction of the walls, during which comparison was made to walls of similar strength constructed in brick. The retaining walls, floors, method of reinforcing and columns were treated, dimensions and number of reinforcing bars. Points in connexion with jointing, stirrups, and special features in the building were next touched upon, including floors, etc., on cantilevers, footbridge, chimney, tunnels under King Edward-street, and staircases. The methods of dealing with the difficulties which were met with during construction of the retaining walls, etc., were described, and the composition and mixing of the concrete used in the work were then entered into. The paper concluded with questions relating to testing of steel and experiments with tests columns.

THE ILLUMINATING ENGINEERING SOCIETY.

The opening meeting of this Society will take place on Thursday, November 18, at 8 p.m., at the premises of the Royal Society of Arts, John-street, Adelphi, when a brief report of the progress of the Society will be presented by the Hon. Secretary, and the inaugural address will be delivered by Professor Silvanus P. Thompson, D.Sc., F.R.S., the first President of the Society.

BELGIAN GLASS AND CEMENT.

THE glass-making industry of Belgium (according to a report of Consul-General Sir Cecil Hertslet to the British Foreign Office) has been declining for several years past. The total output in 1908 was 221,313 tons, with a value of 2,755,792*l.*, showing a decrease of 38,640 tons, and 618,632*l.*, as compared with 1907. The quantity of plate glass exported to Great Britain in 1907 was 16,140 tons, and in 1908 only 12,155 tons; the quantity of window glass sent to Great Britain in 1907 was 50,367 tons, and in 1908 48,087 tons. Prices in 1908 remained at an exceptionally low level. Great Britain and the Colonies continue to be responsible for more than half the plate glass and nearly half the window glass exported from Belgium. As regards the outlook for 1909 and particulars of the trade for the first six months of the present year, little of a really encouraging nature can be said. Early in May there were twenty-four furnaces in activity out of a total of forty-one, but still the production is in excess of the demand. This over-production has the effect of keeping prices down, but the drop must have a limit, as it is impossible for manufacturers to continue indefinitely to produce at a loss. It is also stated that the number of workers in the window-glass industry is rapidly diminishing. The statistics of exports of both plate glass and window glass during the first six months of 1909 are, however, in excess of those during the corresponding period of 1908. Plate glass sent to Great Britain, for instance, increased from 6,047 tons during the first half-year of 1908 to 6,389 tons in 1909. In regard to window glass Great Britain (though still Belgium's chief customer) received only 21,393 tons in the first half of 1909, compared with 23,466 tons in the first half of 1908. On the other hand, the exports to Japan increased very considerably, and that country, next to the United Kingdom, is now the largest receiver of Belgian supplies.

The year 1908 was one of the worst ever known in the Belgian cement trade, which has hitherto, as a rule, shown a considerable augmentation with every year. The Belgian industry must necessarily exist primarily by the demand from abroad, since, though the needs of Belgium itself are considerable, the production exceeds many times the whole local demand. It is, therefore, the export trade upon which manufacturers most largely rely for their prosperity, and of recent years many countries which hitherto imported cement have now taken to manufacturing on a large scale for their own requirements—notably, the United States of America. The total cement exports for 1903 amounted to only 573,757 tons, of a value of 590,970*l.*, compared with the 1907 figures of 727,122 tons and 814,377*l.* The exports to Great Britain, which used to be the principal market for Belgian cement, show a large falling off, amounting in actual figures to 13,461 tons and 21,868*l.* The exports to the United States fell from 81,137 tons, value 90,873*l.*, in 1907 to 22,897 tons, value 23,584*l.*, in 1908. For the half-year just completed (to June 30, 1909). Belgian cement exports have increased in the aggregate, but Great Britain no longer occupies the chief place as a receiver, and, adds the Consul-General, "it is perhaps satisfactory that this is so, for it shows that the buyer in the United Kingdom is becoming more wary of purchasing natural Belgian cement while under the impression that he is being furnished with Portland cement, the artificial and superior quality. I will refrain from any observations upon the methods of certain Belgian cement manufacturers in disposing of their goods in a manner tending to indicate a British source of origin. I have so frequently drawn attention to the matter that there is nothing further to be said on the question. However, the great demand for Belgian cement which used to obtain in the United Kingdom is undoubtedly becoming much less, whatever the reason for the decline, and the Belgian manufacturer has had to search further afield for markets for his produce. The Argentine Republic is now one of the principal buyers, while Germany and the Netherlands also take considerable quantities."

INSTITUTE OF SANITARY ENGINEERS, LTD.

AT a sessional meeting of this Institute, held on Wednesday evening, a paper, by Mr. C. T. Evennette, was read on "Oriental Sanitary Engineering."

The author said that, broadly speaking, engineering in the Orient does not differ from that obtaining in the West, when carried out by Europeans. In most townships the municipal engineer would find distinctive features attaching to his work which were probably absent from another township. In India there were many castes, and that caste which was in the majority generally governed the lines upon which progress was desirable to be made pacifically. Each caste of people had its distinctive domestic customs and its prejudices, which the engineer soon found he must consider if he wished to make progress in sanitation at all. Introduce a pipe-water supply into a town, and a large number of the population would refuse to take advantage of it, and would continue to draw their pot water from wells, which were probably absolutely insanitary owing to defective steining allowing subsoil water to percolate, or would take water from deadly shallow wells: close the wells, and one would almost certainly have a riot to contend with. Construct public latrines, and unless they were constantly watched the surrounding ground would be fouled by a class who considered it defilement to enter them. Erect washhouses for the use of the caste who wash clothing, and they would at once proceed to raise the amount of the domestic washing bill to cover the small charge made for the use of such washhouses, and then, if not closely watched, take the clothes to their time-honoured washing-places to enable them to retain to themselves the extra few pence charged. These old washing-places were usually places in the open near small pot or shallow wells, made of earthen rings placed one above another as the well was sunk. A few large slabs of stone were collected near these wells, and upon these the dhobie washes the linen, whilst the dirty water found its way gradually back into the well. Under such circumstances, it was not at all surprising that zymotic diseases continued to flourish steadily, in spite of the sanitary efforts of the engineer and the doctor.

As to roads, all the best recognised principles in Great Britain were to-day practised in the East. It was desirable, however, for the tyro to remember that the amount of binding material required in making a road is to an extent dependent on the rainfall; places subjected to very heavy falls of tropical rain should have roads as flat as possible, otherwise they were cut up into ruts.

Road watering was of great sanitary importance in hot countries, as besides its protective influence on the road it prevented the distribution through the wind of decaying refuse. The native overseers, however, unless well supervised, would have the roads watered whilst the sun was still blazing, and by the time people went out for evening exercise, etc., the roads were dry.

In the majority of rural districts, and in the most thickly populated but poorer parts of many large towns, there were no sanitary conveniences worthy of the name in or at all near blocks of houses. Since all surface drainage water contains a large amount of matter in suspension, it was desirable that the liquid should flow as quickly as was compatible with the safety of the material of which the drains were constructed. During the dry season there would be only sullage and a small amount of domestic water to be dealt with; whilst in the rainy season the quantity of water was great. The difficulty was to have such a section of drain as would give a sufficient velocity in the dry season, and still be serviceable during the rains. The saucer-shaped drain was cheap and easy to lay, and,

Digitized by Google

superficially, the easiest to keep clean by manual labour. It was, however, almost the worst shape to put down, as, during the hot season, the very small amount of water (and that largely sullage) which flowed spread out with very little flow, and also formed a film on the sides of the wide drain from which gases of decomposition quickly emanated. Any form of drain having angles or a flat bottom were equally objectionable, as the former were very difficult to keep clean, and the latter were not self-cleansing. In fact, this last was worse than the saucer shape. The best form was what is sometimes called the peg-top section. This had an invert of about 135 deg., with a small radius, and straight sides above it tangential to the ends of the curve. According to the amount of water required to be dealt with suitable dimensions for all seasons could easily be arranged. Covered-in drains, as distinct from a sewerage system, were an abomination in the East, as they were almost impossible to keep clean. A compromise could be arranged, however, when necessary, by having removable covers to the peg-top drain. These covers should be made in short lengths, so that they could be lifted to allow of thorough cleaning of the drain.

The question might be asked, where does such sullage usually find its way to? Very often it found its way to the end of the line of masonry drains, only to flow into earthen drains at the end. The reason was often an insufficiency of public funds to continue the line of masonry drains right outside the township, and there to dispose of it scientifically. It was possible, however, for the municipal engineer, who desired progress, to mitigate these evils with very little cost until further funds were at his command. He could construct a small masonry tank 4 ft. or 5 ft. deep at the end of the line of masonry drains, and at a slightly lower level. This tank should be divided into two compartments by a partition wall—the compartment nearer the end of the drain should be about a third of the size of the other. Holes should be left at the bottom of the partition wall, and an iron grating fitted just below the outfall of the drain into the first compartment. A grillage should be fitted across the larger compartment about a foot from the floor, above which grillage cinders, broken brick, or stone should be put in, gradually diminishing in size up to the top. By upward filtration of the liquid discharged from the drainage line in this manner a great nuisance and danger to health was thus minimised, as the effluent could then be safely left to meander along the earthen drainage line beyond such a filter. If the amount of sullage from the masonry drains was very small, it would be sufficient perhaps to excavate a length of about 20 ft. or so, to a depth of 2 ft. of the earthen drain, commencing at the end of the line of masonry drains, and to fill this excavation with suitable available metal.

Sewerage systems, where adopted, were usually on European lines. Owing to the great difference between the amount of water to be dealt with in the dry and rainy seasons, a separate system of drainage was generally preferable. No combined system would prove satisfactory where the rainfall in the monsoon exceeds 30 in., for the sewers needed to be made such a size that they could not be self-cleansing in the dry season; besides which there was a greater danger from the formation of sewer gas when such a system was comparatively empty.

The author then dealt with a few points bearing on the question of sewage that an engineer going to India should remember. As to catchpits, he said that these, with by-passes, were advisable with any Eastern sewage system, owing to the natives' habit of cleansing cooking utensils with ashes or sand, whilst some invariably used leaves instead of platters, etc., for eating purposes, which were thrown away after use; some castes used broken tiles, road metal, stones, palm leaves, or any such matter which happened to be handy, instead of toilet paper. All these stuffs found their way to a large extent into the sewers, and when mixed with night soil formed a hard substance which was difficult to deal with. For the same reason the gradients of sewers required to be greater than ordinarily obtain in Great Britain, as the latter were insufficient to remove such general solid matter as found its way into Eastern sewers. Thus, when detritus found it way in, 5 ft. per second might be allowed, and where a domestic sewage 6 ft. per second. Exceeding caution had to be used in providing house connexions. The habits and conditions of life of the natives were very hard to combat. In towns large tenement houses abounded, and in each living-room there was a washing-place, usually about 30 in. square, with a wall 3 in. high around it, in a corner, which was often used for other purposes. Under such circumstances drainage connexions, as understood in Great Britain, were impossible, as they would become hopelessly choked. In such cases night soil was disposed of by hand removal, and the sullage should be dealt with by providing down pipes discharging over traps at the foot, the sullage being carried thence along open drains outside. These open drains should be carried along to drain a convenient number of houses, and at the end one sewer connexion was made. By this means any solid substance was arrested, and all fear of escape of sewer gas into houses was avoided. Houses of better class having water-closets must, of course, have separate sewer connexions. Personally, he thought there was more danger to public health in providing water-closets in most natives' houses in India than in the want of them. These remarks did not refer to the large or substantial houses of native gentry, but even in their case it was often doubtful wisdom to provide direct sewer connexions, as their menials were none too careful.

Since water-closets were not recommended in small native houses, public provision for their convenience outside became necessary. A latrine should be supplied within a convenient distance of a block of houses. These latrines vary in design, and were to be found in every town in India. All were designed to enable the native to sit on his heels with his feet on two raised footrests. Where there was a water-carriage system the latrines were connected directly to that system. Where the water-carriage system was only a partial one the solid and fluid matter passed along a sloping shoot to buckets in the rear outside a curtain wall suitable holed. These buckets were emptied into a night soil cart, which carried the matter to the nearest night soil depôt, where it was emptied into the sewer. The dry earth system was much the same as elsewhere. In no public convenience should good brass, etc., fittings be used—the natives would surely steal them. Everything should be bolted, and fittings made of iron.

The author then referred to night soil depôts, public bathing places, public washhouses, municipal buildings, latrines, markets, hospitals, building material, etc.

As to building material, he said that a very large number of sun-dried bricks were made in India. These were called "kutcha" bricks, in distinction to burnt or kiln bricks, which were termed "pucka." These two terms were also colloquially used to express ripe and unripe, good and bad, permanent and temporary, etc.; *e.g.*, a "pucka" appointment was a "permanent" one. There was a variety of limestone extensively found in India called "kunkur," which was most useful. It was a subsoil tufa formed by the depositing of calcareous matter extracted in particles from sand and clay beds by surface waters, and redeposited in a concentrated form. When the redeposit took place in a clay bed a hydraulic limestone was the result. It was necessary to remember that lime made from kunkur—which was a marl lime—would not stand any admixture with such material as powdered burnt clay or brick without such materials lessening its natural strength. In making mortar in India a small quantity of very coarse sugar called "goor" was often used with distinct advantage to the strength of any fat lime. In this matter it should be remembered that no sugar must be used for any mortar made partly with powdered brick, termed in India "soorkee." "Soorkee" mortar was made of one of lime, one of sand, and one of powdered burnt clay or brick, except when rapid setting was required, when the proportion of soorkee was increased and sand decreased. A very good artificial cement was made from one of soorkee to one of lime. Regarding timbers in construction work teak and sal wood best resisted attacks by insects, while the Banyan tree wood, although useless for ordinary work, being light and brittle, was very useful under water for use as well curbs, etc. Timber from the cotton tree is also very useful for work under water.

LYONS PUBLIC WORKS.

THE Lyons Municipality continues to vindicate its claim to be one of the most progressive in France, and its present list of projected works is comprehensive and costly enough to absorb its energies and revenues for some years to come. A beginning has been made with the building of slaughter-houses, public urinals, and various minor buildings, and the programme already voted, and with which some progress is likely to be made this year, further includes three new bridges, twelve schools, water-service improvements, a refuse destructor, and a crematorium. Other projected schemes not yet actually voted are the reconstruction of one of the existing bridges over the Saône, the building of a public washhouse, and the provision of additional incandescent lamps for the lighting of the town. Another project under consideration is the disuse of the great general hospital, the Hôtel Dieu, whose foundation is said to date from the reign of Childebert (VIth century), and its conversion, after the practical rebuilding of all but the Renaissance façade, with its commanding central dome, into a general post-office—a public building in which Lyons has, rather curiously, hitherto been lacking. This scheme will involve the erection of a large town hospital elsewhere on the outskirts of Lyons, capable of holding at least 1,000 beds, at an estimated inclusive cost of 400,000*l.* That part of the site of the Hôtel Dieu not required for the post-office could be sold for building purposes, so that a new quarter might be laid out, and by this means the municipality calculates to recover 240,000*l.* Another contemplated enterprise is the provision of a complete sewerage system to replace the existing primitive cesspool system: this would entail an expenditure of many millions of francs. Finally the municipal authorities have placed in the forefront of their programme an ambitious scheme for the creation of an adequate river port at Lyons, and the utilisation of the Rhône. The Municipality have decided to buy from the State the former Archiepiscopal Palace, expropriated under the Separation Law, and to instal in it the fine public library of 280,000 volumes, 24,000 manuscripts, and 20,000 prints, at present housed in two separate buildings.——A welcome reform has been introduced by the present municipal administration in the shape of a modification of the former draconian regulations governing the architecture of the frontages in the streets of Lyons. The new regulations for the first time give some scope to the architect by allowing balconies and ornamental façades, and a competition has been set on foot by the Town Council for the best designs for frontages. This step has been acclaimed on all sides as a much-desired innovation.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Domestic Economy and Handicraft Centres.—A report was presented dealing with the additional accommodation necessary. With regard to cookery centres, there is a deficiency of 40,000 places, needing the provision of 266 centres. Of these eleven are needed for cookery, eighty-three for laundry, and 172 for housewifery. The report suggests that at least ten new centres shall be provided every year. The capital cost of a centre, exclusive of the cost of site, averages 750*l.* With regard to handicraft centres, there is a deficiency of 12,000 places, necessitating the erection of sixty centres. It is pointed out that the cost of such a centre is about 650*l.*, excluding, of course, the site. The report recommended that ten new handicraft centres should be built every year. The report was adopted, and referred to the County Council.

Proposed New Elementary Schools and Enlargements.—The Accommodation Sub-Committee submitted the subjoined statement giving particulars of the cases where the Council has decided to accept tenders for the erection of new permanent elementary schools, and for the enlargement of existing schools:—

New Elementary Schools.	
Dingle-lane (Poplar)	740
Cow-lane (Rotherhithe)	585
Buxton-street (Whitechapel)	600
Hitherfield-road (Wandsworth)	370
Lauriston-road (Hackney, S.)	320
Shelburne-road (Islington, E.)	495
Fairclough-street (St. George-in-the-East)	968
Torriano-avenue (St. Pancras, E.)	645
Camden-street (St. Pancras, E.)	440
Barnsbury-park (Islington, S.)	500
"The Reay" (Brixton)	304
St. Mark's-road (Kensington, N.)	304
Morpeth-street (Bethnal Green, N.E.)	300
Manor-lane (Lewisham)	817
Enlargements—	
Mansfield-road (St. Pancras, N.)	394
"Oliver Goldsmith" (Camberwell, N.)	366
Barrow-hill-road (Marylebone, E.)	323
Queen's Head-street (Islington, S.)	253
Amberley-road (Paddington, N.)	644
Essendine-road (Paddington, N.)	413
Canonbury-road (Islington, E.)	317
Maryon-park (Woolwich)	250

New School, Sherington-road, Greenwich.—The tender of Messrs. W. Johnson & Co., 13,212*l.*, was recommended for the erection of a higher school for 500 children. Architect's estimate, 14,456*l.*

Waldron-road Site, Wandsworth.—For the erection of a school for 160 defective children the tender of Messrs. J. & M. Patrick, 5,430*l.*, was recommended. Architect's estimate, 6,036*l.* The contractors express willingness to do joinery and timber work in London instead of at Rochester.

Digitized by Google

NOVEMBER 6, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 12s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 3d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, NOVEMBER 5.

The Architectural Association.—Mr. W. D. Scott-Moncrieff on "Drainage and Sewage Disposal," 7.30 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Professor C. Gourlay, B.Sc., on "The Building a House." Illustrated. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Professor H. R. Kenwood, M.B., on "Water Composition, Pollution, and Purification." 7 p.m.

Society of Engineers.—Dr. David Sommerville, B.A., on "Some Observations on the Chemistry and Bacteriology of Sewage Purification." 7.30 p.m.

MONDAY, NOVEMBER 8.

Surveyors' Institution.—The President, Mr. Alexander Rose Stenning, will deliver an Opening Address. 8 p.m.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. E. L. Bates (The British Luxfer Prism Syndicate) on "Fire-resisting Glazing." 8.15 p.m.

TUESDAY, NOVEMBER 9.

The Institute of Sanitary Engineers (Students' Lecture).—Mr. A. J. Martin, M.Inst.C.E., on "Scavenging and Disposal of Refuse." 7 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. E. Worth on "Water Supply, Sources of Supply, and Distribution." 7 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher, VI.—"Greek Architecture: the Mycenæan Period." 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy"—IV. 6 p.m.

Institution of Civil Engineers.—(1) "The Single-Phase Electrification of the Heysham, Morecambe, and Lancaster Branch of the Midland Railway," by Messrs. J. Dalziel and J. Sayers. (2) "The Equipment and Working-Results of the Mersey Railway under Steam and Electric Traction," by Mr. Joshua Shaw. (3) "The Effect of Electrical Operation on the Permanent-Way Maintenance of Railways as Illustrated on the Tynemouth Branches of the North-Eastern Railway," by Dr. C. A. Harrison, M.Inst.C.E. 8 p.m.

WEDNESDAY, NOVEMBER 10.

The Quantity Surveyors' Association (Caxton Hall, Westminster, S.W.).—Mr. William Woodward on "Quantities and the Quantity Surveyor from an Architect's Point of View." 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. E. Worth on "Sewerage." 7 p.m.

Royal Sanitary Institute (90, Buckingham Palace-road).—A discussion, to be opened by Dr. G. J. Fowler, F.I.C., on "The Quality of Effluents in Relation to Standards." 8 p.m.

Northern Architectural Association.—Opening address by the President, Mr. G. T. Brown. 7.30 p.m.

THURSDAY, NOVEMBER 11.

The Carpenters' Company, Carpenters' Hall, London-wall.—Mr. J. Bartlett on "Building Materials, etc." 7.30 p.m.

Institution of Electrical Engineers.—Opening meeting. Presentation of Premiums, and Inaugural Address by the President, Dr. Gisbert Kapp. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. E. Worth on "Sewage Disposal." 7 p.m.

FRIDAY, NOVEMBER 12.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. E. Worth on "Scavenging, and Disposal of House Refuse." 7 p.m.

Fifty Years Ago.

FROM THE *Builder* OF NOVEMBER 5, 1859.

VENTILATION OF PUBLIC PLACES OF ASSEMBLY.

I WOULD call the attention of architects to one of the plans for ventilating mines, viz., by revolving fans to suck out the foul air, and suggest whether they could not be introduced into the space between the ceilings and the roofs of our places of worship and assembly. I believe that models of the various kinds of fans can be seen gratis at the Museum of Practical Geology, Jermyn-street, where the best could be selected, and any clockmaker could arrange a simple apparatus to keep it going for an hour or two at a time. The clockwork should be placed between the ceiling and the roof, and a circular tube be fixed above the ceiling, to contain the fan. The clockwork might be wound up from below like a Dutch clock, by pulling up the weight by a cord passing through the ceiling. I would suggest that where there are hollow-iron pillars to support galleries, fresh air might be introduced through them say at a height of 6 ft., in addition to flues in the walls and gratings in the aisles. G. H. L.

*** Such an arrangement to produce a current has been patented more than once.—ED., 1859.

*** The remark of the then Editor, that such an arrangement has been patented more than once, shows how slow that generation was to take up the idea that special ventilation was necessary for a crowded public building.—ED., 1909.

Illustrations.

PORTRAIT OF DR. ARTHUR EVANS.

AS has been our usual custom, we give in this issue a portrait of the recipient of the Royal Gold Medal of the Institute of Architects, which (as mentioned on another page) was presented on Monday night to Dr. Arthur Evans, the discoverer of the palace at Knossos in Crete.

We need not here enlarge on the claims of Dr. Evans to this distinction, which are well known to all our readers.

The portrait is reproduced from a photograph of a picture painted by Sir William Richmond, which shows the distinguished explorer surrounded by some of the objects discovered in the palace at Knossos.

THE PONTE NOMENTANO, ROME.

AMONG the many remains of antiquity with which the Roman Campagna is still covered none are more interesting and few are more picturesque than the ancient bridges which still span the Tiber, the Anio and the smaller streams. The aqueducts are ruined and dry, and the tombs rifled and tenantless, but over these bridges flows the stream of traffic as it had done for the last two thousand years, while the names of the Ponte Molle, of the Ponte Lucano, and the Ponte Nomentano are almost as familiar to the students of history as they are to the inhabitants of Rome itself.

The four bridges over the lower part of the Anio, the ancient Teverone, below the great falls at Tivoli, are known as the Ponti Salario, Nomentano, Mammolo and Lucano, and of these two are in everyday use. The three first named were roughly broken through by Totila on his retreat from Rome in 548, but the damage he did was not very considerable, for they were restored again within the next four years by Narses. The Ponte Salario, however, was blown up in 1867 by the Papal army, then expecting an attack by Garibaldi, and rebuilt by the Italian Government in 1874 as a modern bridge, when all the remains of the old work were swept away. The Ponte Mammolo was destroyed by the French in 1849, and has been replaced by a new one in a different position; but the Ponte Lucano, further up the river, still carries the Via Tiburtina, and forms, with the ancient tower-tomb of Plautius Lucanus, one of the favourite subjects for the pencils of Roman artists.

The Ponte Nomentano, or Lamentano as it is more commonly called, carries the road of that name running from the Porta Pia to Mentana, which stands on the site of the ancient Nomentum, some ruins of which may be traced in the locality. This road originally issued from the Porta Nomentana in the walls of Aurelian, which was closed up in 1561, when Matteo da Castello built the new gate a few yards away for Pius IV., after whom it was named. At present the first part of the road is lined with great workingmen's dwellings of a new quarter, which appear additionally ugly and repulsive from their surroundings and the associations of the place, since, a little further along, is that most interesting group of Constantinian buildings, the basilican church of S. Agnese and the round church or tomb of S. Costanza. Along this road and across this bridge, doubtless then in the main a wooden structure, went the crowd of plebeians to found a separate settlement beyond the river on Mons sacer; and it was along this road that Nero fled from Rome, and it was at the foot of this bridge that, his disguise falling awry, he was recognised by one from the Prætorian camp before he reached the Villa of Phaon near by. Across this bridge, in his progress from Nomentum to Rome, Charlemagne in the company of Leo III. came to receive the Imperial crown; across the bridge in 1867 went the Papal zouaves to defeat Garibaldi at Mentana and Monte Rotondo, and back again in 1870 came the Italian troops to enter Rome through the battered Porta Pia.

Although no masonry is apparent than can be distinctly assigned to so early a date, the bridge as a bridge has existed since the early days of the Republic; but when an arch was first turned across the river to take the place of the earlier wooden structure it is impossible to say, nor can it be determined exactly what appearance it presented before it was broken down by Totila. The fact that Narses so quickly reinstated this and the other ruined bridges seems to suggest that the damage stopped far short of destruction, and that the bridge as we now see it, save for the evident additions made in the XVth century by Nicholas V., and for the continued reparations of the last thousand years, is much as it was left by the Byzantine general. In fact, sitting in front of the little osteria by the riverside, refreshed by its wine and olives, we see the same picturesque bridge, the same swift-flowing osier-shaded river, and the same rough, uncultivated hill-slopes that Nero gazed upon on that fatal day; and we can only hope that the period is yet far distant when the working-classes of Rome may realise the dream of the ancient Plebs and make a permanent settlement upon Mons sacer, for then assuredly the reconstruction of the ancient bridge would be called for as a public improvement.

J. TAVENOR-PERRY.

STAIRCASE HALL AND BILLIARD-ROOM, SILVERLANDS, CHERTSEY.

THESE form a part of extensive alterations and additions carried out in 1908 for the Right Hon. Sir John Brunner, Bart., M.P. The staircase hall was formed by throwing together several smaller rooms and passages, to which an outer entrance hall and vestibule were added. The billiard-room was a complete reconstruction of an existing room,

Digitized by Google

with an extension on the west side fitted as a library.

The treatment throughout is in oak, with an Ionic order, and the panelling, newel posts, balusters, etc., are elaborately carved by Mr. Aumonier (whose carvers designed their own variations on the general types, *e.g.*, in over thirty drop swags on the sides of the newel posts).

The cornices and ceilings are in fibrous plaster by Messrs. Jackson & Sons, and a double lantern light was provided in the billiard-room in order to obtain a semi-circular section for the interior.

The architect was Mr. Ronald P. Jones, of London, and the general contractor Mr. J. A. Hunt, of Hoddesdon, who also executed the oak work throughout and the specially-designed lead R.W. heads.

The Birmingham Guild of Handicraft provided, from the architect's designs, cast-brass door furniture and pierced fronts for hot-water radiators; and the Artificers' Guild, of Maddox-street, W., carried out brass-framed fanlights and glazed upper panels for double doors.

Other firms employed in the work were Messrs. Matthew Hall & Co., entire new system of sanitation and heating (with fixed lavatory basins in every bedroom); Messrs. Easton, Courtney, & Darbishire, new electric-lighting installation, with additional engine in power-house; Messrs. Farmer & Brindley, marble pavements and fireplaces; and Messrs. Waygoods, electric passenger-lift. Messrs. Drower & Son acted as quantity surveyors.

S. EDWARD'S CHURCH AND PARSONAGE, LUGANO, SWITZERLAND.

THIS bird's-eye view represents a group of buildings at Lugano, consisting of the English church dedicated to St. Edward, king and martyr, built by public subscription during the years 1902-1904, the parsonage, and a villa residence at the side, added in 1905.

These buildings are erected in the local style of the villages of the Italian Lakes. The walls are of granite masonry, with red-brick quoins at angles, windows, etc. The roofs are covered with old-fashioned ridge and furrow tiles laid directly on the small common rafters in the "Piedmontese" manner. The floors are also of thin tiles laid on the joists, which show as a ceiling in the rooms beneath, the tiles being covered with parquet-flooring.

The old Italian method of building adopted is perhaps the most durable, effective, and inexpensive in existence.

The interior of the church is plastered, except the red brick arches of the nave arcades, which are carried on monolithic columns of local granite with cushion capitals. A wrought-iron screen, made in Siena, in imitation of the famous screen of the Palazzo Publico of that city, divides the sanctuary from the nave.

The campanile of the church has yet to be erected. GEO. JEFFERY.

ST. MARGARET CLERGY HOUSE, ABERDEEN.

IN publishing an illustration of this last week we had to be content with some general observations, the architect's description having been found to be missing at the last moment. He had a copy of it which we now print:—

"An illustration of this house, which has recently been completed, may be of interest, as neither the site nor the purpose are of a very usual character. It is intended to accommodate two clergy attached to a church in a poor neighbourhood, and both the site and the funds available were extremely limited. The site is a fine one, on a terrace above a public playground. The material is roughly dressed granite of varying colour for the walling, and the roof is covered with old red pantiles. Any result that the building may have attained is owing to its simple proportions and the use of characteristic local materials.

The south aisle and porch of the church, which also appear in the view, have been recently erected in memory of the late Rev. John Comper, who was the founder of the church, and were designed by his son, Mr. J. W. Comper, of Knight's Hill, West Norwood."

Competition News.

HULL TRAINING COLLEGE.

A meeting of the Hull Education Committee was held on Thursday last week, when the action of the Higher Education Committee was unanimously endorsed. Tenders were ordered to be advertised for, and Mr. John Watson was appointed to take out the quantities. It was also ordered that the plans should be submitted to the Board of Education as early as possible.

PROPOSED NEW MERSEY BRIDGE AT WARRINGTON.

The Warrington Town Council, which has invited designs and tenders for the construction of a new bridge over the Mersey from ferro-concrete builders, have appointed Mr. J. J. Webster, London and Warrington, to act as adjudicator upon the designs submitted, and as engineer to superintend the carrying out of the work. The Town Clerk has been instructed to apply to Parliament for a Bill giving powers to construct the bridge, which is to be 60 ft. or 70 ft. wide.

PROPOSED ISOLATION HOSPITAL, ABERDARE.

Sir W. Emerson, the assessor nominated by the President of the Royal Institute of British Architects, and Dr. W. Williams, County Medical Officer of Health, the medical assessor, have made the following awards:—First premium, Mr. Edward C. H. Maidman, 13, South Charlotte-street, Edinburgh; second, Messrs. Stockdale, Harrison, & Sons, and Mr. Howard H. Thomson, F.R.I.B.A., joint architects, Leicester; third, Mr. E. Montague Thomas, 37, Old Queen-street, Queen Anne's Gate, Westminster, S.W. The designs will be on view at the Central Hall of the Girls' Higher Standard School, Gadlys-road, between the hours of 10 a.m. and 6 p.m., until the 12th inst. Fifty-one sets of designs were received.

PARISH HALL, ELTHAM.

In the open competition for Eltham parish hall, the assessor, Mr. T. Lempriere Hesketh, F.R.I.B.A., selected the joint design submitted by Messrs. Moscrop-Young & Glanfield and Percy J. Waldram, F.S.I., of Buckingham-street, Charing Cross, W.C., who have been appointed architects for the work by the Building Committee. Sixty-three designs were sent in.

Trade Catalogues.

MESSRS. R. WAYGOOD & Co. send us a copy of their sectional catalogue of hydraulic and electric cranes. The appearance of this pamphlet is opportune, since the London Hydraulic Power Company have extended their high-pressure services on both sides of the Thames and the various electricity supply companies are offering current on favourable rates for power purposes. On page 4 will be found particulars of a neatly-designed warehouse crane which has been very largely used in London and elsewhere for loading and discharging goods on the different floors of buildings. This crane can be supplied to suit various requirements. For instance, the hydraulic cylinder can be fixed vertically against the wall and the chain passed over a jib, or fixed on the incline in a roof loft, and the chain led over a fixed cat-head. Turning and slewing cylinders may be added if desired to manipulate the jib; where the loads fluctuate considerably a patent automatic water-saving device is recommended, this apparatus effecting a notable economy in working cost; where the crane is employed chiefly for lowering a simple and efficient arrangement is available for raising the chain with a merely nominal consumption of power. For rapid and silent working steel-wire ropes are supplied instead of chains. An illustration is given of a compact, electrically-driven warehouse crane, particulars of which are doubtless furnished in the complete catalogue issued by the firm. The present catalogue also contains details and illustrations of hydraulic wharf cranes, riverside warehouse cranes with luffing and slewing arrangements, and of electrically-driven cranes of the same general character. The catalogue only deals with a very small section of the hoisting appliances made by this well-known firm.

The Carron Company (Carron, Stirlingshire) have sent us a copy of their new catalogue, entitled "Baths, Lavatories, and Sanitary Appliances." It is a well-bound book of 100 pages, of which about seventy deal with baths, eighteen with lavatories, and four with water-closets. The baths are of cast-iron, and of many different patterns. A special feature is the series of illustrations showing details of the waste and overflow fittings, soap-trays, etc. Mention ought also to be made of the cast-iron hospital bath on rubber-tyred wheels, and of the combination bath and lavatory, the basin in the latter being pivoted in two small brass sockets in such a way that it can be lifted out when the bath is to be used. Simpler designs for the bath feet would be an improvement. Some of the designs for iron lavatory stands and brackets are also too ornamental. The catalogue is a very useful production.

Messrs. Merryweather & Sons send us a new catalogue of pumps and water-raising machinery. On page 2 there is an interesting illustration containing views of thirty different methods of raising water, from the archimedean screw to the latest type of electrically-driven pump. The pages of the catalogue give particulars of practically every variety of pump, operated by hand, horse gear, water-wheel, windmill, oil, petrol, gas, hot air, or steam engine, and electric motor. Prices, dimensions, and capacities are quoted throughout the book, which will be found a useful addition to the architect's library of catalogues.

We have received from the Farringdon Works and H. Pontifex & Sons a copy of their new catalogue of sanitary fittings. It is a well-produced book of 168 pages, fully illustrated and bound in cloth. Baths, lavatories, water-closets, and other sanitary fittings, and bath-room accessories are shown in great variety, and there are also a few illustrations of heating apparatus. One of the most interesting baths is the "Niko" porcelain-enamelled iron bath, with a continuous moulded plinth, all in one piece of metal. There is a welcome simplicity in many of the lavatory brackets, and in some of the bath feet, but "ornamental" claw feet still persist in this and many other catalogues. Mention may also be made of the "No-sound" siphonic cistern for water-closets; this is made of cast-iron or of white glazed fireclay, with rounded corners, and is supported on simple cantilevers.

The "Interioven" Patent Stove Company have sent us a copy of their four-page pamphlet showing their patent grate. This is designed to serve either as a sitting-room grate or a cooking-range. It has an oven placed about 15 in. above the fire; the oven door when closed has the appearance of a canopy. The firegrate is at a low level with front bars, and over it is a hotplate hinged at the back, so that it can be turned down to receive pans, and raised to form a sloping refractor when an open fire is required. A bath boiler, fixed behind the fire, has an arched flue controlled by a damper. The special oven flues are controlled by a damper over the oven. The grate is an ingenious combination, which will prove very useful in small flats.

We have received from the "Continental Manufacturers' Agency" a portfolio of plates of colour-decoration in brickwork in a material entitled "Bricorna," manufactured by Messrs. Fr. van de Loo, of Dieren, Holland. By this process the different colours are burnt into the bricks, and it is claimed by the patentees that neither frost nor heat will affect them. The material looks very well in the finely executed coloured plates sent to us, but of course to architects one important consideration would be the nature of the surface. From some specimens that have been sent to us it appears that "bricorna" coloured bricks can be made with a dead surface, instead of the glazed surface which is disliked by so many architects. If this unglazed surface can retain its colour against the action of weather as well as the glazed bricks, it is a material worth attention. A large number of coloured bricks are kept in stock, but they can also be made specially to suit any design.

Messrs. Young & Co., of Victoria-street, Westminster, have sent us a small catalogue of air-gas machines. These machines produce a mixture containing about 98½ per cent. of air with 1½ per cent. of petrol vapour. We have already published in our columns information relating to air-gas of this description, and have discussed the value of the mixture for incandescent lighting and as a heating agent. The apparatus sold by Messrs. Young & Co. includes a meter to control the proportion of air in the mixture, and the blower is operated by a hot-air motor. The price of the apparatus varies from 30 guineas for the size required to produce 200 cubic ft. of air-gas per hour to 200 guineas for the size required to produce 2,000 cubic ft. per hour. Prices of larger sizes and estimates for complete air-

gas installations can be obtained on application to the firm.

We have received from the Engineering Department of the National Electric Lamp Association, U.S.A., a bulletin describing "Modern Street Railway Lamps." The relative merits of tantalum and carbon filament lamps are compared, and many valuable tables showing the relative cost of the two systems of lighting are given. In the third table seven different considerations are taken into account, and points are assigned to the two lamps. The final result shows that the carbon lamp obtains 72 per cent., and the tantalum lamp 87 per cent. of the total marks. It is stated that tantalum lamps afford a simple and profitable method of lighting tramway cars satisfactorily.

Messrs. Allen & Son (Halifax) have sent us a copy of their catalogue of plain and moulded glazed bricks, sill bricks, copings, etc. Dovetailed glazed bricks for vaults and subways are shown, together with Holloway's locking and hanging tiles. Allen's partition tiles, 2½ in. thick, glazed on both sides, are fitted together with tongued and grooved joints, and special tiles or blocks are made for angles and copings.

BOOKS RECEIVED.

WHERE TO LIVE ROUND LONDON: SOUTHERN SIDE. Edited by Prescott Row and A. H. Anderson. Third Edition. Pp. 215 and Maps. (The Homeland Association, Ltd. 1s.)

PROCEEDINGS OF THE INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS. Vol. XXXV. Edited by Thomas Cole, A.M.Inst.C.E. Pp. 342. (E. & F. N. Spon.)

OXFORD AND CAMBRIDGE DELINEATED by Hanslip Fletcher, and described by various writers. Pp. 290, and 61 plates. (Sir Isaac Pitman & Sons. 21s.)

CONCRETE. By John C. Trantwine. Reprinted from Trantwine's Civil Engineer's Pocket-Book. (Chapman & Hall. 8s. 6d.)

Correspondence.

SHOOLBRED *v.* WYLES.

SIR,—You very justly comment upon this case, "Why use mortar pugging when dry pugging can be obtained?" But it is much more expensive. The only sound-deadener, by the way, that is of much use is a ceiling detached from the floor.

But what I think is of importance in this case is that there seems to have been a very grave miscarriage of justice. Leave to appeal does not seem to have been applied for, but it seems to me that in the interests of the profession, apart from those of the defendants', the matter ought not to be allowed to rest where it does.

The judge submitted that negligence had not been proved against the architects, yet the jury pronounce practically that it has. Yet even they do not seem to be quite clear in their minds about the matter, for they find that the architects were "only guilty of negligence in a minor degree." This seems a very lame conclusion.

The defendant is said to have ordered the pugging, but even if it be proved that the architects did so it has been used in hundreds of thousands of cases without evil results.

The truth, of course, as ninety-nine builders out of a hundred could testify, is that the cementing down of the linoleum is to blame. An air-excluding material like linoleum is most dangerous to new floors, even apart from the presence of wet pugging, and if cemented down is practically certain to cause dry-rot.

It would probably be very difficult to find a case of dry-rot set up in a lime-pugged floor previous to the invention of linoleum, and caused by this lime pugging. If my contention is correct, it seems to be a manifest injustice to Messrs. Wyles & Migotti.

Finally, if fearing dry rot, it is well to thoroughly paint the vulnerable timber with Peter's (Derby) Carbolineum—two coats put on hot; or if dry-rot has shown itself, I am told that two coats of sulphate of copper (½ lb. to 1 gallon boiling water), bushed well in while hot, will kill the fungus and prevent its future growth; the user protecting his face with a mask and hands with stout leather gloves.

W. B. HOPKINS.

Berkhamsted.

DRY ROT IN BUILDINGS.

SIR,—Our thanks are honestly due to Mr. Max Clarke for his letter in the *Builder* of October 30.

While it is but just that we should suffer for wilful neglect, it is quite the reverse when we have done what we can to prevent these things. I once had a similar experience brought about by an unwitting closure of the ventilation I had provided, by a servant of my client, I having no knowledge of it till mischief was done.

If we had some sound and sure definition to go upon which would be equally just both to our clients and ourselves it would prevent needless litigation in the future. No architect *wishes* to cause trouble either to his client or to himself.

One important point to be settled is: What is the time limit, if any, when an architect's liability for his own or other people's errors ceases? Is he to be held responsible for all time? If so, the Sword of Damocles seems to hang perpetually over him.

On many floors it is quite impossible to get through currents of air from vents, specially where party-walls intervene. If the points in the letter could be cleared up once for all we should be yet more grateful to Mr. Max Clarke for opening the discussion upon it, and to you for making it known.

E. SWINFEN HARRIS, F.R.I.B.A.

SIR,—With regard to Mr. Max Clarke's letter in your last issue (with which we entirely agree and hope that some action will be taken by the Royal Institute of British Architects with a view to collecting evidence and opinions), we are particularly interested in question No. 3 in Mr. Max Clarke's letter, *re* upper floors. The difficulty here is, of course, that ventilation through the external walls must, to be efficient (provided that the ceiling is directly under the floor joists), be between and at each end of every joist, and this is obviously impossible in most cases.

A possible means of ventilating such floor has occurred to us, in connexion with certain floors which are both pugged with lime and hair, and covered with parquet, as shown in the enclosed sketch, viz., by removing the skirting on the sides of the rooms over the ends of the joists, cutting away the floors for an inch or two in front of the plaster face, and refixing the skirting blocked out from the wall with either perforated metal or wood on the top; or as an alternative perforating the front of the skirting. This seems, at best, a clumsy and not very convenient or cleanly remedy, and perhaps someone else can suggest a better.

SMITH & BREWER.

2, *Gray's Inn-square.*

SIR,—In your editorial note appended to Mr. Max Clarke's letter you invite suggestions and answers to the points he has raised. In question No. 4 he suggests that in considering the question of dry rot in buildings the use of slag wool had better be excluded, solely on account of the cost. Mr. Clarke and most experts admit that slag wool is incontestably the best material to use, and, if this is so, surely the best is the cheapest! But is slag wool costly? In almost any part of the kingdom British-made slag wool can be delivered on the site at about 1d. per square foot, 2 in. thick. The fact is, the use of slag wool is the solution of the whole trouble, providing the dry rot is not inherent in the timber.

The builder who relaid the floor and who gave evidence in the case under review seemed to know this.

EUREKA.

SIR,—We have read with interest the legal case reported in your issue of October 23 concerning the above, and now have before us the letter of Mr. Max Clarke appearing in this week's issue.

As the statement in clause 4 of Mr. Clarke's letter, *i.e.*, "Slag wool, which is perhaps the best material to use, but somewhat costly, had better be excluded, being often inadmissible on the score of expense," is rather misleading, and apt to prejudice the use of slag wool, we, as the introducers of this material in England, would like to point out that slag wool can now be obtained at a cost of about ½d. per square foot, 1 in. thick.

FREDK. JONES & Co.

HOLLOW WALLS CONVEYING SOUND.

SIR,—I should be much obliged if any of your readers could inform me of any method, not costly, by which steps can be taken in building a house with hollow walls (4½ in. and 4½ in. only) to check the sounds of conversation being conveyed upwards to the rooms above.

F. HERBERT MANSFORD.

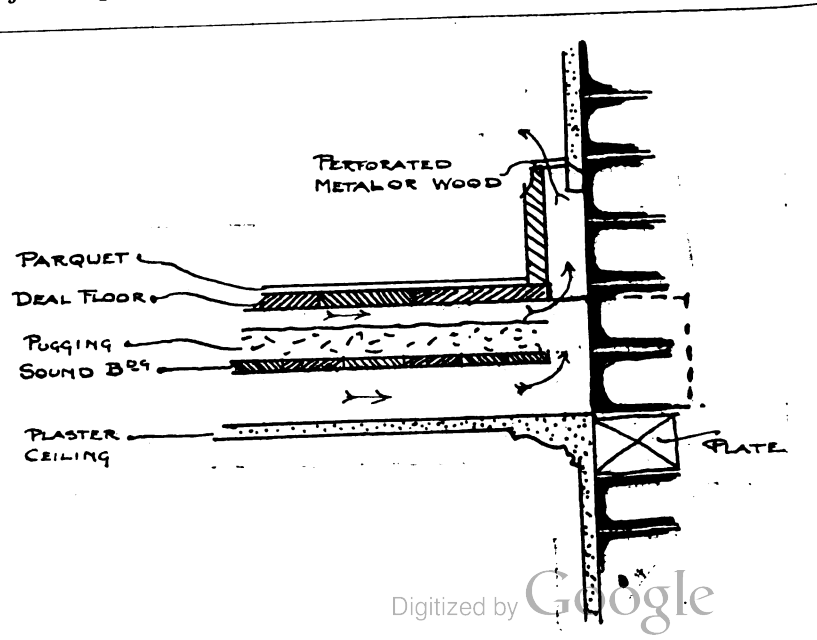
WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on October 28, the following matters were dealt with:—

Contemplated New School.—A letter was received from the Board of Education asking for observations on a new scheme for the United Westminster Schools. The scheme provides for transferring the boarding side of the school to the country, and it was stated that the Clothworkers' Company were prepared to transfer the Sutton Valence Grammar School to the Governors, and contribute 5,500*l.* to rebuild the premises. The scheme was approved of.

Waterloo-place Improvement. — It was decided to instruct the City Engineer to carry out the necessary paving works for widening the carriageway of Waterloo-place where the buildings are being voluntarily set back, at an estimated cost of 470*l.*

New Street.—Messrs. Drivers, Jonas, & Co. forwarded the plans for the construction of a new street from Princes-street to Tothill-street. The proposed new street is to be 40 ft. in width, the roadway to be formed of 2-in.



Digitized by Google

rock asphalt on 7 in. of cement concrete. A new 12-in. pipe sewer will be laid down the centre of the street, connecting with the brick sewers in Princes-street and Tothill-street, and furnished with one manhole for access at the angle of the street. The footways will be 8 ft. wide, and paved with 2½-in. "non-slip" stone, similar to that used by the Council in other streets, and on 4 in. of concrete. The plan shows vaults and pavement lights, and two coal-plates to be constructed under and in the footway on the north side of the Wesleyan Methodist Hall, and also other pavement lights in the footway on the west side of the hall. The surface drainage will consist of eight gullies of a design indicated on the plan, and the street will be lighted by six incandescent gas-lamps on columns, and of the type in general use in the district.—It was decided to give consent subject to the provision of two additional manholes, and to conditions with regard to pavement lights, etc.

Reinforced Asphalt Paving.—It was decided that Messrs. Faldo & Co., of 1, Arundel-street, should be allowed to put down 30 to 40 sq. yds. of their reinforced asphalt in Terminus-place, near Victoria Station.

MIDDLESEX COUNTY COUNCIL.

MR. BASIL MOTT, M.Inst.C.E., has reported on the question of increasing the width of Kingston Bridge to 55 ft. The widening would be on the up-stream side, which would involve less interference with property, and would meet the general conditions in the best way. He estimated the cost of this work at 62,000*l.*, exclusive of the acquisition of property. As an alternative proposal to the widening of the existing bridge, he had prepared plans for a new bridge on the same site, and which bridge would consist of three elliptical arches, the central span 105 ft., and the two shore spans 90 ft. each, and would be constructed of Cornish granite and blue Staffordshire brickwork. The estimated cost of this work would be 111,250*l.*, including the cost of a temporary bridge, but exclusive of land. He felt strongly that the result of widening the bridge would not justify the expenditure, and he could not advise the Committee to spend any money in this way. If it has become imperative that increased traffic facilities must be provided, he was satisfied that a new bridge was the proper solution of the difficulty. In view of the public feeling in regard to the maintenance of the existing bridge, which was opened in 1828, a Committee might consider whether a new bridge could not be advantageously constructed on some point between Kingston Bridge and the London and South-Western Railway. A bridge in this position could be built of very much less costly material, and the saving obtained would go a long way towards the cost of purchasing the requisite land for the approaches. At the same time more accommodation would be obtained than by either widening the existing bridge or reconstructing same. At the meeting of the Middlesex County Council on October 28 it was reported that a joint Committee from the County Councils of Middlesex and Surrey would consider Mr. Mott's report. The Council agreed to contribute half the total cost (6,141*l.*) of widening to 60 ft. the Boston main road, Hanwell. The work is to be undertaken by the local district council.

LONDON AND DISTRICT BOROUGH COUNCILS.

East Ham.—Plans have been passed as follows:—Additions to factory, High-street South, for Messrs. Burgoyne & Burbidges; Mr. R. C. Turner-Gordon, four houses, Sheringham-avenue; Mr. L. Harris, twenty-four houses, Masterman-road; Mr. W. G. Watson, ten houses, Lichfield-road; Mr. H. Wilson, five houses, Henniker-gardens. Mr. A. J. Bradley has lodged plans for eighteen houses in Hubert-road.

Finchley.—The District Council has passed the following plans:—Mr. W. Peachey, nine houses, Etchingham Park-road; Mr. C. W. Scott, three houses, Arden-road; Messrs. Heatherington & Co., two houses, Fitzalan-road: Mr. C. F. Day, four houses, Rosemount-avenue.

Hendon.—Plans have been passed by the Rural District Council for Mr. W. Archer (for Messrs. Clarke & Co.) for four houses, Bolton-road, Pinner.

Hornsey.—Messrs. Griffiths & Co., Ltd., whose tender had been accepted for the making-up of Muswell Hill-place at 351*l.* 10s. 8d., wrote pointing out that a clerical error had been made in casting up the summary of the priced bill of quantities, and that the amount of the tender should have been 451*l.* 10s. 8d. The Council decided to accept the tender of Mr. Thomas Adams, of Wood Green, at 431*l.* 9s. 7d., in lieu of that of Messrs. Griffiths & Co. Plans were passed as follows:—Messrs. F. A. Coleman & H. Holmes, North Finchley, ten shops and three blocks of residential flats over same, in Archway-road and Southwood-lane, Highgate; Mr. C. R. Price, alterations and additions to "Beacon Lodge," Crescent-road, Crouch End. Messrs. George Smith & Son, Muswell Hill, have lodged amended plans for a hall and classrooms at St. Martin's School, Page's-lane, Muswell Hill.

Kingston-on-Thames.—The Works Committee at the last meeting of the Council recommended that the tender of the London Granite Company be accepted for 2,500 tons of Quenast granite at 11s. 9d. per ton; also that the Borough Surveyor be authorised to obtain for testing purposes 500 tons of Welsh granite from Mr. L. Somerfeld at 11s. 5d. per ton. Objection was taken by some councillors to the recommendation, they alleging that an undue preference was given at a higher price to Belgium stone. Mr. Welbelove read details of a test applied by Mr. Lovegrove, Surveyor to the Hornsey Council, to the effect that Welsh granite was equal to Quenast, and that the former was largely used by the Kent, Surrey, Lancashire, and other county councils, and many important public bodies. Alderman Walker, in supporting the recommendation, said that if the 500 tons of Welsh stone proved satisfactory, the Council would give an additional order for 2,000 tons. It was only businesslike that they should be cautious about making a change. Mr. Woolnough said that many surveyors were now using blue Guernsey granite, which was even better than Quenast. The Borough Surveyor said that Quenast was a long way better than Welsh granite. He hoped the Council would not force Welsh stone upon them until, at any rate, they knew something about it from practical experience. The attrition test showed that Welsh stone lost almost twice as much in dust as the Quenast. In the result the recommendation of the Committee was carried by seventeen votes to seven.

Leyton.—Messrs. Emden, Egan, & Co. have lodged plans for the erection of a public hall in High-road.

Poplar.—A plan has been passed for Mr. G. J. Anderson for the erection of a warehouse on the site of 76 to 82, High-street.

Tottenham.—The Education Committee recently accepted the tender of Mr. Stewart at 20,553*l.* for the building of Crowland-road schools. Subsequently, Mr. Stewart wrote pointing out that an error of 600*l.* against himself had been made in casting up the summary. The Local Government Board were consulted by the education authority upon the point raised, but intimated that it was a matter upon which they could not advise. It was finally resolved to inform Mr. Stewart that no alteration could be made in the amount of his tender, and that should he decide to withdraw same the Clerk would advertise for fresh tenders.

Wimbledon.—120*l.* is to be spent in paving, and 521*l.* in repairing roads. Tenders are to be invited for making up Murray-road (estimated cost, 1,351*l.*) and Farquhar-road (estimated cost, 394*l.*). The Works Department is to erect a manual training classroom at the Dundonald-road School, at an estimated cost of 550*l.* The following plans have been passed:—Messrs. Wakeford & Sons, four houses, Melbury-gardens; Mr. T. Holloway, three houses, Murray-road. Mr. B. A. Boyton has lodged a plan for seven houses in Laburnum-road.

Master Builders' Associations, etc.

GLASGOW BUILDING TRADE EXCHANGE.

The annual general meeting of Glasgow Building Trades Exchange, Ltd., was held in the office, 67, Hope-street, on the 27th ult. Mr. John Keppie presided. The accounts for the year, submitted by the secretary, Mr. David Cook, showed a loss on the year's working of 53*l.* That was regrettable, the report stated, but in the present depressed condition of the building trade it was inevitable. The trade was economising wherever it could, and every source of the Exchange income suffered. The Exchange, however, was in a perfectly healthy financial condition, the profit and loss account showing a balance in hand of 118*l.* after paying all bad debts and providing for shareholders' capital. There had been no matter of moment in connexion with the trade which had called for the intervention of the Exchange during the past year. On the motion of the Chairman, the report was adopted. Office-bearers were afterwards appointed.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ALDERSBROOK.—School (4,000*l.*).; Mr. W. E. Davey, builder, Southend-on-Sea.

Alresford (Hants).—Residence at grammar school; Mr. W. J. Taylor, architect, The Castle, Winchester.

Ayr.—Business premises, 244 and 248, High-street (3,000*l.*); Mr. W. Cowie, architect, Alloway-chambers, 239, High-street, Ayr.

Basingstoke.—Chapel and lodge at cemetery; Borough Surveyor.

Bentley (Yorks).—School (8,000*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Berwick.—New pavilion; Secretary, Berwick Rangers' Football Club.

Bletchingley.—Additions to workhouse; Mr. F. W. Honour, builder, Warlingham.

Box (Wilts).—Swimming-bath, with offices, etc.; Dr. Martin, Box, Chippenham.

Bracewell (near Skipton).—School (2,000*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Brighouse.—Salvation Army hall; Mr. A. Gordon, architect, 97, Queen Victoria-street, London, E.C.

Bude.—Wesleyan schools (2,600*l.*); Mr. E. Wise, architect, Launceston, Cornwall.

Cambridge.—Rink for Mr. Charles Makings; Messrs. Paul Bansor & Son, architects, Cambridge.

Castletown.—School (5,000*l.*); Mr. W. Rushworth, architect, Shire Hall, Durham.

Dorchester.—School; Mr. C. E. Slade, County Surveyor, Dorchester.

Dunbar.—Extensions to school (2,500*l.*); Mr. R. M. Cameron, architect, 53, Great King-street, Edinburgh.

Dundee.—School Board offices (6,000*l.*); Mr. J. H. Langlards, architect, 81, Murrayfate, Dundee.

Erdington.—Residence, Sutton-road; Mr. W. H. Barnes, builder, Jackman-street, Balsall Heath, Birmingham. Row of villas, Sutton-road; Mr. A. G. Latham, architect, 5A, Temple-row, Birmingham.

Failsworth.—Co-operative building; Secretary, Failsworth Co-operative Society.

Gainsborough. — Additions to Wesleyan chapel, Ropery-road; the Trustees.

Grimsby.—Seventy houses, Cowelise Estate; Surveyor, Grimsby Corporation Estates Committee.

Hamilton.—Extensions to fever hospital (6,500*l.*); Messrs. Cullem, Lockhead, & Brown, architects, Hamilton.

Hounslow.—The Council has passed plans for additions to Builder's Arms, Derby-street, for Ashley's Staines Brewery, Ltd.

Keighley.—Additions to post-office (2,500*l.*); Messrs. Wrights, Ltd., builders, Leeds.

King's Heath (Birmingham). — School: Messrs. J. Bower & Son, builders, Balsall Heath, Birmingham.

Ilford.—The Urban District Council has passed the plans for seven houses in Leamington-gardens, for Mr. H. A. Rawlins.

Lancashire.—Erection or enlargement of eighteen secondary and technical schools; County Architect, County Offices, Preston.

Liverpool. — Church and church-house (15,000*l.*); architects, Messrs. Bradbury & Son, Liverpool; Messrs. Haigh & Pilling, builders, Walnough-street, Liverpool.

Lyonshall.—Mansion (6,000*l.*); Mr. J. Deacon, builder, Lichfield.

Manchester.—School; Governors, Manchester Ladies' Jubilee School for Girls.

Middleton. — Extensions, Tanfield Mills (5,000*l.*); Messrs. Sellers, Son, & Orrell, architects, Union-chambers, Bury.

Milborne Port.—School; Mr. A. J. Pictor, architect, Bruton, Somerset.

Northfleet.—School; Mr. W. H. Robinson, architect, Caxton House, Westminster, S.W.

Northwood.—School (4,370*l.*); Mr. W. J. Dickens, builder, Ealing.

Perth.—New Sessions House buildings (3,000*l.*); Mr. R. McKillop, Borough Surveyor, Perth.

Porchester.—Vicarage; the Vicar, Parish Church, Porchester.

Port Talbot.—Drill-hall (6,000*l.*); Mr. J. R. Watson, builder.

Preesall (Lancs).—Weights and measures office, Knott End; County Architect, County Offices, Preston.

Ringsend.—Additions to school; Mr. H. Girling, builder, Wisbech.

Rotherham.—The Town Council has passed the following plans: — Fifteen houses, Hatherley-road, and seven in Denman-street, Messrs. Chas. Green's Son; five pairs semi-detached villas, Doncaster-road, Mr. J. H. James; two pairs semi-detached villas, Broomfield-grove, Mr. W. Mullett; explosives store in connexion with Grange Colliery, Dropping Well, Messrs. Newton, Chambers, & Co., Ltd.; re-erection of the Wheat Sheaf Hotel, for the proprietors.

Saffron Walden.—Baths; Mr. A. H. Forbes, Borough Surveyor, Saffron Walden.

St. Annes.—Eighteen workmen's cottages; Mr. H. Gregson, architect, Town Hall, St. Annes.

Springburn.—Rink, Campbell-street; Glasgow Rink Company.

Staveley.—School; Secretary, Westmorland Education Committee.

Stockton.—Additions to Dean Bank school (2,400*l.*); Mr. Cook, builder, Stockton.

Sutton.—Mr. Adams, architect for Mr. T. Wall, has lodged plans with the District Council for the laying-out of the Strawberry Lodge Estate, off Gander Green-lane.

Tiverton-on-Avon.—Higher-grade school (330 places); Mr. A. J. Pictor, architect, Bruton, Somerset.

Torpoint.—School; Mr. B. C. Andrew, architect, Biddick-court, St. Austell; Mr. W. E. Bennett, builder, Bodmin.

Twickenham.—School (1,600 places); Surveyor, Education Committee.

Upwell.—School; Mr. H. Rands, builder, Wisbech.

Waterfoot (Liverpool). — Slipper works (3,000*l.*); Mr. A. Brocklehurst, architect, St. James-chambers, Waterfoot; Mr. J. Holt, builder, Waterfoot.

Wigan.—The Town Council has passed the following plans:—Ten houses, Marsden-street, Messrs. T. & H. Houghton; two houses with shop, Kenyon-road, Mr. J. Walkden.

Wincanton.—Isolation hospital; Mr. A. J. Pictor, architect, Bruton, Somerset; Mr. C. Bryers, builder, Bridgewater.

Winchester.—Enlarging St. Paul's Church; the Vicar.

Wordsley.—School; Messrs. H. Gough & Sons, builders, Wolverhampton.

BUILDERS' INFORMATION CENTRE.

[COMMUNICATED.]

BUILDERS receiving the particulars of the above Centre should, if they intend becoming subscribers, fill up and return, as soon as possible, a sheet which has been prepared for the purpose of recording the class of work they have executed in the past, as this Register is to be compiled without delay.

These forms can be had upon application, by enclosing stamped addressed foolscap envelope to the Secretary, 24 and 25, Hart-street, London, W.C. Besides being able to record the class of work a builder undertakes, an opportunity is given him for filling in on the sheet above referred to the information that he has special facilities for executing subcontracting work in heating, lighting, sanitation, etc., when such is the case.

Obituary.

MR. W. P. FRITH, R.A.

The death is announced, at the age of 90, of Mr. W. P. Frith, who was born in Yorkshire in 1819, and who at one time filled a position in popular favour as a painter which is almost forgotten by the present generation. Frith had the good fortune (in one sense) to be able to furnish the middle-class public of the early Victorian era with exactly the kind of art which suited their taste and comprehension; and his two most important pictures, "The Derby Day" and "The Railway Station" (the former of which is in the National Gallery), have the merit of being very carefully painted and exact records of two essentially English scenes. In an artistic sense they are vulgar pictures, representing vulgar subjects, but on their own lines they are most conscientiously painted, and it is known that the artist spared no trouble in the effort to secure verisimilitude in the types of persons represented. Indeed, in the figures of the two detectives in "The Railway Station," jaunty over the capture of their prey, there is evidence of a power of characterisation which "The Derby Day," its predecessor, would hardly have led one to expect. Both pictures, however, have a distinct historical value as representations of two phases of English life, and the purchase of "The Derby Day" for the National Gallery was, we think, quite justified. At a later period Frith published three volumes of his "Reminiscences," concerning which it may be said that many better painters could not have produced half such amusing and interesting books.

THE LATE MR. HENRY HALL.

A correspondent sends us some further particulars about the work of the late Mr. Hall, in addition to those which we published under this heading last week.

"In 1882-3 he was one of the successful competitors for the proposed new Government offices at Whitehall, being one of nine out of the numerous competitors selected to again compete. The same year Mr. Hall won in competition the second premiums for the Glasgow Municipal Buildings and the Birkenhead Town Hall. His private practice was largely done in Somerset and Dorset, where he carried out many important works. Early in his career he was entrusted with the restoration of 'Hestercombe' for the late Lord Portman. He also built the head offices for the Wilts and Dorset Banking Company at Salisbury, and, in addition, many of this firm's branch establishments. When 'Trafalgar,' the house the nation presented to Nelson, was partially destroyed by fire, Mr. Hall was consulted, and the mansion restored under his able direction. Mr. Hall was a member of the Somerset Archæological Society, and also of the St. Paul's Ecclesiological Society. In local affairs he took a great interest, and was amongst the first members elected to the St. Pancras Borough Council, which position he held to within three years of his death, giving his honorary services to the Council when required."

General Building News.

CHURCH RENOVATION, HONITON.

St. Paul's Church, Honiton, was recently reopened after renovation. The body of the church has been laid with wood-block flooring, the last of the old pews have been removed, and new oak seats substituted for them in the south aisle and on the south side of the nave. The sanctuary has been refloored and redecorated, and carved oak altar-rails have been erected. The whole of the work in the sanctuary was designed and carried out by Messrs. F. Drake & Sons, of Exeter. Mr. E. G. Warren was the architect concerned.

NEW CHURCH, SOUTH SHIELDS.

The foundation-stone of the new church of St. Oswin, which is being erected on a site at Brinkburn, Stanhope-road, South Shields, was recently laid. At present only three bays of the nave are being built, at a cost of 3,300*l.*, and this will afford accommodation for 300 people. The building in its complete state will accommodate over 600 worshippers, and is designed on the hall plan, the whole of the seating being provided in the nave. The building is being faced with "Pelaw" bricks, with stone freely introduced as dressings. Mr. James Young, of Tyne Dock, is the contractor, and Mr. Henry Grieves, of South Shields, the architect.

CHURCH REBUILDING, BLAGDON.

Blagdon Church, which has, through the generosity of Lord Winterstoke, been rebuilt, was consecrated on the 15th ult. The new church consists of nave, with north and south aisles and south porch, and chancel with chapels on either side, that on the north side forming the organ-chamber, and that on the south side the choir vestry, to which is attached a clergy vestry. At the west end is a tower. The church was designed by Mr. Frank W. Wills. It is lighted throughout by acetylene gas, and is heated by hot water, with which is combined a system of ventilation, the heating chamber being situated under the chapel containing the organ. There is seating accommodation for 350 persons. Messrs. W. Cowlin & Son were the builders.

BAPTIST CHURCH, PINNER.

A new church is being built by the Baptist congregation of Pinner. The church will accommodate about 500 worshippers. It will comprise vestibule, transepts, chancel, etc. At the rear of the chancel there will be a lecture hall, and the minister's and deacons' vestries will also be close at hand to the church. The school at the rear will immediately adjoin the church, and it is to be approached by two short corridors at the sides of the chancel. The school hall, with an open timber roof, will be divisible at the sides, by movable partitions, into classrooms of suitable sizes. An adequate kitchen and cycle store will be provided, and there will be the usual lavatories in convenient positions. The contract for the complete scheme is about 4,300*l.*, exclusive of the site. Messrs. Spalding, Spalding, & Myers, of Watford and London, are the architects, and Messrs. Brightman & Son, of Watford, the contractors.

NEW CHURCH, SONNETHILL, GLASGOW.

A new Roman Catholic church is in course of erection at the corner of Hill-street and Rose-street. The church, 160 ft. long by 90 ft. wide, contains four chapels, and will ultimately be covered entirely in marble and Venetian mosaics. The tower will be 150 ft. high. The architect is Mr. Charles J. Menart, I.A., of Glasgow.

NEW CHURCH, ROKER, SUNDERLAND.

The foundation-stone has now been laid of the new church of St. Aidan, at Roker, Sunderland. The building will cost 1,004*l.* without the upper portions of the tower, and 1,124*l.* with them. The architect is Mr. Hugh Hedley, and the contractor Mr. J. W. White, of Sunderland.

CHURCH EXTENSIONS, DURHAM.

St. Godric's Roman Catholic Church at Durham has been enlarged and improved. The most noteworthy addition is the erection of the tower, from designs by Mr. Pugin. Standing at the extreme west end of the building the tower rises to a height of 74 ft. to the parapet top, with an additional height of 16 ft. to the pinnacles. It contains eight belfry windows and three large windows, 20 ft. high, in the lower portion. The other additions and alterations to the church include the extension of the nave and aisles by 28 ft. The red brick gable which has done duty for the past forty-five years has been removed, and four additional confessionals have been provided at the south side of the church. The whole of the new work is of stone, and the roof is covered with Buttermere slates. The total cost of the extensions is about 4,000*l.*, and the work has been carried out by Messrs. G. Gradon & Son, of Durham.

NEW CHURCH, WORCESTER.

The foundation-stone was recently laid of the St. Martin's new church in the London-road, Worcester. The work of designing the church is in the hands of Mr. Geo. H. Fellowes Prynne. The building is to accommodate about 650 adults. The general form of the plan, which is cruciform, shows a nave 83 ft. 3 in. long by 31 ft. wide, divided into five bays of 16-ft. centres, broad processional passages being placed on either side, leading into north and south transepts. The chancel will be of the same width as the nave, and roofed at the same height, without a chancel arch. The sanctuary will be somewhat narrower, but carried to the same height as the nave and chancel. A tower will form an important feature in the centre of the south elevation. Clergy and choir vestries and a heating-chamber will be provided in the basement, formed under the chancel and sanctuary. A sacristy will be placed on the north side of the sanctuary. The materials are to be hammer-dressed local stone facing externally, laid in random courses, and red brick facings with Bath stone dressings internally. The roof of the church will be covered with tiles, and the roof of the tower and flèche with copper. The estimate received from Messrs. J. & A. Brazier, of Bromsgrove, has been accepted by the Building Committee, and work to the amount of 8,435*l.* has been put in hand.

CHURCH IMPROVEMENT, DARLINGTON.

Holy Trinity Church, Darlington, was recently reopened after undergoing extensive alterations and improvements. The work has been carried out according to plans prepared by Mr. C. Hodgson Fowler, of Durham. The contract for the major part of the work has been in the hands of Messrs. R. T. Snaith & Son, Ltd., while that for electric lighting was undertaken by Messrs. Sykes & Co., Darlington, and that for heating by Messrs. Cormack & Co., of Glasgow. The total cost of the improvements is about 1,700*l.*

CHURCH ADDITION, BEDFORD-PARK, W.

The new side chapel of All Souls at St. Michael's and All Angels Church, Bedford-park, has now been completed and opened. The chapel has been erected at a cost of 1,300*l.*, and Mr. Maurice B. Adams, architect, was responsible for the plans.

CHURCH ADDITIONS, BULLINGHOPE, HEREFORD.

A tower and spire have been erected at Bullinghope Church. The work has been carried out by Mr. Charles Cooke, builder, Hereford, from the designs of Messrs. Nicholson & Hartree, architects, Hereford.

NEW CHURCH, BUXTON.

A new church is being built at Harpur-hill, near Buxton. The cost will be 1,188*l.* The architects are Messrs. Bryden & Walton, of Buxton, and Mr. Matthew Burnett, of Burbage, is the contractor.

CHURCH RESTORATION, TICHBORNE.

The ancient church of St. Andrew, the parish church of Tichborne, has been restored. The work was carried out under the supervision of Mr. N. C. H. Nisbett, Architectural Surveyor to the Dean and Chapter of Winchester Cathedral, by Mr. E. Williams, of Cheriton.

CHURCH OF ST. THOMAS, EXETER.

New carved oak choir-stalls were dedicated on Friday last week, as a memorial. Improvements have also been carried out in the sanctuary, including new carved oak altar-rails. The work has been executed by Messrs. Dart & Francis, of Crediton, from the designs of Mr. Harbottle Reed, of Exeter.

NEW CHURCHES IN LONDON.

Mr. E. L. Lutyens, architect, Bloomsbury-square, W.C., has prepared plans for the church of St. Jude-on-the-Hill, Hampstead Garden Suburb. The cost of the church, with parish hall and vicarage, is estimated at 12,000*l.* The site of Holy Trinity Church, Kingsway, has been cleared preparatory to rebuilding.

WESLEYAN SCHOOLS, LEEDS.

Sunday-schools have been opened in connexion with the Headingly Wesleyan Church, Leeds. The new premises have been erected in stone to harmonise with the church, with open timbered roof, the contractors being Messrs. W. Wilson & Sons, of Headingley, and the architect Mr. G. F. Danby. The total cost, including the site, etc., is 4,250*l.*

COUNCIL SCHOOL, ABERTRIDWR.

A new school has been erected at Abertridwr by the Glamorgan Council. The building is two stories high, and is designed to accommodate 248 infants in five classrooms on the ground floor, and 248 girls in a similar number of rooms on the first floor. The building is faced with local stone, and has red brick and Forest of Dean stone dressings, the roofs being covered with North Wales slate. Mr. D. Pugh-Jones, F.S.I., County Architect, is responsible for the design of the building, under whose supervision the work was executed by Mr. John Williams, of Abertridwr, at a cost of 5,900*l.* The boundary walls formed a separate contract, and were also erected by Mr. J. Williams, and cost 320*l.* 10s. The heating apparatus was installed by Messrs. Wm. Freer & Co., of Leicester, costing 260*l.* Mr. F. E. Huish, of Caerphilly, acted as clerk of works. The approach roads and bridges were also executed under the direction of the County Architect, these works costing 352*l.*, and were also carried out by Mr. J. Williams, the contractor for the school.

SCHOOL, HENDRE.

A new school has been built at Hendre, Penyreheol. The building comprises four classroms opening off a central hall, and provides accommodation for 112 mixed scholars and forty infants. The exterior of the building is faced with local stone, with Forest of Dean stone and red brick dressings, the roofs being covered with North Wales slates. The school was designed by Mr. D. Pugh-Jones, F.S.I., County Architect, Cardiff, under whose supervision the work has been executed by Mr. John Lewis, of Caerphilly, at a cost of 2,956*l.*, Mr. F. E. Huish, of Caerphilly, acting as clerk of works.

HIGHER GRADE SCHOOL, CAMBUSLANG.

A higher grade school is in course of erection in West Coats-road, Cambuslang, for the Cambuslang School Board, at a cost of about 7,000*l.* It will contain, when completed, four supplementary classrooms for 160 pupils, and eight advanced classrooms for 192 pupils. In addition, there will be arts-room, science-room, and two music-rooms, with the usual staff and cloak-room accommodation. The architect is Mr. John Fairweather, Wellington-street, Glasgow.

COUNCIL SCHOOL, MICKLE TRAFFORD, CHESHIRE.

The Chester Union Administrative Education Sub-Committee have opened a new school at Mickle Trafford. The building is constructed to accommodate 120 children, with a possibility of extension to 150. There are a hall for drill purposes and three classrooms. The cost of the school is estimated at about 2,100*l.* The architect was Mr. Arthur Jones, of Chester, and the builders Messrs. Huxley & Son, of Malpas.

NATIONAL SCHOOLS, NEWPORT, ISLE OF WIGHT.

New national schools have been opened in this town. They have been erected from the designs of Mr. Percy G. Stone, architect, at a cost of 4,250*l.*, by Mr. Meader, of Cowes.

SCHOOL, ALSTON, CUMBERLAND.

A new school, the Samuel King's Secondary School, has just been opened at Alston. The block, of stone from Nattrass Gill, with worked stone from Prudham Quarry, and Haltwhistle bricks, faces the town. There is a large central hall, from which runs corridors through the sections for boys and girls. From these corridors are reached laboratories, fitted for chemical and physical research, workshops with benches, tools, etc., cookery and laundry rooms, classrooms, cloakrooms, and rooms for the staff. The cost is stated to have been about 3,700*l.* The contractors were:—Building work, Mr. Jos. Birkell, Alston; joiner's work, fittings, and furniture, Mr. Hugh Kearton, Alston; slater's work, Mr. John Hewitson, Carlisle and Newcastle; plumbing work, Messrs. Harrison Brothers, Carlisle; plasterers' and concrete work, and fireproof floors, Messrs. R. M. Ormerod & Son, Carlisle; painters' and glaziers' work, Messrs. R. M. Hill & Sons, Carlisle; heating engineers' work, Messrs. Saunders & Taylor, Manchester; sliding screens, School Furnishing Company, Darlington. Mr. Thaine was clerk of the works. The architect was Mr. T. Taylor Scott, of Carlisle.

PROPOSED SCHOOL EXTENSION, STEPPS, N.B.

The Cadder School Board are considering alternative plans submitted by Mr. Fairweather, architect, Glasgow, for an extension of Stepps School. In the one case five rooms are shown added at the back, giving accommodation for 300 children, while in the other case the extension would be two story, giving eight rooms, or accommodation for 480 scholars. The minor scheme is estimated to cost from 3,150*l.* to 3,500*l.*, while the major is put down at from 4,800*l.* to 5,200*l.*

PROPOSED SECONDARY SCHOOL, MALTON.

Mr. Brierly, who was appointed architect to this work by the Malton Urban Council, is at present altering his plans to bring them within the stipulated sum of 3,500*l.* When finished they are to be submitted to the Education Committee of the North Riding County Council, and it is hoped that building operations will be commenced early next year.

INFANTS' SCHOOL, POKESDOWN, EASTBOURNE.

The Bournemouth Education Committee have approved sketch-plans of a new infants' school proposed to be built on the site adjoining the Pokesdown Council school, and for alterations to the present school. The proposed new infants' school will comprise a small central hall and five classrooms, and is to accommodate about 258 children. The Borough Architect has been asked to prepare the complete plans of the work.

IMPROVEMENT OF THE COURT OF SESSION BUILDING, EDINBURGH.

The alterations and additions which have been in progress during the last two years at the Scottish Court of Sessions are now completed. The most important improvements have been effected in connexion with the Outer Division courts. In place of the four original small, dimly-lighted apartments there are now two small and two large well-lighted and well-ventilated courts, the two latter having jury boxes. Three of these courts still enter from the crush hall at the south end of Parliament Hall, but the fourth—which is entirely new—is entered from the new public corridor which gives access to the extension proper, a four-story building built immediately behind the Outer Division courts and rising from the level of the Cowgate. A complete new heating system has been installed in the courts and corridors. Parliament Hall and the Justiciary and Divisional courts are warmed on the "Plenum" system, air being forced into the rooms over steam heaters by electrically-driven "Stellite" centrifugal fans. The corridors are warmed by direct steam radiators and the Outer House courts by hot water. These are ventilated by a large extract electric fan on the roof. The complete system is fed from one Lancashire steam boiler in the basement, a Royle's calorifier being used for the hot-water circulations. The extension and redecorated courts and halls are lit throughout by metallic filament electric lamps, and the wiring is inclosed in solid drawn-steel conduit. Mr. J. M'Intyre has superintended the engineering work. The clerk of works is Mr. R. O. Johnstone. The total cost is about 27,000*l.* The work has been carried out by His Majesty's Office of Works, under the personal supervision of His Majesty's Principal Architect for Scotland, Mr. W. T. Oldrieve.

HOSPITAL REBUILDING, PLAISTOW.

The foundation-stone was recently laid of the new St. Mary's Hospital for Women and Children, which is to take the place of the existing building. The new building, which runs parallel with Upper-road, will contain sixty-two beds and cots. The cost of erecting and furnishing will amount to 16,000*l.* Messrs. F. & E. Davey, Ltd., of Southend, are carrying out the work from designs prepared by Mr. A. Saxon Snell, architect.

THEATRE, WALLSEND.

A new theatre, known as the Borough Theatre, has been erected in this town. The building is of brick, with stone dressings, and there is sitting accommodation for 273 in the circle, 145 in the orchestral stalls, while the pit and gallery will each accommodate 600. The structural work has been carried out by Mr. Duffy from the designs of Mr. J. Fleming Davidson and Mr. C. D. James, architects, Newcastle and Willington Quay.

WORKHOUSE EXTENSIONS, CLAYTON.

A new board-room has been erected and other building extensions carried out at the North Bierley Union Workhouse at Clayton. The Board's architect, Mr. J. H. Bakes, has worked out the scheme, the cost of which, including furnishing, has amounted to about 1,750*l.* The contractors for the various works were:—Goodals, Ltd., Manchester, marble and wood-block paving, leaded lights, and furnishings; W. H. Horne, Ltd., Idle, ornamental fibrous work; Mr. James Gibbons, Wolverhampton, gas fittings; Messrs. A. Higginbotham & Sons, Idle, heating apparatus; Messrs. P. M. Walker & Co., Halifax, ventilation apparatus; Messrs. E. Balmforth & Sons, Queensbury, masonry; Messrs. Samuel Foster & Co., Ltd., Keighley, carpentry and joinery; Mr. Arthur Walker, Clayton, plumbing; Mr. T. Thornton, Shipley, slating; Messrs. Crabtree & Berry, Great Horton, Bradford, plastering; and Mr. J. Hanson, Allerton, painting. The duties of clerk of works were discharged by Mr. Charles Watkins, of Shipley.

ROWTON HOUSE, SHEFFIELD.

A workmen's hostel has been erected in Water-lane, Sheffield. The hostel has been built by Councillor Arthur Truelove, from the designs of Mr. Frank W. Chapman, architect, of the firm of Hemsoll & Chapman. The building is modelled on the plan of the Rowton Houses, although it is not as large as these, its sleeping accommodation being for eighty-two persons, each of whom is provided with a separate cubicle, measuring 6 ft. 6 in. by 5 ft. The dining-room and reading-room consist of one large apartment, about 50 ft. by 20 ft., divided into two by a folding screen. Both sections are furnished with oiled mahogany tables and pine seats, and at the far end of the dining-room is the large range where the lodgers will do their own cooking. These rooms have concrete floors, the walls are of glazed brick up to a height of 4 ft., and of Duresco distemper above. The bathroom and lavatory department has floors of mosaic, and the walls also up to a height of 6 ft. All the baths and basins are of porcelain. With only one or two exceptions, every cubicle has its own window, and not one of the windows will close. About 1½ in. at the top is left open for the purposes of ventilation.

ELECTRICITY SUPPLY STATION, BLYTH'S WHARF.

This new electricity supply station for the Borough of Stepney, which was formally opened last week, is situated at Blyth's Wharf, Limehouse. It has the advantages of cheap sea-borne coal and an ample supply of condensing water, so that the steam turbines installed can be worked under the best possible conditions for producing large quantities of electrical energy at the lowest possible cost. The main building, which has a frontage to Narrow-street of 130 ft. and a depth of 93 ft., is divided into two portions, a boiler-house and an engine-house. The boiler-house consists of a central stoking area 22 ft. wide, with the boilers ranged on either side and the coal bunkers (of 1,000 tons capacity) supported over. These bunkers are formed with stiffened steel plates, and are supported on riveted steel stanchions. Provision is made for a mechanical conveyor which, when completed, will pass over the coal bunkers for the purpose of delivering coal, and then descend down the end of the building into the basement, where it will collect the ashes from the furnaces. It is intended that this conveyor shall cross Narrow-street by a light bridge and collect coal from, and deliver ashes direct to, barges in the river. The engine-house, separated from the boiler-house by a corrugated iron partition, contains three sets of concrete engine beds, which are carried up from their foundations to the ground floor, where they receive the turbo-generators. A traveller is placed overhead to facilitate the handling of heavy machinery. On the eastern side of the engine-house are galleries for the switchboards, and the basement is occupied by steam-pipes and condensing plant. The building is constructed throughout with fire-resisting materials, the external walls being formed with a steel framework filled in with reinforced concrete. The floors are of steel and concrete, partly paved with granolithic and partly with marble mosaic. The roof covering is of wire-woved glass and corrugated iron supported on steelwork, and ample ventilation is provided by means of steel louvres. The building has been so designed that it can be readily extended down the site when required, and for this reason the northern end of the building is a temporary one, formed of corrugated-iron sheets. On the south-eastern corner of the site is the tank-house for the supply of water to the boilers. This consists of a large tank, built up of sections and supported on

Digitized by Google

steel stanchions; the spaces between the stanchions are filled in with concrete, the rooms thus formed being used as messrooms for the staff. The work of erecting the buildings was carried out by the Fulham Steel Works Company, under the supervision of the Borough Engineer, Mr. M. W. Jameson, and in accordance with specifications and drawings prepared by him. The electrical equipment has been installed under the supervision of the electrical Engineer and Manager, Mr. W. C. P. Tapper.

PROPOSED ASYLUM, GATESHEAD.

A Local Government Board inquiry was recently held at the Town Hall, Gateshead, by Mr. W. O. E. Meade-King into the Borough Council's application to be allowed to borrow 9,400*l.* for the purchase of the West Duddo Estate, in the parish of Stannington, for providing accommodation for lunatics. It was stated that the estate, which is about twelve miles north of Newcastle, has an area of 297 acres, and that the proposal was to put the asylum buildings on the north side of the estate. The buildings were to have a south aspect. Mr. N. P. Pattinson, the Borough Surveyor, was present at the inquiry.

GYMNASIUM, MANCHESTER.

A new gymnasium has been opened in connexion with the Manchester University. The building is in Burlington-street, facing the side entrance to the University quadrangle, and measures 76 ft. long by 38 ft. wide. Besides spectators' gallery, there is dressing accommodation, and plunge and shower baths. Owing to the costly nature of the site, it was found desirable to combine with the gymnasium a large hall on the ground floor, this being 70 ft. long by 49 ft. wide. This is to be used permanently as an addition to the resources of the library. In addition, room has been found for the office, armourer's shop, and storeroom required by the University contingent of the Officers' Training Corps. The new building is in red Accrington brick, with Darley Dale stone dressings. Professor Capper has been the architect of the building, and with him Mr. J. Lindsay Grant has collaborated, while Mr. L. Knowles has been the superintendent engineer, and the contractors Messrs. G. Macfarlane & Sons.

ZOOLOGICAL SOCIETY'S NEW HEADQUARTERS.

Work has been begun on the erection of a new building in Regent's Park for the Zoological Society. The building, which will cost 17,000*l.*, has been designed by Mr. John Belcher, R.A. The exterior of the lower story will be of Portland stone; that of the upper story will be of purple Luton bricks. The Mansard roof will be covered with Delabole slates. The building will contain a hall and library, entered from the ground floor. This room will be 60 ft. in length and 40 ft. in width, and will be lighted from the roof. Surrounding it, on the ground floor, will be rooms for the curators of mammals and birds, a council-room, and various other apartments. The main entrance hall will be paved with marble, and the fittings will be of oak. The offices of the secretary and librarian will be placed upon the first floor, and here also two reading-rooms will be provided, each about 40 ft. long and 22 ft. wide. The secretary's private rooms will be upon the second floor. The new offices are situated on a corner plot of land at the east end of the Outer Circle, between that roadway and the Regent's Canal. The front of the building will be almost opposite the Broad Walk.

ORPHANAGE FOR BOYS, HULL.

A Catholic orphanage for boys has been opened in Queen's-road, Hull. The work of erecting the building was carried out under the supervision of Mr. A. Lyons, of Norton, Malton, the clerk of works, to the designs of Messrs. Brodrick, Lowther, & Walker, while the general building contract has been executed by Mr. J. T. Levitt, Hull. The joinery work was in the hands of Mr. Sanderson, Hull; the plumbing and sanitary work, Mr. I. W. Beall, Hull; the masonry, Mr. John Peers, Hull; the painting and decorating, Mr. Dickson, Hull; the patent petro-lignite floors and mosaic corridors, etc., Messrs. Stephen McFarline, Leeds; the fireproof work, Messrs. Homan & Rogers, Manchester; the heating and engineering work, Messrs. Blackborough and Rhodes, Stockton-on-Tees; the laundry fittings, Messrs. Bradford & Co., Manchester; the kitchen ranges, stoves, and chimneypieces, Messrs. King & Co., Hull; and slating, Mr. Hunter.

POST OFFICE BUILDINGS.

In his report for the year ended March 31, 1909, the Postmaster-General states that the erection of the new General Post Office has made good progress, and it is hoped to complete it by midsummer, 1910. In order that the whole of the General Post Office South may ultimately be devoted to telephone work, it is proposed to remove the Money Order Department to other quarters. For this purpose a site has been acquired in Manor-gardens, Upper Holloway, and plans of the new building are practically settled. As regard London offices, satisfactory progress has been made with the Western District Office, and plans have been settled for the enlargement of the South-Eastern, South-Western, Western Central, and Battersea District offices. A scheme for enlarging and rebuilding the North-Western District Office has been under consideration. The first block of the new Telegraph Stores Depôt at Birmingham has been occupied, and the second block is approaching completion. New head post offices have been completed at Birkenhead, Canterbury, Chelmsford, Dewsbury, Stoke-on-Trent, Warrington, and Hull; and an extensive enlargement of the head post-office at Nottingham has also been completed. The erection of a new letter-sorting office for Manchester, a new head post office for Sheffield, and extensions of the General Post Office at Edinburgh and the head post office at Bristol are in progress. Building operations in connexion with an extension of the head post office at Newcastle-on-Tyne have been begun, and plans for the enlargement of the General Post Office at Dublin and the head post office at Belfast have been settled. Plans for an enlargement of the head post offices at Glasgow and Birmingham are under consideration. During the year fifty-three new buildings specially erected for post office purposes were completed and taken into occupation; and the leases of twenty-eight existing buildings were taken over by the Department after alterations had been effected to adapt them for post office purposes. The expenditure on the erection of new post office buildings and on the enlargement and maintenance of existing buildings amounted in the year to 596,902*l.* in Great Britain, and 22,772*l.* in Ireland.

THE BUILDING TRADES IN GLASGOW.

At a recent Glasgow Dean of Guild Court Lord Dean of Guild Campbell, before taking up the ordinary business, referred to the report of the year's work. He was sorry, he said, that most of the business that passed through the Court last year still indicated a serious depression in the trades most intimately connected with the business which originated there—the building and other trades. During the year there were 369 linings granted, representing a total volue of 902,613*l.*, and this showed only a fractional increase on the previous two bads years, and less than a half of the average of the ten years preceding that. This, of course, was very far from a satisfactory state of matters in a progressive city like Glasgow, and he most sincerely hoped that by this time next year they would be able to record a distinct improvement in this trade. The following linings were afterwards granted:—The Corporation of Glasgow, to erect a shelter for drovers at the Cattle Market, Belgrove-street; Chisholm Brothers, painters, 125, West Regent-street, to alter and add to property at 276, St. Vincent-street; Robert Watson, joiner and builder, Aitkenhead-road, to erect four tenements and dwelling-houses and offices on the north side of Hawthorn-street, Springburn; the Craigton Fleming Company, Ltd., 135, Buchanan-street, and the School Board of the Parish of Govan, 151, Bath-street, to form two streets with sewers at right angles from Paisley-road northwards, and another street with sewers parallel to Paisley-road, connecting the northern extremities of the first-mentioned streets with the estate of Craigton; the Riverside Milling Company, Dock-lane, Kingston, to erect a cooling tower at Springfield Quay.

PROPOSED INFECTIOUS DISEASES HOSPITAL, LOOSE.

An application of the Maidstone Rural Council for permission to borrow the sum of 4,465*l.* for the erection of an infectious diseases hospital in the parish of Loose, was the subject of a recent inquiry by Mr. Sweeting, Local Government Board Inspector. Mr. R. Hoar, Clerk, stated that at present patients were treated in some eight or nine wooden huts, which were erected nearly twenty years ago. Mr. A. W. Smith (of the firm of Messrs. Ruck & Smith) explained the plans. It was, he said, proposed to erect an administrative block, which would be sufficient for some time to come. There would be three wards, containing six, three, and one bed respectively. The drainage would pass into the ragstone.

IMPROVEMENT IN THE BUILDING TRADE AT GREENOCK.

During the past year there appears to have been a considerable improvement in the building trade in Greenock, for the estimated value of the buildings for which warrants were granted by Greenock Dean of Guild Court for the year ended October 28, 1909, amounts to 91,450*l.* This is an increase of 28,005*l.* over last year.

SLAUGHTER-HOUSE, STIRLING.

A slaughter-house has been erected at Laurence Croft by the Stirling Town Council, at a cost of 5,500*l.* The building has, in the cattle section, three stalls, and six animals can be killed at one time, while there is accommodation in the byres for thirty-six cattle. Overlooking the slaughter-house is the superintendent's house and offices. The premises were built to the designs of Mr. A. Goudie, Burgh Surveyor.

SHIRE HALL EXTENSION, BEDFORD.

An extension is being made to the Shire Hall at Bedford. The new building will have an elevation in red brick, relieved with Weldon stone dressings. On the ground floor there will be entrance hall, seven offices, and a range of lavatories; on the first floor four offices, a Council chamber, and councillors' lavatory; on the second floor a range of lavatories and the press gallery. A corridor will connect the lobby of the Shire Hall with the first floor of the annexe. The architects are Messrs. H. Percy Adams & C. Holden. Mr. W. H. Leete, County Surveyor, in the first instance, prepared the plans to indicate what could be put on the ground. The builders are Messrs. Archer & Son, Northampton, and the contract price is 7,396*l.*

Y.M.C.A. PREMISES, SALTASH.

A Y.M.C.A. building is being erected in this town. The premises are being built by Mr. W. H. Rothery, Saltash, to plans prepared by Mr. J. Leighton Fouracre, architect, Plymouth.

Stained Glass & Decoration.

WINDOW, ST. ALBANS ABBEY.

A stained-glass window has just been unveiled at St. Albans Abbey. The window is in the south aisle of the nave, and is the gift of Mr. A. and Mrs. Faulkner (the Mayor and Mayoress) to commemorate the interchange of visits between the municipalities of Caen and St. Albans, and also to serve as a memorial to St. Alban and Paul de Caen. The two principal lights are occupied by figures of Albanus, dressed as a Roman soldier, and Paul de Caen, as a Benedictine monk, bearing a model of St. Albans Abbey, as it was originally, in his hand. In the tracery above the figures is a representation of the Angel of Peace and the ancient arms of England and France. The window is the work of Messrs. Burlison & Grylls, of Gt. Ormond-street, London.

CHOIR STALLS, ST. JOHN'S, MACCLESFIELD.

New carved oak choir stalls have been set up in St. John's Church, Macclesfield. The new choir stalls are placed on raised platforms on the north and south sides of the chancel—two rows of seats on each side. The work is executed in English oak, and has been carried out in the workshop of Messrs. G. Roylance & Co., of Macclesfield, the carved work being done by Messrs. Earp, Hobbs, & Millar, of Manchester, from the designs of Mr. Percy Scott Worthington, M.A., of Messrs. Thomas Worthington & Son, also of Manchester. The church has also been entirely relighted throughout by Mr. W. Booth.

Sanitary and Engineering News.

HARBOUR WORKS AT LEGHORN.

The British Consul at Leghorn reports that the Italian Government have accepted a scheme for the enlargement and improvement of the port, and have allotted a sum of 184,520*l.* for the purpose. It is proposed to build a mole in a straight line, 765 yds. in length, to adjoin the present curvilinear mole of the outer harbour; also a mole, 1,557 yds. in length, starting from the Marzocco Tower. These two moles will form a larger outer basin. A quay is to be built on the seaward side of, and widening, the present Diga Rettilinea, and this new quay, along which the railway will run, will thus be within the new basin.

FERRO-CONCRETE BRIDGE, SEAHAM HARBOUR.

A ferro-concrete bridge has just been constructed at Seaham Harbour for the Londonderry Collieries, Ltd. It is built over the Londonderry Colliery railway (four lines) near Swinebank Cottages. The bridge, which is entirely of ferro-concrete, including the foundations, has been constructed by Messrs. Gradon & Son, contractors, Durham, from the designs and under the supervision of Mr. Harry W. Taylor, M.Inst.C.E., engineer to the

Digitized by Google

British Concrete-Steel Company, of Newcastle. The bridge, which was designed to carry a rolling load of 30 tons, was tested with two 15-ton steam rollers. The permissible deflection of 1-600th of the span is 0·85 of an inch, whereas the actual deflections were as follows, namely, 0·098 of an inch with the two rollers side by side at the centre of the bridge, and 0·074 of an inch with them tandem on the bridge, or less than one-eighth of the permissible deflection. The permanent set when the two rollers were removed amounted to 0·005 of an inch.

SEWAGE SCHEME, ROSYTH.

The Dunfermline Town Council recently held a special meeting for the purpose of hearing a report by Messrs. Crouch & Hogg, civil engineers, Glasgow, in regard to the proposed joint sewage scheme for the area between Dunfermline and Rosyth. The work is estimated to cost 102,000*l.*, exclusive of a storm-water sewer, which would cost 18,000*l.* The Town Council have communicated with the Burgh of Inverkeithing and the Admiralty with the view of securing their active co-operation in the matter.

SEWAGE DISPOSAL WORKS, WAKEFIELD.

Mr. A. G. Drury, M.Inst.C.E., Local Government Board Inspector, recently held an inquiry into an application of the Wakefield Corporation for power to borrow 33,550*l.* for works of sewage disposal, and 2,000*l.* for the widening of the Springs and portions of Warrengate and Vicarage-street. The Town Clerk, Mr. W. W. Greenhalgh, explained that the amount of 33,550*l.* was required for the remodelling of the works at Calder Vale to treat the sewage of the city, which up to now had been treated by precipitation, but as they had become inadequate it was now proposed to adopt percolated filters for the treatment of the sewage after it had passed through a chemical process. The extra sewage to be treated, through the extension of the city boundary by including Sandal, had also been taken into account. With regard to the widening of the Springs, it was proposed to take in a portion of the Vicarage Croft burial-ground, a faculty for which had already been obtained. There was no opposition to either of the schemes.

SANITARY IMPROVEMENTS, MIDDLESBROUGH.

A Local Government Board inquiry was recently held with reference to an application of the Middlesbrough Corporation for sanction to borrow 2,500*l.* for the purpose of adopting in one portion or area of the town the water-carriage system for the pan and midden system. The Inspector was Mr. W. O. E. Meade-King, M.Inst.C.E. The Deputy Town Clerk, Mr. Preston Kitchen, explained that the gradual doing away of the old system and the instalment of water-closets was to be carried out in sections. The area for which applications was now made was the first of these sections. The approach to the present closets for scavenging purposes was by means of 3-ft. back passages. This caused scavenging to be difficult, costly, and unsatisfactory. Mr. S. E. Burgess, Borough Engineer, also gave evidence in support of the scheme.

Miscellaneous.

BRIDGE BUILDING IN RUSSIA.

Lately bridge building in Russia has been so actively carried on that the more important works deserve some mention. The railroad traffic leaving St. Petersburg, which opens up the north of Russia, *i.e.*, the rail to Archangel and the Siberian rail to Vologda and Perm, could not be connected with the Moscow railroad system as the Volga is not bridged at Yaroslav. This will now be remedied by a proposed bridge 700 metres long. Up to the present all the traffic to Siberia has had to cross the one bridge existing over the Volga. This is the well-known Syrron-Alexandrovitch Bridge, opened in 1880, whose thirteen openings are each 107 metres wide. The soffit of the iron superstructure is 23 metres above low water. It is now proposed to erect a second bridge over the river at Kasan. It will consist of ten spans, 155 metres wide each, so that its total length will be 1,550 metres. The proposed bridge over the Amur will have eighteen spans, each 120 metres wide in the clear. Another remarkable bridge now completed is the one over the Dnieper at Alexandrowsk. The river, which is narrowed here by rocks, is crossed by a single span 190 metres in width. The main girder is built up on the same principle as in the Forth Bridge. Yet another big bridge has been thrown across the Buson mouth of the Volga in connexion with the Astrakhan railroad. It is a cantilever bridge. The central opening is 220 metres wide, and is spanned by beams 156 metres long, resting on 32-metre cantilevers.

MALINES CATHEDRAL.

It is suggested to complete the tower of the celebrated cathedral of Saint Rombart, Malines. Canon Van Caster, a learned archæologist, is the author of the scheme. According to his calculations the total cost of the work, which would endow Belgium with a monument that would be unique in the world, would be 1¼ million francs. Plans, models, and details all are ready. The *Soir*, a Brussels newspaper, is not enthusiastic on the subject, and says:—"Is the utility of this work apparent? The belfry in its present form has for centuries won admiration; it gives its character to the town; it perpetuates its historic and æsthetic tradition. We should not care to see the second tower of Antwerp Cathedral completed, should this fancy ever take hold of any architect."

BRAZILIAN TIMBER.

According to the report of the British Legation at Rio, nothing is more capable of development and at the same time shows less sign of life than lumbering in Brazil. With scarcely a State which is not rich naturally in several beautiful species of timber, and many, such as Para and Amazonas, containing immense tracts of forests entirely neglected, there can be no doubt that when the many difficulties which beset the industry are overcome and the qualities of the woods become known abroad, there will be an incalculable opening for commerce in timber in Brazil. At present the industry suffers from everything. It will probably be some time yet before transport in the healthy and workable districts, such as Parana, is sufficiently cheap to permit of a really profitable engagement in lumbering; while along the Amazon, where "logging" would appear to be comparatively simple, and where many of the finest cabinet woods in the world abound, the working of the forests is undoubtedly retarded by an unhealthy climate. The exports of sundry woods from Brazil do not at present amount in value to 50,000*l.* a year. The principal kind exported is *jacarandá* (Brazilian rosewood). It is well known in Portugal under the name of *pau preto* (blackwood), where it has been appreciated for church work and furniture for centuries. *Jacarandá* is shipped chiefly to France and Germany, but a little goes to Portugal and the United Kingdom, whilst the United States take a fair amount.

OPEN SPACES AND RECREATION GROUNDS.

Mr. S. Simmonds, of Friern Park, has presented the Friern Barnet District Council with the purchase-money, 7,500*l.*, for the Friary, whereof the old house and grounds, of about 23 acres in extent, will be adapted as a place of resort and recreation. The National Trust have just entered into an arrangement with Mr. G. A. Wills for the management by a local committee of the lands—Stokeleigh Camp and Nightingale Valley—in the Leigh Woods, near Bristol, which he recently purchased with a view to preserving their natural beauties and archæological interest, and to securing them for the public enjoyment. The property consists of about 70 acres of the most beautiful sylvan scenery on the Somerset side of the gorge of the Avon.

RAY MILL ISLAND AND LOCK.

The Thames Conservancy Board have formulated a scheme for purchasing Ray Mill Island from the owners, Oxford University, and for constructing a big lock for pleasure-boat traffic. The island lies at a short distance down stream from Boulter's Lock, which will be reserved for the passages of barges. The project comprises the erection of a bridge to connect Ray Mill Island with the road on the Bucks side of the river, and involves the demolition of the old flour mill opposite the island.

PARLIAMENT HOUSE, MACHYNLLETH.

A scheme is undertaken for the conversion, at an estimated expenditure of some 8,000*l.*, of the Senate, or Parliament, House for purposes of a free library and institute. The building, which latterly has been put to very humble uses, is that wherein Owen Glendower convoked, in 1402, the nobles and commoners of Wales, and having escaped from assassination there by David Gam, was acknowledged and crowned as Prince of Wales. The interior will be entirely remodelled, and the building will then be committed to the Urban District Council.

THE FRIEDRICHSTRASSE GALLERY, BERLIN.

Apart from two or three somewhat dingy arcades London possesses nothing even distantly resembling the splendid gallery recently completed between the Friedrichstrasse and the Oranienburgerstrasse, Berlin. The building covers a total area of nearly 100,000 sq. ft., and is devoted to shops, showrooms, and offices. It is divided into two unequal parts by an arcade, 43 ft. wide by 550 ft. long, reserved for pedestrian traffic, and bordered on either side by five stories of shops, near the centre being a circular court surmounted by a lofty dome of 47 ft. interior diameter. Numerous lifts and stairways give access to the upper floors, which are well lighted from the glazed roof of the arcade, and by windows opening upon interior and exterior courts. The space beyond the business premises bordering the main arcade is occupied in part by these courts, to which access is given by arched carriageways, around the courts being administrative offices and rooms devoted to the dispatch of goods purchased by customers. In the basement story there are a staircase leading to the underground railway, belt conveyor installations, heating apparatus, and other details of the mechanical equipment. Some of the large stores and shops in London offer conveniences akin to those provided by the new gallery, although not presenting the same attraction to members of the public desiring merely to inspect goods exposed for sale, or of passing an odd hour sheltered from inclement weather and away from the noise and bustle of street traffic.

THE ALHAMBRA.

The British Vice-Consul at Granada writes to the Foreign Office:—"The Alhambra has been the subject of much discussion, and a plan is said to be under consideration to acquire all the houses within and around the fortress so that by their demolition it may be freed from any unsightly obstructions. In the meantime restorations are being carried forward in many parts of the building and surrounding towers with rather a free hand, the result being somewhat disappointing. The hotel which is being built just outside the zone of the Alhambra has so far advanced that a good idea may now be formed of its importance; yet, whatever may be its advantages in other respects, it must be admitted that the choice of the site it occupies was unfortunate, as it blots out a superb view which was the charm of Pasco de los Martoies, and harmonises so little with the old walls and towers of the Moorish fortress which form its background. Apart from this, the hotel will be remarkable for its fine situation and the striking panorama it commands of the Vega and Sierra Nevada."

THE FRENCH EXHIBITION AT COPENHAGEN.

The exhibition of French decorative art which was held some time ago at Copenhagen, under the patronage of Queen Louise, was a great and deserved success. The exhibits of manufactures, works of decorative artists, and products of artistic industries were most remarkable. More than 600 artisans worked for this important exhibition, and a great number of architects contributed towards its success. The French Association for Exhibitions Abroad and the Society for the Encouragement of Art and Industry took the initiative in this exhibition. French artistic decorators and industrial arts are not well enough known in certain lands. These two societies have thus found a means of spreading this knowledge and of opening up new markets for French artistic productions.

THE POSTAL UNION MONUMENT, BERNE.

On October 4 the monument was unveiled which commemorates the founding of the universal postal union. It is erected on the Promenade des Petits-Remparts, and represents a terrestrial globe round which are dancing five female figures personifying the five Continents. A majestic figure of Berne completes the allegory. We may recall the fact that the monument was executed by the French sculptor, R. de Saint-Marceaux, who won the work in a competition open to artists belonging to the subscribing States.

RECENT ART SALES.

On October 22 Messrs. Knight, Frank, & Rutley disposed of some pictures belonging to Sir George Dashwood, of Kirtlington Park, Oxfordshire; the chief lots comprised a half-length portrait, by Rubens, of Ladislas VII., King of Poland—200 guineas, and Diogenes, in a group of figures, by J. Jordaeus—105 guineas (Eyles); G. Houthorst's portrait, on panel, of Prince Frederick Henry of Orange and Nassau—60 guineas (Dowdeswell); Calvario's St. Mark's, and the Campanile—175 guineas (Cohen); and T. S. Cooper's Deal Common, with a study of sheep, 1880—105 guineas (Mitchell). The sale last week of the late Mr. A. A. Vansittart's old-English silver plate included a round salver, with decorated border by R. Rew, 1775, at 1*l.* per ounce—44*l.* 15s. (Ledger); a parcel-gilt Nuremberg pineapple cup, 21 oz. 19 dwt.—50*l.* (L. Myers); a hannap and lid, dated 1632, attributed to B. Frances, at 21*l.* 10s. per ounce—462*l.* 10s., and a small muffineer and cover, tankard-shaped, 1716, at 10*l.* 15s. per ounce—20*l.* 9s. 3d. (Crichton Brothers); a squat-shaped tankard marked with a lion's face, and probably by T. Skottowe, of King's Lynn, of the middle XVIIth

Digitized by Google

century period, at 6*l.* per ounce—108*l.* 12s.; and a similar smaller tankard, bearing the same mark, at 6*l.* per ounce—101*l.* 2s. (Harris).

On November 8-12 MM. Leroy Frères will sell the collection of pictures, bronzes, porcelain, bric-à-brac, etc., of the late M. Edouard Fétis, President of the Brussels Museum, and author of the catalogue. The paintings embrace examples of Quentin Matsys, L. van Leyden, L. Cranach, and A. Isenbrant. On October 22 Messrs. Hodgson sold a copy of J. B. Papworth's "Select Views of London," 1816, with seventy-six coloured plates in fine state, for 24*l.* 10s. (Hornstein), and E. T. Cook and A. Wedderburn's edition, 1903-9, in thirty-seven volumes, of the "Complete Works" of Ruskin, for 21*l.* (G. H. Brown).

PARISH CHURCH, LALEHAM, MIDDLESEX.

The fabric has fallen into a serious condition of disrepair, and the roof, after examination, is pronounced to be unsound. The church, dedicated to All Saints, consists of a nave of three bays, north aisle, chancel with north chapel, and a north-western tower. The low tower, overgrown with ivy, is of the early XVIIIth century, and constructed of brick. The remaining arcade of the nave has two Norman piers, with a hood and billet moulding above the middle arch; there are fragments of Norman moulding in the south wall, together with manifest indications of an aisle on that side. The north chapel is a good specimen of præ-Reformation brick masonry, with square-headed windows, the moulded bricks of which were formerly covered with plaster, thinly laid, to give an appearance of stone. The altar-piece, by G. H. Harlow, depicts Christ walking on the sea. A brass tablet in the north aisle commemorates Dr. Arnold, who lived, 1819-28, in a house on the site of the present vicarage, and whose son Matthew was buried, 1888, in the churchyard.

NO. 26, PARK-LANE, W.

This property will be offered shortly for sale at the Mart. The house was built in 1895-6 by Messrs. Trollope, after plans and designs by Messrs. Balfour & Turner, for the late Mr. Alfred Beit, upon the entire plot (15,600 ft. super.) between Park, Aldford (formerly Chapel), and South streets. The ashlar of the exterior Portland stone was left from the saw, the moulded work being rough-tooled; the joints are deep—½ in. flat pointed. The entrance is of a black-toned granite, from Alloa, and unpolished. The vestibule has oak panelling and carving in the Henri Deux style; the long hall, lighted with a stained-glass dome over the gallery landing, is decorated with woodwork in the early English Renaissance style; the main staircase, of oak, ascends to the first floor only. The library, decorated in the early French Renaissance manner, has a ceiling panelled and inlaid of fancy woods, with ribs of Italian walnut, and a fireplace with Verd des Alpes marble frame and carved walnut wood mantel. The north and south drawing-rooms are decorated after the Regency style. The partitions on the upper floors are formed of coke-breeze concrete upon scaffold-board centring, stiffened with gas-barrel uprights. The annexe, an amplification of the original plans, contains the billiard-room and winter garden; the intersected lunette vaulting has three courses of tile in cement, with finishing in plaster and groin mouldings. The external decorative panels were sculptured by Mr. Henry Pegram, Mr. L. A. Turner executed the interior carving. The property is held on a lease from the Duke of Westminster, at a ground rent of 1,150*l.* per annum, with seventy-five years unexpired; in February last year it was withdrawn from sale at a bid of 60,000*l.* on behalf of the vendors.

GARDEN SUBURB, NORTH ACTON.

A project is undertaken by the Acton District Council for the purchase of some land in North Acton, with a view to the building of workmen's dwellings and the formation of a garden suburb. Operations will be begun with the erection of 200 houses, in blocks of two and three, fifteen on each acre, to contain five rooms and a bathroom, and to be let at an inclusive rent of from 6s. 6d. to 8s. 6d. per week.

GARDEN CITY FOR CHESHIRE.

A recent issue of the *Liverpool Courier* contains some particulars as to a projected scheme for creating a garden city at Bromborough Port. The proposed estate, which will bear the name of the Bromborough Port Tenants, Ltd., and is part of the Bromborough Port Estate, lies between New Chester-road and the Mersey, about a mile outside the borough boundary of Birkenhead. It is triangular in plan, and bounded on the south (which is its longest frontage) by a new 30-ft. road, on which is a similar triangle, of which the Society are to have the first refusal for the purposes of an extension. The other two sides of the triangle will be bounded by roads. The site is stated to be eminently suited for a workers' garden village. The area, including two shorter boundary roads, each 45 ft. in width, is about 26½ acres, and as the vendors offer the land freehold at 400*l.* per acre, or on a 999 years' lease at an annual ground rent of 20*l.* per acre, redeemable at any time during the lease at twenty-two and a half years' purchase, it is proposed to take the land on lease.

FIELD AND LANDSCAPE ADVERTISEMENTS, LAKE DISTRICT.

The Parliamentary Committee of the Lancashire County Council have framed a code of by-laws for preventing the display of disfiguring field advertisements in the areas of the Dalton-in-Furness, Ulverston and Grange Rural Councils. In every township, with the exception of the areas of Ulverston and Dalton-in-Furness, by-laws which apply to present holdings at the expiration of five years will now be enforced.

A BOULEVARD IN MILE END, E.

On October 28 a tree was planted to inaugurate the scheme for laying out Mile End Waste, in the main road, as a public boulevard. The Stepney Borough Council agreed to purchase the rights of the lord of the manor over the Waste, together with other market rights which he held in the borough, and will frame regulations for the control of the street market, and the preservation of the boulevard as an open space.

CHURCH OF ST. ANNE, HOXTON.

A fund is opened for the repair of the Church of St. Anne. The church was built, in Hoxton-street, for 700 sittings, after designs by Mr. Chambers, and was consecrated in May, 1870.

CLIFTON CAMPVILLE CHURCH, STAFFS.

The Bishop of Lichfield appeals for contributions to a sum of 1,000*l.*, being the balance of the estimated cost, 3,000*l.*, of the immediately necessary repair of the fabric of the parish church of St. Andrew, Clifton Campville, near Tamworth, which has been surveyed by Mr. W. D. Caröe. The church, a fine example of the Early English and Decorated styles, is conspicuous for its western tower, and a spire which rises to a height of 160 ft.; it has a nave, two chancels with a dividing screen, south aisle and chantry chapel, and north transept, with a chantry chapel and a priests' room above. The plan measures 128 ft. by 48 ft. There are some paintings on glass, one of which represents St. Mark; in the south chancel is the monument of Sir John Vernon, who died in 1545, with recumbent effigies of him and Lady Vernon.

THE LATE W. F. STANLEY'S ESTATE.

The estate of the late William Ford Stanley, J.P., F.R.A.S., F.G.S., etc., of South Norwood, founder and for many years principal of the firm of Messrs. W. F. Stanley & Co., Ltd., of Great Turnstile, Lincoln's Inn-fields, scientifical, engineers' and draughtsmen's instrument makers, who died on August 14, aged 80 years, has been sworn at 58,905*l.* 18s. 4d. gross value, with net personalty 54,492*l.* 5s. 11d. The numerous bequests comprise 1,600 preference shares in the firm to the Stanley Technical Trade Schools, subject to certain prior life interests of relatives; 100 similar shares as endowment of prizes to pupils of the science and art departments of the Croydon Council Schools; and the income of 100 other similar shares for award annually to students in the Norwood, Thornton Heath, and Croydon Polytechnics. Subject to his widow's life interest therein he left residuary preference shares in the firm to the governing body of the Stanley Technical Trade Schools. Mr. Stanley presented the Public Hall and Art Gallery to South Norwood, for which he himself made the plans and designs; in his lifetime he set apart an aggregate sum of 80,000*l.* for providing technical trade schools and promoting education in music.

ABERDEEN GRANITE AND FRENCH TARIFF.

At a meeting of the Council of the Aberdeen Chamber of Commerce, on the 26th ult., the Chamber Committee reported that a letter had been submitted from Messrs. James Wright & Sons, granite merchants, Aberdeen, complaining of the proposed increase on the French tariff charged on the importation of granite monuments into France, and stating that the effect of this increase would be very injurious to local trade. After hearing a statement from Mr. Stewart the meeting unanimously agreed to recommend the Council to remit the matter to Mr. Stewart and the secretaries to prepare a memorial to the Minister of Commerce of the French Government, to be forwarded to and dealt with by the British Chamber of Commerce of Paris, pointing out the injurious effect which the proposed increase would have upon the local granite trade.

MEMORIAL TO THE LATE LORD KELVIN, GLASGOW.

A memorial to the late Lord Kelvin is to be erected in Glasgow. The committee of subscribers have decided that the memorial shall take the form of a statue, to be executed by Mr. A. M'F. Shannan, A.R.S.A.

GLADSTONE MEMORIAL, EDINBURGH.

The Scottish memorial to Gladstone, which is being executed by Mr. James Pittendrigh Macgillivray, R.S.A., and for which the Edinburgh Corporation have granted a site in St. Andrew Square, is in an advanced state of preparation. The monument will be about 28 ft. in height. It will rise from a base about 28 ft. long by 18 ft. wide. The architectural part of the work is mainly of red granite, while the statuary is to be cast in bronze. The principal figure—Mr. Gladstone, in the robes of the Chancellor of the Exchequer—will measure with its plinth 9 ft. 6 in. in height. But there are four subsidiary allegorical pilaster figures in bronze, each 6 ft. in height. These are to be attached to the four corners of the central pedestal on which the statue stands. Further, two sitting figures, each about 7 ft. 6 in. in height, will be placed at the ends of the monument, and two figures of boys, about 5 ft. high, will stand in front of the main pedestal supporting a laurel wreath. In addition, a medallion of Mrs. Gladstone will be placed in a panel at the back of the monument, and two decorative panels, 5 ft. long and 10 in. wide, are to be set in front of the side piers. Thus there will be in all nine statues, one medallion, and two panels, all executed in bronze.

MARQUIS OF LINLITHGOW MEMORIAL, EDINBURGH.

A memorial statue of the late Marquis of Linlithgow is to be erected at Edinburgh. The site for the monument has not yet been determined, but the west end of George-street and also Charlotte-square have been suggested. The execution of the statue is in the hands of Sir George Frampton, R.A.

THE HEATING OF ST. PAUL'S.

The Vestry of St. Gregory by St. Paul have consented to the Dean and Chapter of St. Paul's Cathedral applying to the Consistory Court for authority to use the northern half of the parochial vault in the Cathedral grounds as part of the scheme for improving the heating of the Cathedral. The Dean and Chapter intend to remove the mural tablets and other memorials of the dead from the northern to the southern half of the vault, the cost of removal and of putting the southern part into a proper state of repair to be borne by the Cathedral authorities. The portion to be used for the purposes of the Cathedral is to be walled off from the remaining part.

LIVERPOOL HOUSING SCHEME.

The Housing Committee of the Liverpool Corporation have had under consideration a memorandum prepared by the Corporation Surveyor, Mr. Thomas Shelmerdine, in reference to the recommendation of the Committee to the City Council for authority to make application to the Local Government Board for sanction to the borrowing of 225,500*l.* for carrying out an improvement scheme under a 1903 order, for dealing with Beau-street, Bevington-street, Holly-street, Frank-street, Grafton-street, and Saltney-street areas. The memorandum states that the total number of square yards comprised in these six areas is 43,995 gross, or 37,469 net, of which 5,556 is proposed to be given up for street improvement purposes and a recreation-ground, in respect of which no credit is taken. The number of persons who will be dispossessed is 3,268. Under the terms of a provisional order the Council are required to provide suitable dwellings for the accommodation of 2,828 persons. The plans now submitted, however, provide accommodation for 2,960, and this excess provision will be allowed by the Local Government Board to be taken into account in connexion with the demolition of property under the Liverpool Sanitary Amendment Act, 1864, which involves the Corporation in an obligation to provide accommodation for such proportion (not being less than one-half) of the persons who may be displaced by such clearances as may be determined by the Board. With regard to the estimated cost of erecting dwellings on the sites of these areas, the buildings proper are all priced at 5d. per cubic foot, which amounts to 104,891*l.*, and the difference between this amount and the amount proposed to be borrowed for building, viz., 121,500*l.*, is made up by the cost of such items as formation of back streets, plinth and railings to playgrounds, formation of grass plots, clerk of works' wages, and a contingency of 10 per cent. Taking the actual estimate of the cost of buildings, it represents about 70*l.* 17s. per room, but were a scullery, which is provided in every case, to be reckoned as a room the cost would then represent about 50*l.* 10s. per

Digitized by Google

room. In February, 1905, the Housing Committee reported that the cost of erecting the first portion of the Hornby-street area was 62*l.* 15*s.* per room, that is, not including scullery as a room, or 46*l.* per room, including the scullery. The rooms and sculleries in the dwellings now under consideration are on the average more than 10 per cent larger in size than the dwellings erected in 1905.

BAPTIST CHURCH, WATFORD.

The opening of the Leavesden-road Baptist Church and Institute, Watford, took place on Thursday, the 4th inst. The church is designed in a late period of Gothic freely treated, and will accommodate 700 persons. Externally the building is faced with pressed red bricks, with Bath stone dressings; the internal joinery is of pitch pine. The contract has been carried out by Messrs. Chas. Brightman & Son, Watford, and amounts to 4,150*l.* The architects, whose designs were selected in a recent competition, are Messrs. Geo. Baines & Son, of London.

ROYAL SANITARY INSTITUTE CONGRESS AND EXHIBITION, 1910.

The Council of the Royal Sanitary Institute have accepted an invitation from the Town Council of Brighton to hold the next Congress and Exhibition of the Institute in Brighton during the first two weeks of September, 1910.

ELSTREE CHURCH.

During the removal of an old wooden platform at the east end of the chancel of Elstree church, seven memorial brasses were discovered. The brasses, which are of beautiful workmanship, bear the names and arms of members of the Sharpe family, and various dates during the XVIIIth century. A vault and a Purbeck marble stone to John Warren was also revealed, bearing the date 1697. The brasses have been placed on the wall of the church.

AN OBSERVATORY AT THE VATICAN.

For many years an astronomical observatory has existed at the Vatican. This scientific installation is now being transformed, and the important work, begun in 1906, is approaching completion. The old observatory was situated in the tower of Pope Gregory. This site has been abandoned for a new tower called Pius X., which is built in the gardens near the tower Leo XIII. The new tower is at the summit of the Vatican Hill; it consists of three stories, solidly built, and surmounted by a large terrace, in the centre of which is a circular wall 3·50 metres high and 4 metres thick, which carries an immense semi-spherical dome. The top is over 100 metres higher than St. Peter's. This dome, 8 metres in diameter, covers the scientific instruments. It is placed on rollers, so that it can revolve and allow of observations being taken in every direction.

Law Reports.

WHAT IS A "BUILDER"?

At the Guildhall on Tuesday, October 26, before Mr. Alderman Cooper, Messrs. J. D. Pitcher & Sons, Ltd., 251, Goswell-road, were summoned for having, in or about the month of October, unlawfully executed, or caused to be executed, certain building works at 19, Great Winchester-street, without having given at least two days' clear notice to the District Surveyor, as required by sect. 145 of the London Building Act, 1894.

Mr. John Todd, District Surveyor for the eastern division of the City, said that on October 12 he noticed certain building works were in progress at 19, Great Winchester-street. The stone landings were being "made out" so as to fit a new lift, and the well-hole of the staircase was being restricted.

As the witness proceeded to describe further the nature of the work, Mr. H. W. Rowsell, counsel for the defence, interposing for the purpose of saving time, said he did not dispute that the giving of a notice by somebody was necessary.

Mr. Todd went further, and declared that some of the work was in contravention of the Act, and required to be altered. Mr. Rowsell retorted that that matter was outside the summons, and was only mentioned for the purpose of prejudicing the case.

Mr. Todd went on to say that he had received no notice that the work was to be commenced, but on October 14 he had an intimation from the defendants that they were doing certain work. It was not, however, a "building notice."

Mr. Rowsell observed that the point he had to submit was a very important one, from a builder's point of view. What he said was that a "builder" within the meaning of this section was the principal or head person in any building operation, and not a subordinate. Subcontractors employed to do piecework were not aimed at. In the building of a house, for instance, various branches of the work were given out. There was the removal of the turf, the bricklaying, and so on, but the person who directed all these operations was the builder, and he it was whom the Act required to give notice to the District Surveyor. It would be monstrous, he suggested, to require the bricklayer and the other workers each to give notice of his particular job. Moreover, the person liable in the words of the section—was the "builder or any other person causing or directing a work to be executed."

The head builders in this case, and the persons causing the work to be executed, were Messrs. Waygood, Ltd., the lift specialists, and the defendants were subcontractors. As a matter of business, had Messrs. Pitcher been the persons to give the necessary notices, it would have been mentioned in their specification.

Mr. John Robert Pitcher, managing director and secretary to the defendant firm, stated that in the month of August they entered into a subcontract with Messrs. Waygood for the work at 19, Great Winchester-street, and there was nothing in their specification as to the giving of notices. They really did not have sufficient knowledge of the matter to enable them to fill them in.

Cross-examined by Mr. Lewis (for the Surveyor), the witness said he had had considerable experience in building work. In preparing the stairway for the fitting of a lift he did not know that a building notice was necessary.

Mr. Charles Wm. Hildred, an engineer in the employment of Messrs. Waygood & Co., Ltd., Falmouth-road, said they had a contract with the owners or occupiers of 19, Great Winchester-street, to put in a lift. They undertook to get the building work done, but they had had nothing to do with it beyond passing the order on. The firm were not builders, but lift engineers. As a rule the necessary notices were served by the builder.

Mr. Lewis argued that the builder referred to in the section was the person actually doing the work. There could be no question that the builders were not Messrs. Waygood, because they said that up to the present they had done none of the work, and they were not builders at all. He maintained that the persons who were the builders on this job were Messrs. Pitcher. He was afraid that the definition of a "builder" in the Act was not a very happy one, because it only specified a person who "executed, or caused to be executed, certain building works." It did not say a "builder." The persons employed to execute the work here were Messrs. Pitcher.

Mr. Savill (Chief Clerk): Doesn't it mean the person employed by the owner? Otherwise, where do you stop? You can imagine a job divided between three different workmen. Are you to go to the journeyman?

The Magistrate: Suppose Messrs. Pitcher employed someone under them to do the work?

Mr. Lewis: If they were another firm of builders I should say it would have been quite open to us to have gone to them.

The Magistrate: The view I take is that you have summoned the wrong person. It is a very difficult point to decide.

Mr. Lewis: A very difficult one for the District Surveyor, and I don't believe it ever has been decided.

Mr. Savill: I have searched for a case, but can't find one.

Alderman Cooper: I shall dismiss this summons, but shall be pleased to state a case for the High Court.

ACTION BY BUILDERS AND CONTRACTORS.

Mr. Muir Mackenzie, the Official Referee, on the 28th ult., concluded the hearing of the case of Haydon & Sons *v.* Millis—an action brought by the plaintiffs, a firm of builders and contractors, to recover 86*l.* 13*s.*, the balance of account for work and labour done in converting Nos. 45 and 47, Queen's-road, Clissold Park, into flats for the defendant. Plaintiffs' case was that the sum sued for had been certified as due to them by the defendant's architect.

Defendant denied that he was indebted to the plaintiffs in the sum of 86*l.* 13*s.*, and counterclaimed against the plaintiffs, alleging that they had not carried out the work in accordance with the contract.

After hearing expert evidence called on both sides, the learned Official Referee held that the plaintiffs were entitled to succeed, and entered judgment for them on the claim for 36*l.* 13*s.*, the defendant having paid 50*l.* into Court. The learned Official Referee, upon the defendant's counterclaim, commented upon the fact that the defendant had not made complaints about the plaintiffs' work until some time after the architect had given his final certificate. He expressed the opinion that the defendant had not made out that the plaintiffs' work was not in accordance with the specification, and dismissed the counterclaim with costs.

Judgment was accordingly entered for the plaintiffs on the claim and counterclaim, with costs on the High Court scale.

CLAIM BY A BRICKLAYER.

The case of Harper *v.* Linthorpe Dinsdale Smelting Company, Ltd., came before a Divisional Court, composed of Justices Darling and Bucknill, on the 20th ult., upon the defendants' appeal from the judgment of the County Court judge of Middlesbrough.

The facts of the case were as follows:—The plaintiff, with other men, had been employed by the defendants as a bricklayer. On January 27 last plaintiff was working on night shift, and at 5 a.m. was given notice that his employment would cease at 6 a.m. Upon the termination of the plaintiff's employment 5*l.* 4*s.* 8*d.* was due to him, and at six o'clock he went to the office of the defendants to ask for the amount. No one being in the office plaintiff was kept waiting until 10·45, when he was paid. In these circumstances plaintiff brought an action against the defendants claiming 3*s.* 11*d.* for loss of time owing to the defendants' delay in paying the wages due to him. Before the County Court judge evidence was given that it was the custom to pay the workmen's wages at the expiration of the hour's notice given to them, so that there might be no delay in applying for another job. The County Court judge entered judgment for the plaintiff for the amount claimed upon the ground that it was unreasonable to expect him to wait for some hours for his money after being dismissed at an hour's notice. Hence the present appeal of the defendants, upon whose behalf it was contended that the decision of the learned judge was wrong in law, and that there was no evidence of any such custom as alleged.

At the conclusion of the arguments of counsel, Mr Justice Darling held that as the plaintiff had accepted the money due to him, if he had any sort of right to nominal damages, he had sacrificed it by taking the money before he brought his action. He was of opinion that there was no evidence upon which the learned County Court judge could found his judgment, that there was an implied contract by the master to pay the plaintiff for waiting for his wages, and the appeal must therefore be allowed.

Mr. Justice Bucknill gave judgment to the same effect, and the appeal was accordingly allowed.

BRICKBATS.

At the Thames Police Court on Thursday, October 28, Mr. Edwin Bell, of Aldgate East-chambers, was fined 3*l.*, with 2 guineas costs, for a breach of the by-laws of the London County Council made under sect. 16 of the Metropolis Management and Building Act Amendment Act, 1878. The summons was issued by Mr. John Dickinson at the instance of Mr. Arthur Crow, District Surveyor for Whitechapel, Spitalfields, etc., who stated in his evidence that he found 240 bats in a portion of the south wall of a building in course of erection at the rear of Nos. 9-13, Whitechapel High-street. The piece of work complained of would, if it had been erected in accordance with the by-law, have contained about 420 whole bricks. Mr. Crow pointed out to the magistrate that such work was deficient in proper bond, and stated that he had recently had to condemn a wall built in this way as a dangerous structure, a portion of the wall having fallen out into the passage of a house.

Capital and Labour.

BLACKBURN LABOURERS AND THEIR WAGES.

The Blackburn branch of the Gasworkers and General Labourers' Union have sent an application to the Master Builders' Association for an increase in the wages paid to men engaged as navvies in the building trade from 5½d. to 6d. per hour. The branch has also addressed a letter to the Town Council asking that these clauses be inserted in all future building contracts let by the Corporation:—(1) That the contractor shall pay the following rates of wages to the following classes of workers—Builders' labourers, plasterers' labourers, and flaggers and slaters' labourers, 6½d. per hour; scaffolders, 7d. per hour. (2) That the lowest rate of wages paid to all other classes of unskilled workers on such contracts shall not be less than 6d. per hour.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xvi.; Auction Sales, xxvi.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

NOVEMBER 24.—**Bury.**—LAYING-OUT GARDEN CITY SUBURB.—The Bury Housing and Town-Planning Association offer three prizes for a design for laying-out a garden city suburb. For further particulars see advertisement in our issue of October 30.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

NOVEMBER 30.—**Workington.**—SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. For further particulars see advertisement in our issue of October 30.

DECEMBER 1.—**Bangor.**—LAYING-OUT A PARK.—The U.D.C. of Bangor (Co. Down) invite a scheme for the laying-out of a public park, 20 acres in extent, on ground acquired by them within their District. A premium of 30*l.*, to include all expenses, will be paid to the person whose scheme may be selected. Mr. J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far. Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 8.—**Bailieborough.**—COTTAGES.—The R.D.C. invite tenders for the erection of single cottages throughout the district, in accordance with the plan, etc., prepared by Mr. Patrick O'Reilly, C.E., Bruise Hill, Virginia. Tender forms, etc., can be had on application to Mr. Hugh Clarke, Clerk of Council, Poor Law Office, Bailieborough.

NOVEMBER 8.—**Datchet.**—CLOSETS.—The Managers of the Datchet Schools invite tenders for the erection of a block of earth closets, etc., at the Schools, Datchet Green. Plans, etc., can be seen at the Working Men's Club, Datchet.

NOVEMBER 8.—**Gwaelodygarth.**—REPAIRING.—The Trustees of Baptist Church, Gwaelodygarth, near Taff's Well, invite tenders for repairing and painting their chapel. Specification to be seen at address of Secretary, Baptist Church, Brynheulog, Gwaelodygarth, near Cardiff.

NOVEMBER 8.—**Holmfirth.**—TWO SEMI-DETACHED VILLAS.—Erection of villas. Plans may be seen, and quantities obtained, at offices of Messrs. Yates & White, architects, 32, John William-street, Huddersfield.

NOVEMBER 8.—**Linthwaite.**—HOUSES.—Works (masons' excepted) required in the erection of four dwelling-houses, Jovil, Linthwaite. Plans may be seen, and quantities obtained, from Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

NOVEMBER 8.—**Middelton.**—ESTATE OFFICE, ETC.—The Wharfedale (Ilkley) Estate Company, Ltd., invite tenders for the various works required in connexion with the erection of the estate office and agent's house at Middelton, Ilkley. Names to Mr. A. Taylor, Secretary, St. James's-buildings, The Grove, Ilkley.

NOVEMBER 8.—**Snaith, near Goole.**—ADDITIONS.—For additions to the Snaith Clog Factory. Plans, etc., may be seen at the offices of Mr. H. B. Thorp, architect and surveyor, Goole.

NOVEMBER 9.—**Aberdare.**—SCHOOL, ETC.—The U.D.C. of Aberdare Education Committee invite tenders for the erection of a new infants' school and altering present mixed and infants' schools at Cwmdare, near Aberdare. Plans, etc., may be inspected, and a copy of bills of quantities obtained, at the Education Offices, or at the office of the Architect (Mr. T. Roderick, Clifton-street, Aberdare), upon payment to Mr. John Morris, Director, Education Offices, Aberdare, of the sum of 2*l.* 2s.

NOVEMBER 9.—**Bangor.**—ALTERATIONS, ETC., TO DRILL HALL.—Alterations and repairs required, Drill Hall, Garth-road, Bangor. Copies of specification may be obtained on application, Headquarter Office, R.G.A., Bangor, or from the Secretary, Territorial Association, Barracks, Carnarvon.

NOVEMBER 9.—**Bridlington.**—BUILDINGS.—The different trades required in pulling down old and erecting new buildings on premises in King-street and Chapel-street for Mr F. E. Harrison. Plans, etc., can be seen at office of Mr. Joseph Shepherdson, architect, 3, Quay-road, Bridlington.

NOVEMBER 9.—**Darlington.**—GIRLS' SECONDARY SCHOOL.—The C.C. of Durham invite tenders for the erection of a girls' secondary school at Darlington. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. W. Rushworth, Shire Hall, Durham.

NOVEMBER 9.—**Great Yarmouth.**—PULLING DOWN AND REMOVING.—Pulling down and removing premises in the Market Place and Row 54; also for the shop front, revolving shutters, and about 750 ft. super. of plate glass. Particulars to be obtained at office of Mr. Arthur S. Hewitt, A.R.I.B.A., architect, Bank-chambers, Great Yarmouth.

NOVEMBER 9.—**Matlock Bath.**—PUMP-ROOM, ETC.—Matlock Bath and Scarthin Nick U.D.C. invite tenders for the erection of a pump-room and pavilion at Matlock Bath. A deposit of 3*l.* will be required for copies of the quantities. Names (but not the deposit money) to Mr. Fred. W. Gill, solicitor, Clerk to the Council, Hunter's-chambers, Matlock.

NOVEMBER 10.—**Ballydulea.**—REPAIRS.—Cork Port Sanitary Authority invite tenders for repairs and painting to be executed at the caretaker's lodge, Intercepting Hospital, Ballydulea, Queenstown. Specification, etc., can be obtained of Mr. M. O'Keeffe, Clerk, Public Health Department, City Hall, Cork.

NOVEMBER 10.—**Eskdale (Cumberland).**—COTTAGES.—For building a block of three cottages to be erected on the "Gatehouse" Estate, Eskdale. Quantities may be obtained, and plans, etc., seen, on appointment being made with Mr. Pallister, Long Rigg, Eskdale. A deposit of 1*l.* 1s. required.

NOVEMBER 10.—**Honley.**—LAUNDRY, ETC.—Erection of a laundry, boiler-house, and long chimney, at Honley. Plans may be seen, and bills of quantities obtained, at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

NOVEMBER 10.—**Llangan.**—SCHOOL.—Glamorgan C.C. invite tenders for the erection of a new mixed school at Llangan, near Cowbridge. Plans, etc., may be seen, and bill of quantities obtained, at the Cowbridge Police-station. The plans, etc., may be also seen or obtained at offices of Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

NOVEMBER 12.—**Bristol.**—MORTUARY.—Erection of a mortuary at the Eastville Workhouse, in accordance with drawings, etc., which will be deposited for inspection at the Workhouse. Form can be obtained at office of Mr. J. J. Simpson, Clerk to the Guardians, St. Peter's Hospital, Bristol.

NOVEMBER 12.—**Radyr.**—VILLAS.—Erection of two semi-detached villas at Radyr. Plans, etc., can be seen at the offices of Messrs. T. E. Richards & Kaye, architects.

NOVEMBER 13.—**Glasgow.**—ROYAL INFIRMARY RECONSTRUCTION: G BLOCK (PATHOLOGICAL).—The Managers invite tenders for the works. Drawings may be seen at the office of the Architect, Mr. James Miller, A.R.S.A., 15, Blythswood-square. Copies of the schedules may be obtained from Mr. Peter Rintoul, Secretary, 212, West George-street, Glasgow, on payment of 1*l.* 1s. each (four contracts).

NOVEMBER 13.—**Lochgelly.**—SCHOOL WORKS.—The School Board of Lochgelly invite estimates for the brick and stone, joiner, plumber, gasfitter, ventilating, slater, plaster, smith, and painter work of extension to (1) Lumphinnans School; (2) Glencraig School. Schedules of quantities may be had, and plans seen, at the office of (1) Mr. Gilbert T. Scott, architect, 5, Church-street, Inverkeithing, for Lumphinnans School; and (2) Mr G. Charles Campbell, architect, Methil, for Glencraig School.

NOVEMBER 13.—**Walkden.**—SCHOOLS.—The Worsley U.D.C. invite tenders for the erection of a Technical School at Walkden. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Harry Littler, 16, Ribbledale-place, Preston, by payment of a deposit of 3*l.*

NOVEMBER 13.—**Winchester.**—CASEMENTS.—The T.C. invite tenders for supplying and fixing wrought-iron casements with lead lights to Sessions Hall windows, Guildhall. Specification, etc., can be seen, and particulars obtained, on application at the City Surveyor's offices.

NOVEMBER 13.—**Winchester.**—SCHOOL BOARDING HOUSE.—New high school boarding house at Winchester. Send names to the architects, Messrs. Colson & Nisbett, 45, Jewry-street, Winchester, where the plans and specification may be seen and quantities obtained.

NOVEMBER 15.—**Bury.**—VAULTS.—The Corporation of Bury invite tenders for the building of vaults (single and double) required at the cemetery during the next twelve months. Drawings may be seen, and specifications, etc., obtained, upon application at the Borough Engineer's office, Bank-street, Bury.

NOVEMBER 15.—**Carrickmore, etc.**—HOUSES.—The Directors of Great Northern Railway Company (Ireland) invite tenders for stationmasters' houses at Carrickmore, Keady, and Creaghanroe, and also for a cottage about three-quarters of a mile from Castlewellan Station. Plans and specifications at the office of Mr. W. H. Mills, Engineer-in-Chief, Amiens-street Terminus, Dublin, or copies of them at the office of the District Engineer, Belfast, and can obtain at the said offices forms of tender on payment of 1s. each (not returnable).

* NOVEMBER 15.—**Merton.**—COTTAGES.—Erection of a block of five cottages and a block of eight cottages in Mill-road, Merton Abbey Estate High-street, Merton S.W. See advertisement in this issue for further particulars.

NOVEMBER 16.—**Acton.**—HOSPITAL WORKS.—Acton U.D.C. invite tenders for (*a*) the erection of a thirty-bed ward pavilion at the Isolation Hospital, Wales Farm-road, Acton, W.; (*b*) making-up and paving passages, Valetta-road, Acton, W. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application to Mr. D. J. Ebbetts, surveyor, 57, High-street, Acton.

NOVEMBER 16.—**Garndiffaith, near Pontypool.**—EXTENSIONS, ETC.—For extensions etc., at the Bethel Primitive Methodist Chapel, Garndiffaith, for the Trustees. Plans, etc., may be seen at the offices of Mr. A. Gordon Babbidge, architect and surveyor, Clarence-chambers, Pontypool.

NOVEMBER 16.—**Haswell, etc.**—SCHOOLS.—The C.C. of Durham invite tenders for new Council School at Haswell, and removal of iron school from Harlow Green to Easington Colliery. Plans, etc., may be seen, and bills of quantities obtained, as follows:—(1) For Haswell School (810 scholars), at the office of Mr. W. Rushworth, Shire Hall, Durham; (2) for removal of iron school at Harlow Green to Easington Colliery (plans, specification, and general conditions only), at the office of Mr. F. E. Coates, Shire Hall, Durham.

NOVEMBER 16.—**Leeds.**—ALTERATIONS, ETC.—The Improvements Committee invite tenders for the work required in the alterations, etc., of the Queen's Lodging-house, East-street, Leeds, and in the alterations of houses into houses and shops, Beeston-road, Leeds. Specification, etc., can be seen, and bill of quantities obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

NOVEMBER 16.—**Rochdale.**—PLUMBING WORK.—The Cemetery Committee invite tenders for the plumbing work required in the provision of six water-closets at the Cemetery. Specification, etc., may be obtained at the office of the Borough Surveyor.

* NOVEMBER 17.—**Notting Hill, W.**—POST-OFFICE EXTENSION.—The Commissioners of H.M. Works, etc., invite tenders for extension of the branch post-office and sorting office, Notting Hill. See advertisement in this issue for further particulars.

NOVEMBER 18.—**Blackburn.**—COUNCIL SCHOOL, BANGOR-STREET.—The Corporation of Blackburn invite tenders for the erection of the new Council school, Bangor-street, Blackburn. Forms of tender and bills of quantities may be obtained from the architects, Messrs. Cooper & Slater, 13, Richmond-terrace, Blackburn, on deposit of 1*l.* 1s.

NOVEMBER 19.—**Huddersfield.**—SCHOOLROOM.—The Trustees of Almondbury Zion Chapel invite tenders for the various works required in the erection of a schoolroom, etc. Quantities may be obtained, and drawings, etc., inspected, at office of Mr. Norman Culley, A.R.I.B.A., architect, 13, John William-street, Huddersfield.

NOVEMBER 19.—**Laughton-en-le-Morthen.**—SCHOOL.—The West Riding Education Committee invite whole or separate tenders for Laughton-en-le-Morthen new school, Wickersley new school. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

* NOVEMBER 19.—**Northfleet.**—SCHOOL.—The Kent Education Committee invite tenders for erection of a new department at Dover-road Council School, Northfleet. See advertisement in this issue for further particulars.

* NOVEMBER 20.—**Sussex.**—SCHOOLS, ETC.—The East Sussex Education Committee invite tenders for (1) new school, etc., at Willingdon; (2) new school, etc.,

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

at Heathfield; (3) alterations to school at Newhaven. See advertisement in this issue for further particulars.

NOVEMBER 22.—**Pontymister.**—COTTAGES.—For erection of thirty-four houses at Pontymister, for the Risca U.D.C. Plans may be seen, and a copy of the specifications obtained, upon application to Mr. A. J. Dardis, Council Offices, Risca, Mon., Engineer to the Council, on deposit of 2*l.* 2s.

✱ NOVEMBER 23.—**London.**—ROYAL COURTS OF JUSTICE EXTENSION.—The Commissioners of H.M. Works, etc., invite tenders for extension of the Royal Courts of Justice. See advertisement in this issue for further particulars.

NOVEMBER 23.—**Plymouth.**—SHELTERS.—The Corporation invite tenders for the supply, delivery, and fixing of No. 4 ornamental shelters in the Pleasure Grounds. Particulars, etc., may be obtained at office of Mr. James Paton, Borough Engineer and Surveyor, Municipal Offices, Plymouth.

✱ NOVEMBER 24.—**Homerton, N.E.**—BOUNDARY WALL.—The Guardians of the Hackney Union invite tenders for demolition of cottages, Crozier-terrace, High-street, Homerton, N.E., and the erection of boundary wall. See advertisement in this issue for further particulars.

✱ NOVEMBER 24.—**Mogerhanger.**—SCHOOL.—The Bedfordshire C.C. invite tenders for new Council school at Mogerhanger. See advertisement in this issue for further particulrs.

NOVEMBER 24.—**Tynycae, Penygraig.**—HOUSES.—Erection of twenty-eight houses at Tynycae, Penygraig, Rhondda Valley, for Messrs. The Tynycae Building Club. Names and addresses to the architects, Messrs. W. M. Lewis & T. Naunton Morgan, Tonypandy and Pontypridd.

NOVEMBER 25.—**Rainhill.**—COTTAGES.—The Committee of Visitors of Lancashire Asylums Board, County Asylum, Rainhill, invite tenders for the erection of six cottages at this Asylum. The drawings may be inspected, and all information obtained, at the Engineer's office. Bills of quantities can be obtained on application to Mr. Jas. Gornall, Clerk and Steward, Clerk's office, Rainhill Asylum, on payment of 2*l.* 2s. (in cash) deposit.

✱ DECEMBER 8.—**Middlesbrough.**—LIBRARY.—The Middlesbrough B.C. invite tenders for new Public Library in Dunning-street, Middlesbrough. See advertisement in this issue for further particulars.

NO DATE.—**Belfast.**—PREMISES.—Building premises, Springfield-road. Apply to Mr. A. Metcalf, 269, Springfield-road. Plans, etc., can be seen at the office of Messrs. J. Fraser & Son, C.E., architects, 117, Victoria-street.

NO DATE.—**Bridlington.**—VILLAS.—Erection and completion of two villas in Cardigan-road, Bridlington, for Mrs. Hall. Bills of quantities can be obtained from the architect, Mr. Henry Phillips, S.E., architect and civil engineer, Alexandra-buildings, Scale-lane, Hull, on deposit of 1*l.*

✱ NO DATE.—**Cheshire.**—ADDITIONS TO COUNTRY HOUSE.—Tenders are invited for additions to a country house. See advertisement in this issue for further particulars.

NO DATE.—**Cloughbawn.**—ROOF.—Reconstruction of the roof of the Catholic Church, Cloughbawn, Clonroche, Co. Wexford, for the Very Rev. Father Cloney, P.P. Plans, etc., prepared by Messrs. Ashlin & Coleman, architects, 7, Dawson-street, Dublin. Bills of quantities may be had on application to the surveyors, Messrs. Morris & Co., 68, Harcourt-street, Dublin.

NO DATE.—**Featherstone.**—HOUSE AND SHOP.—Works required in the erection of a house and shop at Featherstone. Names to Mr. J. Day, architect, 84, King-street, Wakefield.

NO DATE.—**Netherlands.**—TINPLATE MILL.—Tenders are invited for the erection of a tinplate mill in the Netherlands, for which Siemen's steel plant is provided. Further particulars from "Steel-works," Messrs. Samuel Griffiths & Co., Ltd., 44, Fleet-street, E.C.

NO DATE.—**Newton Ferrers.**—READING-ROOM.—Erection of a reading-room at Newton Ferrers. Names to Messrs. Body & Son, surveyors, 12, Princess-square, Plymouth.

NO DATE.—**Strathpeffer.**—HOTEL.—The Highland Railway Company invite tenders for the mason and brick, iron, carpenter, plumber, asphalt, slater, plasterer, painter and glazier, and other works of hotel proposed to be erected at Strathpeffer. Names to Messrs. Cameron & Burnett, architects and ordained surveyors, Academy-buildings, Inverness.

NO DATE.—**Tottenham.**—SCHOOL.—Tottenham Education Committee invite tenders for the erection of a permanent school to accommodate 1,420 children, on the Crowland-road site. Applications for quantities to be made to the architect, Mr. G. E. T. Laurence, A.R.I.B.A., 22, Buckingham-street, Adelphi, W.C., after which date plans, etc., may be seen at his office. The sum of 2*l.* 2s. will be charged for the quantities.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 9.—**London.**—ENGINES.—The South Indian Railway Company, Ltd., invite tenders for the supply of six locomotive engines and tenders (broad gauge). Specifications and forms of tender may be obtained at the company's offices. A charge, which will not be returned, will be made of 2*l.* for each copy of the specification. Mr. V. E. de Broe, M.Inst.C.E., Secretary, Company's Offices, 91, York-street, Westminster, S.W.

NOVEMBER 9.—**London.**—RAILS, ETC.—The Directors of Rohilkund and Kumaon Railway Company, Ltd., invite tenders for the supply and delivery of 7,034 tons of 41½ lb. F.F. rails, with 166 tons of fish-plates for same, as per specification to be seen at the Company's Offices. For each specification a fee of 1*l.* will be charged, which cannot, under any circumstances, be returned. Mr. Alexander Izat, Managing Director, 237, Gresham House, Old Broad-street, London, E.C.

NOVEMBER 9.—**Penzance.**—HOT-WATER APPARATUS.—The Guardians invite tenders for carrying out the work in connexion with the proposed new hot-water apparatus at the Workhouse Infirmary at Madron. A specification of the work to be carried out may be seen on application to the Master of the Workhouse, and further particulars may be obtained on application to Mr. Henry Maddern, architect, Penzance.

NOVEMBER 11.—**Ogmore.**—STEEL BRIDGE.—Ogmore and Garw U.D.C. invite tenders for the supplying and delivering at Ogmore Vale G.W.R. Station of rolled steel joists and plates, etc., of British manufacture. All particulars may be obtained from Mr. H. Dawkin Williams, Surveyor, on making personal application at the Council Offices, Brynmenyn (Glam.).

NOVEMBER 12.—**Bristol.**—FERRO-CONCRETE CRANE-ROAD.—The Bristol Docks Committee invite tenders for the construction and maintenance for twelve months after completion of a crane-road for a 25-ton crane at the Dry Dock, Avonmouth. Copies of the specification, etc., can be obtained from Mr. W. W. Squire, Engineer, Engineer's office, Cumberland-road, Bristol, on production of a receipt showing that a deposit of 3*l.* has been paid to the Secretary of the Docks Committee, 19, Queen-square, Bristol, to whom all cheques must be made payable.

NOVEMBER 17.—**Anstey.**—SINKING WELLS.—For sinking a well (21 ft. in depth) and fixing an iron pump at Anstey, Herts, for the Buntingford R.D.C. Specifications, etc., can be obtained upon application to Mr. Ernest G. Thody, surveyor, Buntingford.

NOVEMBER 17.—**Copenhagen.**—RAILS, ETC.—The Danish State Railways are prepared to receive tenders for the supply of about 26,000 tons of rails and fastenings. Specifications and drawings to be obtained, on payment of the sum of 5 sh. (which will not be returned), on application to Banekontoret, Gl. Kongevej 1 E. Copenhagen B.

NOVEMBER 19.—**Cleator Moor.**—PLANT.—For duplicating the exhausting plant at their Gasworks on a new site, for the U.D.C. A copy of drawings and specifications may be obtained from Mr. Henry Rothery, Clerk, Public Offices, Cleator Moor, on payment of 1*l.* 1s.

NOVEMBER 20.—**Cork.**—STEAM ROLLING PLANT.—The Cork C.C. invite tenders from manufacturers of steam rolling plant. Particulars, etc., can be obtained on application to Mr. E. Callanan, Secretary, Cork C.C., Court House, Cork.

NOVEMBER 20.—**Manchester.**—HYDRAULIC POWER SUPPLY.—Manchester Corporation Waterworks Committee invite tenders for supplying and fixing at their Whitworth-street West Pumping Station one vertical steam-driven cross compound air compressor, with surface condensor, coolers, air receiver, pipes, valves, etc. Specification, etc., may be obtained on application to the Secretary, Waterworks Offices, Town Hall, Manchester, on payment of 2*l.* 2s.

NOVEMBER 23.—**London.**—GIRDERS.—Great Western Railway Directors invite tenders for the supply of about 200 tons of steel bridge girders and other iron and steel work of British manufacture. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer, Paddington Station, London.

NOVEMBER 24.—**Inverness.**—TRAMWAY SCHEME.—The Inverness Town Council invite tenders (1) for the supplying and laying of about 1,667 yds. of permanent way. Plans may be seen, and specifications, etc., obtained, at the office of Mr. T. H. Scott, C.E., Burgh Surveyor, on payment of the sum of 1*l.* 1s. No. 2, mason and carpenter work. Plans may be seen, and specifications, etc. obtained, at the office of the Burgh Surveyor.

NO DATE.—**Blaengarw.**—DEEPENING SHAFTS.—The International Coal Company, Ltd., invite tenders for deepening of downcast and upcast shafts—about 150-180 yds. Further particulars on application to Mr. Daniel Williams, International Colliery Office, Blaengarw (Glam.).

NO DATE.—**Newbiggin.**—EXCAVATING.—Excavating and tipping for a tramway cutting and embankment. Particulars may be obtained from the Newbiggin Colliery Company, Ltd., Newbiggin-by-the-Sea.

MISCELLANEOUS.

NOVEMBER 8.—**Oldcastle.**—PUMP.—The Board of Guardians invite tenders for putting the Workhouse pump in proper working order in accordance with the specification of Mr. Michael Grace, jun., the Board's Engineer. Specification can be seen at the Board-room, Oldcastle Workhouse, during office hours.

NOVEMBER 9.—**Bridgwater.**—TRESTLES, ETC.—For trestles and bearers and boarding in connexion with the reconstructions and enlargement of the extension to the platform in the Town Hall, for the Town Council. The plans, etc., may now be seen, and forms of tender and envelopes obtained, at the offices of the Borough Surveyor, Municipal Buildings, High-street.

NOVEMBER 10.—**Wood Green.**—FENCING.—The U.D.C. of Wood Green invite tenders for the supply of a quantity of wrought-iron unclimbable fencing. Forms of tender and specification may be obtained on application to the Surveyor at the Town Hall, Wood Green, upon payment to Mr. Wm. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1*l.* 1s.

NOVEMBER 13.—**Berkshire.**—FENCING.—The Small Holdings and Allotments Committee invite tenders for (1) cartage of fencing; (2) erection of fencing (to be provided) at Charney Bassett Coldharbour, and Eastfield Farms. Full particulars, etc., may be obtained from the County Land Steward's Office, Assize Courts, Reading.

NOVEMBER 15.—**Ely.**—STEAM FIRE-ENGINE.—The Ely U.D.C. invite tenders for the supply of a double-cylinder vertical steam fire-engine. Also on a separate tender, 1,500 ft. of 3-in. canvas hose, with Morris instantaneous couplings. No form of tender is issued by the Council. Mr. Geo. Martin Hall, Solicitor and Clerk to the Council, Market-square, Ely.

NOVEMBER 15.—**Finchley.**—IRON FENCING.—The Finchley U.D.C. invite tenders for the supply, delivery, and erection in the Regent's Park-road of about 780 yds. run of 4 ft. 6 in. unclimbable wrought-iron fencing. Drawing, etc., may be seen, and form of tender obtained, on application to the Council's Engineer and Surveyor, Council Offices, Church End, Finchley, N.

NO DATE.—**Burslem.**—ROPEWAY.—The Corporation invite quotations for the supply and fixing of an aerial ropeway for the removal of clinker refuse from their destructor. Further particulars can be obtained from Mr. F. Bettany, Borough Engineer and Surveyor.

PAINTING, etc.

NOVEMBER 8.—**Edinburgh.**—PAINTING.—The Magistrates and Council invite tenders for painter work at men's swimming pond, Infirmary-street Baths, according to specification, which may be seen at the office of Mr. James A. Williamson, A.R.I.B.A., City-chambers, from whom also schedules of quantities, etc., may be obtained on personal application.

NOVEMBER 12.—**Banstead.**—PAINTING.—The Visiting Committee of the Cuddington Hospital invite tenders for carrying out certain painting and other works at the Hospital, situate near Banstead Railway Station. Copies of the specification and forms of tender can be obtained, and draft conditions of contract can be seen, on application to Mr. W. O. Reader, Clerk, "Gynsdale," Epsom.

NOVEMBER 15.—**Halifax.**—PAINTING, ETC.—The Education Committee of the Halifax Corporation invite tenders for painting and colouring Akroyd-place and Parkinson-lane Council Schools, and for colouring the dining-rooms at Queen's-road and Sunnyside Council Schools. Plans, etc, may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 1*l.*

NOVEMBER 16.—**Hastings.**—PAINTING, ETC.—The Education Committee invite tenders (from local tradesmen) for painting, repairs, etc., at several of the schools during the Christmas holidays; also for alterations to the offices, etc., at Mount Pleasant School. Specifications may be obtained at the offices of the Borough Engineer, Town Hall, Hastings.

NOVEMBER 18.—**West Derby.**—PAINTING MILL-ROAD INFIRMARY.—The Guardians invite tenders for painting at the lower hospitals of the Infirmary. Specification to be seen at the office of the Steward on the premises.

NOVEMBER 18.—**West Derby.**—POINTING ETC., MILL-ROAD INFIRMARY.—The Guardians invite tenders for pointing, etc., the buildings of the Administrative Block and the Nurses' Home at the Infirmary. Specification may be seen at the office of the Steward, on the premises.

NO DATE.—**Farnborough.**—PAINTING, ETC.—Paint- and redecorating interior of the South Farnborough Working Men's Club, York-road. Particulars may be obtained from the Secretary.

ROADS, SANITARY, AND WATER WORKS.

NOVEMBER 8.—**Nottingham.**—DRAINAGE, ETC., WORKS.—For 700 yds. of 6-in. and 4-in. cast-iron pipes; provision of fittings, and plumbing work, building and altering inspection chambers, etc., for providing a system of cast-iron pipe drainage at the Council's Sanatorium, situate on the Hucknall-road, in the City of Nottingham. Plans may be seen by appointment, and copies of the conditions, etc., may be obtained from Mr. S. Maylan, Engineer and Surveyor, Public Offices, Basford, Nottingham, on deposit of 2*l.* 2s.

NOVEMBER 9.—**Foleshill.**—BEDWORTH AND FOLESHILL SEWERAGE.—The R.D.C. of Foleshill invite tenders for the sewering of Smorrall-lane, Spitalfields; Buckler's and Spriggs Yard, Bedworth; Rowley's Green, Foleshill; and a portion of the main road, Longford. Plans, etc., may be seen, and all particulars obtained, on application to Mr. A. E. Newey, Surveyor, Council Offices, Foleshill.

NOVEMBER 9.—**Maldens.**—ROAD WORKS.—The Maldens and Coombe U.D.C. invite tenders for:—Contract No. 1, kerbing, channelling, and fixing gullies in Elm-road, between Kingston-road and Chestnut-grove; Contract No. 2, paving with artificial stone slabs the footways where required between the above-named points. The drawings, etc., may be seen, and specifications, etc., obtained, on application to the Engineer and Surveyor, Mr. Reginald H. Jeffes, A.M.Inst.C.E., at the Council Offices, New Malden, upon payment of a deposit of 3*l.* 3s. for contract No. 1 and 2*l.* 2s. for contract No. 2, by cheque, payable to the Council.

NOVEMBER 9.—**Salford.**—PAVING, ETC.—Tenders are invited for paving and completing certain streets. The plans may be seen, and forms of tender, etc., obtained, at the Borough Engineer's office, Town Hall, Salford.

NOVEMBER 10.—**Birkenhead.**—STREET MAKING.—For making and completing of Waterford-road (in part), Heather-brow (in part), Hillbre-street, and Lynas-street, for the Corporation. Plans, etc., may be seen, and form of tender, etc., obtained, at the office of Mr. Charles Brownridge, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Birkenhead, upon deposit of 10s.

NOVEMBER 10.—**Birmingham.**—SOMERVILLE-ROAD STORM-WATER CULVERT.—The Public Works Committee invite tenders for the construction of about 650 yds. of brick and concrete storm-water culvert, together with river outlet, overflow chamber, manholes, etc. Plans, etc., may be seen, and quantities and forms of tender obtained, on deposit of the sum of 2*l.* Mr. Henry E. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, The Council House, Birmingham.

NOVEMBER 10.—**Eastwood, Greasley, and Brinsley.**—SEWERAGE, CONTRACT No. 2.—The R.D.C. of Basford invite tenders for alterations and extensions at the Newthorpe Outfall Works. Plans, etc., can be seen at the office of the engineers, Messrs. Elliott & Brown, A.M.Inst.C.E., Burton-buildings, Parliament-street, Nottingham, and copies of the bills of quantities, etc., obtained, on deposit of 2*l.* 2s.

NOVEMBER 10.—**Enfield.**—MAKING-UP.—The U.D.C. of Enfield invite tenders for making-up the private street known as Down's-road, Enfield. Plans, etc.,

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

can be seen, forms of tender, etc., obtained, on application to Mr. Richard Collins, the Council's Surveyor, at Public Offices, Enfield, Middlesex.

NOVEMBER 10.—**Harwich.**—SEWER WORKS.—Taking up part of the pipe sewer recently laid at Upper Dovercourt and relaying same; also for the reconstruction of eight manholes and other works. Plans, etc., to be seen at office of Mr. Henry Ditcham, Borough Surveyor.

NOVEMBER 10.—**Manchester.**—ROAD.—The Improvement and Buildings Committee invite tenders for the completion of the construction of a new road at Harpurhey. Plans may be seen, and specification, etc., obtained, on application at the City Surveyor's office, Town Hall, Manchester, on payment to the City Treasurer of 2*l.* 2s. All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

✱ NOVEMBER 11.—**Putney, S.W.**—ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving of Langside-avenue, Putney. See advertisement in this issue for further particulars.

✱ NOVEMBER 11.—**Streatham, S.W.**—ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving part of Wavertree-road, Streatham. See advertisement in this issue for further particulars.

✱ NOVEMBER 11.—**Streatham, S.W.**—ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving Wyatt Park-road, Streatham. See advertisement in this issue for further particulars.

NOVEMBER 12.—**Wimbledon.**—MAKING-UP.—The Corporation of Wimbledon invite tenders for the making-up of the following roads, viz.:—Murray-road, 673 yds. in length; Farquhar-road, 142 yds. in length. Plans, etc., may be inspected, and forms of tender obtained, at the office of the Borough Surveyor, Town Hall.

✱ NOVEMBER 15.—**Beckenham.**—MAKING-UP STREETS.—The Beckenham U.D.C. invite tenders for making up various private streets in their district. See advertisement in this issue for further particulars.

NOVEMBER 15.—**Hale.**—MAKING-UP.—Hale U.D.C. invite tenders for the making-up of the carriageways round the above improvement in Hale. Specification, etc., can be obtained from the Surveyor, Council Offices, Ashley-road, Hale.

✱ NOVEMBER 15.—**Kensington.**—MAKING-UP ROADWAY.—The Kensington B.C. invite tenders for making-up the roadway extension of Oxford-gardens. See advertisement in this issue for further particulars.

NOVEMBER 15.—**Leeds.**—PAVING, ETC.—The Highways Committee invite tenders for the paving and flagging of private streets. Drawings may be seen at the City Engineer's office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

✱ NOVEMBER 15.—**Muswell Hill, N.**—ROAD-MAKING.—Tenders are invited for constructing new road at Muswell Hill, N. See advertisement in this issue for further particulars.

NOVEMBER 16.—**Croydon.**—PRIVATE STREET WORKS.—Repair of Addison-place, within the Borough. Plans, etc., may be seen, and forms of tender obtained, on application at the Borough Road Surveyor's office, Town Hall, Croydon.

NOVEMBER 16.—**Evesham.**—LEVELLING.—The Governors of Prince Henry's Grammar School, Evesham, invite tenders for the work of excavating, levelling, and forming the site of the proposed school playground at the schools now in course of building on Greenhill, Evesham. Specifications, etc., can be obtained of the Governors' Surveyor, Mr. R. Webb, 4, North-terrace, Evesham, and plans can be seen at his office.

NOVEMBER 16.—**Lewisham.**—KERBING, ARTIFICIAL STONE PAVING, METALLING, AND CHANNELLING WORKS.—The plans, etc., may be seen, and forms of tender obtained, at the Town Hall, Catford (Surveyor's Department). Copies of the specifications may also be had on payment of the sum of 5s. in each case, which will not be returned.

NOVEMBER 16.—**Harborough, near Leicester.**—FOREST-LANE SEWERS.—Blaby R.D.C. invite tenders for the construction of about 1,000 lin. yds. of 9-in. and 350 lin. yds. of 6-in. stoneware pipe sewers. Conditions of contract, etc., can be obtained from the engineer, Mr. Jas. Turner, at his office, South Wigston, on payment of a deposit of 1*l.* 1s.

NOVEMBER 24.—**Aldeburgh.**—ALTERATIONS TO EXISTING WATER TOWER: NEW STEEL TANK, ETC.—The Corporation of Aldeburgh invite tenders for the removal of the upper portion of the existing brick water tower at Aldeburgh, and the construction of a new steel tank, and rebuilding the walls of the tower to a greater height. The drawings may be seen, and copies of the specification, etc., obtained, at the office of the Borough Surveyor, Mr. J. C. Gordon, Aldeburgh, or at the offices of the engineers, Messrs. J. Mansergh & Sons, 5, Victoria-street, Westminster, on the deposit of 2*l.* 2s.

NOVEMBER 25.—**Romford.**—PRIVATE STREET WORKS.—The Romford U.D.C. invite tenders for the work of making-up of King Edward, Brooklands, Marshalls, Medora, and Drummond roads. The plans may be seen, and specifications, etc., obtained, on application to Mr. Herbert T. Ridge, at the Council Offices, Market-place, Romford, on deposit of 5*l.*

NOVEMBER 25.—**Sunderland.**—TRAMWAY TRACK.—The Corporation of Sunderland invite tenders for (1) foundations and track (about 853 lin. yds.); (2) paving work. The specification, etc., can be obtained on application to the joint engineers, Mr. John W. Moncur, A.M.Inst.C.E., Borough Engineer, Town Hall, and Mr. Archibald R. Dayson, M.Inst.E.E., Tramways General Manager and Engineer, Tramways Offices, on payment of a deposit of 1*l.* 1s. for each specification.

NO DATE.—**Sidmouth, Devon.**—ROAD WORKS.—Construction and formation of a continuation of Hillside-road, on the Salcombe Hill Estate, near Sidmouth. Names and addresses forthwith to Messrs. Dymond & Parsons, land agents and surveyors, 21, Southernhay West, Exeter.

STONES, MATERIAL, AND STORES.

NOVEMBER 8.—**Romford.**—GRANITE SETTS.—The Guardians invite tenders for the supply of 20 tons of second-hand granite cube setts of 4, 5, or 6 in., to be delivered at the Workhouse, Romford. Mr. William Smith, Clerk, 13, North-street, Romford.

NOVEMBER 9.—**Watford.**—GRANITE.—The Watford U.D.C. invite tenders for 2,850 tons of granite. Also a tender for the supply of 1-in. patching granite and for the supply of ½-in. granite chippings. No official tender form will be issued. Mr. H. Morten Turner, Clerk, Council Offices, 14, High-street, Watford.

NOVEMBER 10.—**Brighton.**—PIPES.—The B.C. invite tenders for the supply of about 150 tons of 4-in. and 6-in. cast-iron pipes, etc., for the Corporation Waterworks. The specification and form of tender may be obtained on application at office of Mr. Hugo Talbot, Town Clerk, Town Hall, Brighton.

NOVEMBER 10.—**Chelmsford.**—GUERNSEY GRANITE AND TEAM LABOUR.—The T.C. of Chelmsford invite tenders for (1) the supply and delivery of about 1,000 tons of Guernsey granite; (2) providing team labour for watering streets and for other purposes during one year. Forms of tender may be obtained at office of Mr. W. Smith, Town Clerk, Municipal Offices, 16, London-road, Chelmsford, or will be sent by post on receipt of addressed and stamped envelope.

NOVEMBER 12.—**Brighton.**—GRANITE KERB.—The B.C. invite tenders for the supply of dressed granite kerb and channel. The specification, etc., may be obtained on application at the office of the Borough Surveyor at the Town Hall, Brighton.

NOVEMBER 15.—**Bristol.**—MATERIALS.—The Sanitary and Improvement Committee of the Corporation invite tenders for the supply of stores and tools. Specifications, etc., may be obtained at the offices of the City Engineer, 63, Queen-square, on payment of 10s.

NOVEMBER 15.—**Epsom.**—PIPES, ETC.—Epsom U.D.C. invite tenders for the supply and delivery of about 1,400 yds. of 3-in. cast-iron water main in 9-ft. lengths, and about twelve specials. Particulars and forms of tender may be obtained from Mr. William Young, Manager, Waterworks, East-street, Epsom.

NOVEMBER 15.—**Rochdale.**—STORES.—Rochdale Canal Company invite tenders for the supply of stores for the year 1910. Samples can be seen, and approximate quantities ascertained, on application at the Company's Stores, 80, Dale-street, Manchester, between 10 a.m. and 4 p.m. on the 9th and 10th inst.

NOVEMBER 16.—**Dublin.**—STORES.—The Directors of the Midland Great Western Railway of Ireland Company invite tenders for the supply of stores. Forms of tender can be obtained on payment of 6d. each from the Storekeeper General Stores Department, Broadstone Station, Dublin.

NOVEMBER 17.—**Dublin.**—STORES.—The Directors of Great Southern and Western Railway (Ireland) invite tenders for the supply of stores for twelve months. Forms of tender can be obtained on payment of 6d. each from the Company's Storekeeper, at the General Stores, Inchicore, Dublin, to whom inquiries for information should be made direct. Patterns may be inspected at the same place.

NOVEMBER 19.—**Devonport.**—ANNUAL CONTRACTS FOR STORES.—Tenders are invited for the supply of stores and materials. Forms of tender may be obtained at the Borough Surveyor's office, Devonport.

NOVEMBER 20.—**Swansea.**—MATERIALS, ETC.—Swansea Harbour Trustees invite tenders for the supply of iron, castings, chains, timber, oils, ironmongery, ship chandlery, and general stores for twelve months. Forms of tender, etc., may be obtained on application to the Engineer, at the Harbour Office.

NOVEMBER 29.—**Dublin.**—STORES.—The Dublin United Tramways Company (1896), Ltd., invite tenders for the supply of general stores. Forms of tender (price 2s. each), conditions, etc., can be obtained, and patterns seen, at the Secretary's office, 9, Upper Sackville-street, from November 1 to 15

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*ASSIS. VIS. TCHR. OF ARCHITECT. DRAWING & DESIGN	London C.C.	See advertisement in this issue	Nov. 12
*ARCHITECT FOR ELEMENT. AND SECONDARY SCHOOLS	West Riding C.C.	350*l.*	Nov. 25

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	Nov. 10
*FITTINGS OF 11 TO 23, DELAHAY-STREET, S.W.—On the Premises	Horne & Co.	Nov. 11

Patents.

APPLICATIONS PUBLISHED.*

21,121 of 1908.—Richard Holmes: Apparatus for setting saws.

21,610 of 1908.—Harry Edward Harwood: An adjustable centring for arches and the like.

21,916 of 1908.—Frederick William Goldstone: Door locks.

22,222 of 1908.—Wetschislaw Jachimowitz: Radiators for heating buildings and the like.

22,735 of 1908.—Heinrich Franke: Bricks or blocks for the construction of chimneys, ventilating shafts, and the like, and apparatus for making the same.

24,329 of 1908.—Alfred Roger Grossmith: Excavating machinery and the like.

24,532 of 1908.—James Godfrey Wilson: Fireproof shutters.

25,247 of 1908.—John Harrison: Rivetless casement stay.

26,560 of 1908.—Edgar Allan Custer: Structure-lifting devices for casting moulds.

26,633 of 1908.—Edwin William Manton: Window-blind rollers, shade rollers, and the like.

27,515 of 1908.—George Dyson Sykes: Fasteners for window sashes and the like.

1,569 of 1909.—William Mounsey and Robert Whitehead: Safety sash window catches.

1,801 of 1909.—Thomas Digney: Spring roller blinds.

1,892 of 1909.—John Hope: Locks or latches.

2,178 of 1909.—George Spencer: Locks and latches.

7,227 of 1909.—Julien Clement Cohier: Method of securing the corrugated sheets used for roofing purposes and device for carrying out the same.

7,583 of 1909.—Henry Richmond: Catch device for sash and like windows, applicable for other purposes.

9,381 of 1909.—Herbert John Haddan (Meramic Portland Cement and Materials Company): Waterproof Portland cement and process for making same.

10,002 of 1909.—Karl Brassel: Unloaded concrete ceiling and process for making the same.

10,125 of 1909.—Fred Mott: Draught excluder.

15,105 of 1909.—Albert Nielson: Method of soldering aluminium.

15,636 of 1909.—Oliver Imray (Boesen): Lock for boxes, doors, and the like.

16,712 of 1909.—William Herbert Percy: Tools for twisting and for stretching and tensioning metallic ties and braces.

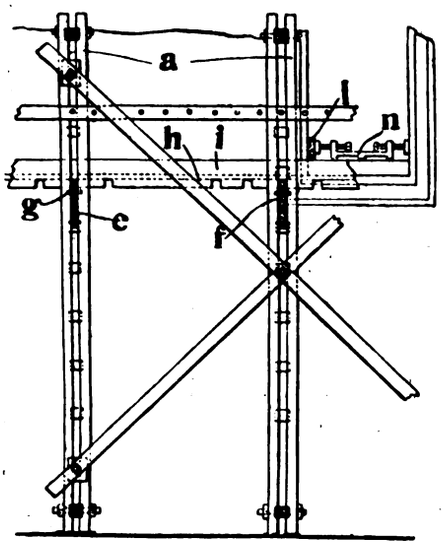
SELECTED PATENTS.

10,192 of 1908.—Desiderius Barcsai and Ludvig Barcsai: Scaffolding. This relates to scaffolding in which two parallel rows of standards are connected both longitudinally and transversely by planks set on edge. Each standard comprises a pair of poles *a* connected

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

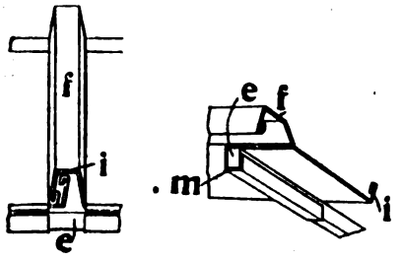
together by rungs and bolts. Transverse planks *e f*, the former of which are notched to engage the rungs, connect opposite standards. Staging boards *h* and ledge boards *i* are supported by the planks *f*, which are prevented from being displaced by pins *g*. The scaffolding is secured to a building by planks *l*, which are



No. 10,192 *of* 1908.

secured at one end to the posts *a* by screw shackles, and at the other end are pressed against the sides of openings in the building by double screw clamps *n*.

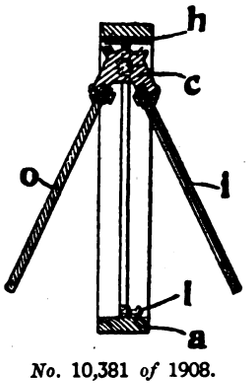
10,272 of 1908.—Leon Stein: Roofs. This relates to sectional sheet-metal roofing, in which wooden supports are completely dispensed with. The sections have one side *i* bent up, and the edge turned over, while the other



No. 10,272 *of* 1908.

side is bent to form an approximately inverted U-shaped portion *f*. The front edge of each sheet is bent back upon itself underneath, and then rebent to form the tubular portion *m* to receive the steel cross-bars *e*, which support the roof.

10,381 of 1908.—Conrad Mauderer: Windows. This relates to a dormer window *i* and shutter *o*, which are carried on a rocking bar *c* mounted to turn on studs on the frame *a*. The rocking bar is provided with ribs, which bear



No. 10,381 *of* 1908.

against the draught bar *h* when the window and shutter respectively are closed. The window and shutter counterbalance each other, and the window is held in the closed position by a turn-button *l*, while the shutter may be held closed by any suitable means.

PUBLISHER'S NOTICES.

Nat. Tel., 6112 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME XCVI. (January to June, 1909) was given as a supplement with the issue of July 10th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE NINETY-SIXTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office*, 4, Catherine Street, Strand, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 21.—By NEWBON, SHEPHARD, & EDWARDS.

Holloway.—Holloway-rd., f.g. rents 60*l.*, reversion in 74 yrs. £1,465
Highbury.—St. Paul's-rd., f.g. rents 60*l.*, reversion in 73 yrs. 1,490
Harringay.—82, Allison-rd., f., e.r. 36*l.* 425

By NORRIS, HADLEY, & Co.

Notting Hill.—5, Lionel-mews, u.t. 60 yrs., g.r. 4*l.* 4s., y.r. 30*l.* 100

By WILLIAM STEVENS.

Bow.—81 and 83, Hewlett-rd., f., w.r. 62*l.* 8s. 465

By STANFORD & BROOM (with RICHARD ELLIS & SON) (at Stowmarket).

Rattlesden, Suffolk.—Holly Bush Farm, 174 a. 0 r. 15 p., f. 2,500
Malting Farm, 28 a. 2 r. 21 p., f. 500
Lower Brook Farm, 14 a. 1 r. 29 p., c. 300

By WALLER & KING (at Southampton).

Southampton.—3, St. Mary's-pl., f., p. 270
17, South-front, y.r. 19*l.* 10s. 370
31 and 32, Standford-st., f., w.r. 44*l.* 4s. 355

October 22.—By REYNOLDS & EASON.

Stratford.—Cruickshank-rd., f.g. rents 33*l.* 10s., reversion in 64 and 67 yrs. 735
Trevelyan-rd., f.g. rents 16*l.* 16s., reversion in 67 yrs. 405
Angel-la., f.g. rents 20*l.* 10s., reversion in 68 yrs. 415
Wood Green.—137, High-rd. (s.), f., y.r. 55*l.* 1,470

By ELLIOTT, TOMBS, & Co.

Hove, Sussex.—Hova Villas, c.g. rents 37*l.* 10s. 750

By A. PREVOST & SON.

Stepney.—30, Joseph-st. (s.), u.t. 56 yrs., f.r. 4*l.*, w.r. 32*l.* 10s. 140
34 and 36, St. Thomas-st., u.t. 42 yrs., g.r. 6*l.* 18s. 6d., w.r. 54*l.* 12s. 190
Bow.—23, Wellington-rd., u.t. 57 yrs., g.r. 3*l.* 10s., w.r. 33*l.* 16s. 120
47 and 49, Lefevre-rd., u.t. 55 yrs., g.r. 7*l.* 5s., w.r. 53*l.* 6s. 320
74, Merchant-st., u.t. 62 yrs., g.r. 4*l.* 5s., w.r. 33*l.* 16s. 240
37, Merchant-st., f., p. 260
St. George's East.—14 and 16, Wicker-st. (s.), u.t. 65 yrs., g.r. 20*l.*, w.r. 106*l.* 12s. 255

October 25.—By G. B. HILLIARD & SON.

Danbury, Essex.—Frettons and 8 a. 3 r. 17 p., f. 2,500
House and shop, 2 r. 27 p., f., y.r. 24*l.* 460
Pear Tree Farm, 105 a. 1 r. 21 p., f. 1,350
Cottage and garden, f. 165

By G. E. LUCK.

Crouch Hill.—35, Ashley-rd., u.t. 65 yrs., g.r. 10*l.*, e.r. 60*l.* 380

By MAY & PHILPOT.

Brixton.—95, 97, and 99, Lyham-rd.; 141, Cornwall-rd., u.t. 39 yrs., g.r. 9*l.*, y. and w.r. 83*l.* 2s. 510
25, Winslade-rd., u.t. 58 yrs., g.r. 7*l.* 10s., p. 300
Herne Hill.—33, Chaucer-rd., u.t. 57 yrs., g.r. 6*l.*, p. 310
Clapham.—49, Kingswood-rd., u.t. 72 yrs., g.r. 6*l.* 10s., p. 375
Brixton.—51, Rattray-rd., u.t. 63 yrs., g.r. 7*l.*, p. 200

By PROTHEROE & MORRIS.

Leytonstone.—Belgrave-rd., nine plots of land, f. £450

By T. B. WESTACOTT.

Pimlico.—Vauxhall Bridge-rd., f.g.r. 7*l.* 10s., reversion in 30 yrs. 225
176 to 182 (even), Vauxhall Bridge-rd. (s.), u.t. 4½ yrs., g.r. 33*l.* 12s., y. and e.r. 236*l.* 10s. 205

By EDWARD WOOD.

Paddington.—101 and 110, Westbourne-park-rd., u.t. 46 and 27 yrs., g.r. 13*l.*, w.r. 136*l.* 10s. 420
Stroud Green.—9, Florence-rd., u.t. 66 yrs., g.r. 7*l.* 7s., y.r. 40*l.* 300
Peckham.—44, Claude-rd., u.t. 41½ yrs., g.r. 5*l.*, y.r. 28*l.* 145

By ERNEST S. BEARD & DANIELL (at Hadleigh).

Hadleigh, Suffolk.—14, 16, and 18, High-st., f. 450
Layham, Suffolk.—Four cottages, f. 360

October 26.—By WM. BRACKETT & SONS.

Wimbledon.—Cowdrey-rd., f.g, rents 10*l.*, reversion in 95 yrs. 195

By HUNTER & HUNTER.

South Kensington.—9, Foulis-ter., u.t. 41 yrs., g.r. 12*l.*, p. 500

By DEBENHAM, TEWSON, RICHARDSON, & Co.

Norwood.—Queen's-rd., f.g. rents 10*l.*, reversion in 61 yrs. 280
Hammersmith.—Crisp-rd., f.g.r. 13*l.*, reversion in 56 yrs. 320
Chancellor-rd., f.g. rents 34*l.* 4s., reversion in 57 yrs. 835
Chancellor-rd., f.g.r. 6*l.*, reversion in 25 yrs. 170
32, 34, 40, and 42, Chancellor-rd., f., w.r. 142*l.* 2s. 1,420
8 and 10, Chancellor-rd., u.t. 24½ yrs., g.r. 12*l.*, gross rental 67*l.* 255
20, 28, 30, and 46, Chancellor-rd., u.t. 24½ yrs., g.r. 24*l.*, gross rental 135*l.* 16s. 8d. 490
47 and 49, Chancellor-rd., and l.g. rents 15*l.*, u.t. 50½ yrs., g.r. 25*l.*, w.r. 70*l.* 4s. 430
83 and 85, Chancellor-rd., u.t. 57½ yrs., g.r. 8*l.* 8s., w.r. 57*l.* 4s. 370
1 and 2, St. James-st., f., w.r. 67*l.* 12s. 475
Chancellor-rd., plot of land, f. 135
Matching Green, Essex.—Elm House and 1 r. 26 p., f., y.r. 25*l.* 460

By FREDERICK WARMAN.

Clerkenwell.—159, Clerkenwell-rd. (s.), f., y.r. 133*l.* 2 090
164, Clerkenwell-rd. (s.), f., y.r. 100*l.* 1,520
6 and 8, Laystall-st. (s.), f., y.r. 116*l.* 1,800
Barnsbury.—105, Hemingford-rd., u.t. 33 yrs., g.r. 6*l.*, e.r. 45*l.* 270
Stroud Green.—22, Womersley-rd., u.t. 74 yrs., g.r. 7*l.*, e.r. 45*l.* 270

By DREWEATT & WATSON (at Newbury).

Frilsham, Berks.—Plot of land, ¼ a., f. 113
Newbury, Berks.—Two cottages and gdns., f. ... 425
2 and 3, St. Mary's-place, f. 403

By HUMBERT & FLINT (at Tamworth).

Wigginton, Staffs.—Part of the second portion of Drayton Manor Estate, 141 a. 2 r. 29 p., f. (in lots) 14,660

October 27.—By DOWSETT, KNIGHT, & TAYLOR.

Medbourne, Leicester.—Freehold farm, 161 a. 2 r. 29 p. 6,000
The Nevill Arms, p.h. and 4 a. 1 r. 24 p., f. .. 1,300
The Hunt Stables and 2 a. 1 r. 26 p., f. 1,200
Medbourne Farm, 159 a. 2 r. 28 p., f. 4,000
Freehold farm, 120 a. 3 r. 22 p., f. 3,600
Residence and the Old Gas Works, 1 a. 1 r. 4 p., f. 500
Two cottages and plot of land, 2 r. 4 p., f. ... 300

By DYER, SON, & HILTON.

Lewisham.—41, Clarendon-rd., u.t. 48 yrs., g.r. 12*l.*, p. 265

By THOMAS E. HELMORE.

Laindon, Essex.—Manor House and 8 a. 2 r. 2 p., f. 850

By A. R. PEACHY.

Hampstead-road.—219, Stanhope-st., u.t. 30 yrs., g.r. 4*l.*, y.r. 50*l.* 435

By J. C. PLATT.

Fulham.—25 and 27, Langthorne-st., u.t. 90 yrs., g.r. 12*l.*, w.r. 96*l.* 6s. 640

By H. J. BLISS & SONS.

Bethnal Green.—43 and 45, Ellesmere-rd., f., w.r. 83*l.* 4s. 665
Old Ford.—25, Norman-rd., f., w.r. 36*l.* 8s. 290
Stepney.—8, Periwinkle-st., f., w.r. 26*l.* 175

By GEO. JACKSON & SON (at Biggleswade).

Biggleswade, Beds.—Holme Farm Estate, 468 a. 3 r. 33 p., f. 24,335

By LEEDHAM & HARRISON (at Burton-upon-Trent).

Walton, Derby.—Walton-upon-Trent Estate, 1,760 a. 2 r. 30 p., f. 55,250
The White Swan Inn and 1 a. 3 r. 21 p., f. ... 2,000
Cauldwell, Derby.—Ashleigh Farm, 187 a. 2 r. 39 p., f. 6,500

October 28.—By MONEY & JOHNSTON.

Norwood.—9, Harold-rd., u.t. 71 yrs., g.r. 16*l.*, p. 650

By NEWBON, SHEPHARD, & EDWARDS.

De Beauvoir Town.—14, Balmes-rd., u.t. 17 yrs., g.r. 4*l.*, y.r. 40*l.* 160
29, Balmes-rd., u.t. 19 yrs., g.r. 4*l.*, y.r. 34*l.* .. 140
Islington.—72, Rotherfield-st., u.t. 30 yrs., g.r. 5*l.*, y.r. 34*l.* 175

By STIMSON & SONS.

Camberwell.—1, Luxor-st., u.t. 55 yrs., g.r. 6*l.*, e.r. 36*l.* 210
44, Northway-rd., u.t. 64 yrs., g.r. 5*l.* 10s., w.r. 39*l.* 240
Peckham.—3, Clifton-cres., f., w.r. 46*l.* 6s. 355
6 and 7, McKerrell-rd., u.t. 66 yrs., g.r. 10*l.*, w.r. 78*l.* 470
Walworth.—86, Penrose-st., u.t. 35 yrs., g.r. 5*l.*, y.r. 34*l.* 215
98, 100, 102, 106, 108, and 110, Olney-st., u.t. 6 yrs., g.r. 18*l.* 15s., w.r. 218*l.* 8s. 325
Brixton.—50, Mervan-rd., u.t. 63½ yrs., g.r. 7*l.* 10s., p. 310
Clapham.—19 and 21, Meadow-rd., u.t. 15½ yrs., g.r. 7*l.*, y.r. 72*l.* 300

Digitized by Google

By FAREBROTHER, ELLIS, & Co.

Preston Candover, Hants.—Piece of woodland, 12 a. 0 r. 14 p., f. £105
Freehold holding, 23 a. 3 r. 30 p. 500
Lay Hays Mead, 5¼ acres, f. 180
Blacksmith's shop, house, and 1 a. 0 r. 2 p., f. 300
Two cottages, f. 230
Post-office and two cottages, f. 300
Vicarage Cottages and 1 r. 5 p., f. 200
Wield, Hants.—Kings Farm, 32 a. 0 r. 13 p., f. .. 650

October 29.—By DOLMAN & PEARCE.

Hampstead.—46, Stanley-rd., u.t. 54 yrs., g.r. 9l., e.r. 85l. 450

By HENRY HOLMES & Co.

Regent's Park.—43, Princes-rd., u.t. 43 yrs., g.r. 8l., y.r. 41l. 300

By FRANK JOLLY & JAMES.

Clapton.—27, Downs-rd., f., e.r. 60l. 695
79, Upper Clapton-rd. (s.), c., y.r. 36l. 500

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 7 0	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 5 0	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Runbon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Best Dipped Salt Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer "	1 6	" " "
Greenshill "	1 10	" " "
Darley Dale in blocks	2 4	" " "
Red Corsehill "	2 2	" " "
Closeburn Red Freestone	2 0	" " "
Red Mansfield "	2 4	" " "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" " "
3 in. sawn two sides slabs (random sizes)	0 11½	" " "

STONE (*continued*).

	s. d.	
YORK STONE—*Robin Hood Quality* (*continued*)—		
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	per ft. super, del. rly. dep.
1½ in. to 2 in. ditto, ditto	0 6	" "
Scappled random blocks	3 0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. dep.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 0 0	15 10 0
Deals: best 3 by 9	13 10 0	14 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	
2 in. by 4 in. and 3 in. by 6 in.	9 10 0	10 10 0
2 in. by 4½ in. and 3 in. by 5 in.	9 0 0	10 0 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft 5 0 0	5 10 0
Seconds	4 10 0	5 0 0
Small timber (8 in. to 10 in.)	3 17 6	4 0 0
Small timber (6 in. to 8 in.)	3 5 0	3 10 0
Swedish balks	2 12 6	3 0 0
Pitch-pine timber (30 ft. average)	4 10 0	5 5 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 10 0	25 10 0
3 in. by 9 in.	22 10 0	23 10 0
Battens 2½ in. and 3 in. by 7 in.	17 0 0	18 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0	20 0 0
3 in. by 9 in.	18 0 0	19 10 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	15 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	14 0 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 10 0	22 10 0
Do. 3 in. by 9 in.	18 10 0	19 10 0
Battens	14 0 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	17 10 0
Do. 3 in. by 9 in.	15 0 0	16 0 0
Battens	11 10 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 10 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	15 0 0	16 0 0
" " 3 in. by 9 in.	14 0 0	14 10 0
Battens	11 10 0	12 10 0
Second white deals, 3 in. by 11 in.	14 0 0	15 0 0
" " 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
Pitch-pine: deals	19 0 0	21 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	£ s. d.	£ s. d.
Danzig and Stettin Oak logs—		
Large, per ft. cube	0 3 0	0 3 9
Small " "	0 2 6	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 2½	0 0 9½
¼ in. do. do	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 10	0 1 1
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0
Teak per load	18 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. " "	0 14 0	0 18 0
¾ in. by 7 in. white " "	0 10 0	0 11 6
1 in. by 7 in. " "	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	7 10 0
Compound Girders, ordinary sections	9 0 0	10 0 0
Steel Compound Stanchions	11 0 0	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	10 0 0
Flitch Plates	9 0 0	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	9 5 0
Staffordshire "Marked Bars"	10 10 0	—
Mild Steel Bars	8 15 0	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
" " Galvanised	17 0 0	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0	—
" " 24 g.	10 15 0	—
" " 26 g.	12 5 0	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	—
Ordinary sizes to 22 g. and 24 g.	15 10 0	—
" " 26 g.	16 10 0	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0	—
" " 22 g. and 24 g.	18 10 0	—
" " 26 g.	20 0 0	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	—
" " 22 g. and 24 g.	14 15 0	—
" " 26 g.	16 5 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	—
" " " 26 g.	15 0 0	—
Cut Nails, 3 in. to 6 in.	10 10 0	11 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 10 0	—
Pipe in coils	17 0 0	—
Soil pipe	20 0 0	—
Compo pipe	20 0 0	—
ZINC—Sheet—		
Vielle Montagne	27 15 0	—
Silesian	27 10 0	—
COPPER—		
Strong sheet per lb.	0 1 0	—
Thin " "	0 1 1	—
Copper nails "	0 0 10	—
Copper wire "	0 0 10	—
BRASS—		
Strong Sheet "	0 0 11	—
Thin "	0 1 0	—
TIN—English Ingots "	0 1 4	—
SOLDER—Plumbers' "	0 0 6½	—
Tinmen's "	0 0 9	—
Blowpipe "	0 0 11	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4d. " "
Fluted Sheet, 15 oz.	2½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅛ "	2¾d. " "
⅛ "	2¼d. " "
Figured, Oxford Rolled and Oceanic "Glass, white	3½d. " "
" " tinted	5d. " "

Digitized by Google

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 7
" " " in barrels	"	0 2 8
" " " in drums	"	0 2 11
Boiled " " in barrels	"	0 2 11
" " " in drums	"	0 3 2
Turpentine in barrels	"	0 3 5
" in drums	"	0 3 7
Genuine Ground English White Lead	per ton	20 0 0
Red Lead, Dry	"	19 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ALTRINCHAM.—For 189 yds. of sewer in Gaskell-road, for the Urban District Council. Mr. H. E. Brown, Surveyor, Town Hall, Altrincham:—

W. P. Meikle	£253 13	S. Hutton & Co.	£179 0
Exors. of T. Barber	215 0	G. Boyson, Ashton-on-Mersey*	165 0
J. Hamilton & Son	197 0		

BAINTON.—For erection of reading-room, etc., at Bainton, Northamptonshire. Messrs. J. B. Corby & Son, architects, Stamford:—

J. Peasgood	£329 19 6	J. Story	£266 17 0
E. Peasgood & Sons	318 0 0	W. Savage	264 0 0
W. Crowson	309 10 0	E. E. Howes	263 0 0
E. Ireson	303 10 0	W. M. Freeman	249 0 0
Hinson & Co.	298 0 0	R. Scholes	218 0 0
J. Woolston	275 0 0	Roberts Bros. Stamford*	247 0 0

BOURNEMOUTH.—For the erection of new science, art, and technical schools, Lansdowne, Bournemouth, for the Education Committee. Mr. F. W. Lacey, F.R.I.B.A., Municipal-buildings, Bournemouth:—

J. & M. Patrick, Wandsworth, London, S.W.* £19,055

CWMBRAN.—For additions and alterations to police-station and court, for the Standing Joint Committee of Monmouth. Mr. W. Tanner, F.S.I., County Surveyor, Newport, Mon. Quantities by Surveyor:—

D. Davies & Sons	£1,422 0	J. Brownscombe & Son	£1,050 0
Blundell & Bevan	1,260 15	R. Partridge	1,050 0
R. W. Moon	1,135 0	C. H. Reed	1,048 0
A. & J. Richards	1,117 0	C. W. Simmons	997 15
J. Charles	1,100 0	G. F. Leadbeter	976 0
J. Jenkins, Ltd.	1,090 0	J. H. Williams, Newport*	959 0
A. S. Morgan & Co.	1,060 0		

EASTBOURNE.—For alteration and extension of the tipping platform at the refuse destructor works at Roselands, for the Highways Committee. Mr. A. Ernest Prescott, Borough Surveyor, Town Hall, Eastbourne:—

J. Martin £993 15
M. Hookham, Springfield-road* 946 0

EAST KIRKBY.—For pair of cottages, Welbeck-street, East Kirkby, for the Kirkby-in-Ashfield Industrial Co-operative Society, Ltd. Mr. Walter H. Woods, architect, High-street, Long Eaton, near Nottingham:—

Coleman & Blackburn	£450 0	Hibbert	£405 0
J. Stowe	442 10	Tate & Son	394 10
Bains	440 0	A. W. Hoole, Kirkby-in-Ashfield*	389 10
J. C. Green	415 0	Sewell‡	361 0
A. G. Limb	410 10		

‡ Withdrawn.

FINCHLEY.—For school renovations, Long-lane Council School, East Finchley, for the Urban District Council:—

J. Fretwell	£740 10 2	A. J. Comber	£422 0 0
J. R. Jackson	460 19 2	C. Halls & Son, Long-lane, E. Finchley*	418 5 2
N. Fuller & Co.	442 8 8½		
G. E. & A. Tee	437 9 3		

GLYNCORRWG (Port Talbot).—For building abutment, retaining and parapet walls, for a steel bridge at at Glyncorrwg, for the Urban District Council. Mr. W. P. Jones, Engineer and Surveyor, Glyncorrwg:—

J. L. G. Smith	£1,433	A. Scott	£695
G. Thompson & Co.	1,076	Barnes, Chaplin, & Co.	681
T. Walker	881	Collins & Co., Barry*	581
D. Lloyd	703		

[Engineer's estimate £633.]

HAWARDEN.—For Saltney sewerage and sewage disposal, near Chester, for the Rural District Council. Messrs. Elliott & Brown, civil engineers, Burton-buildings, Parliament-street, Nottingham:—

Firth & Co.	£20,621 6 5	F. Mitchell & Son	£16,444 0 0
S. Hutton & Co.	20,476 1 0	B. Riley	16,322 12 7
G. Vickers	18,761 6 7	Moss & Co.	16,284 0 0
Bower Bros.	18,998 0 0	R. C. Brebner & Co.	16,148 16 0
W. G. Willmott	18,104 0 0	Jowett Bros.	15,881 8 0
Lane Bros.	17,910 0 0	W. Jewell	15,701 15 0
A. Hill & Co.	17,571 0 0	Wickstead & Beardsall	15,149 4 10
H. H. Barry	17,555 0 0	A. H. Price & Co.*	14,159 12 0
W. Morley & Sons	17,481 17 0	H. E. Buckley	14,126 14 0
W. Underwood & Bro.	17,236 16 5	Johnson & Langley‡	12,603 15 10
H. A. Jones	17,139 4 10		
Johnson Bros.	16,980 0 0		

‡ Tender withdrawn.

BRENTFORD.—For painting, etc., works, for the Urban District Council. Mr. J. W. Croxford, Surveyor, Clifden House, Boston-road, Brentford:—

—	Clifden House Painting.	Administrative Block.	Temporary Hospital	Main Hospital.	Laundry Block, etc.	Floors.	Lavatories, etc.	Principals, each.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Athey & Co.	60 11 0	6 18 0	4 0 0	14 0 0	9 5 6	3 13 0	19 4 0	2 2 0
T. Brown & Son	42 10 0	5 15 0	3 11 6	10 10 0	9 0 0	3 10 0	19 14 0	0 15 0
R. W. Clayden	41 10 0	4 17 6	3 10 0	12 7 6	4 14 0	2 10 0	24 0 0	1 10 0
A. G. Chamberlain	—	—	—	—	—	—	—	1 0 0
E. J. Holle	55 19 11	8 7 3	6 14 7	20 1 0	12 6 3	15 15 0	28 2 0	1 15 6
D. D. Bland & Co.	65 17 6	11 11 6	4 17 6	22 19 6	11 8 0	7 17 6	28 1 0	1 0 0
S. Squire	26 15 7	4 4 6	3 18 0	9 0 4	9 0 0	4 0 0	21 8 6	3 6 0
W. R. Gray	45 0 0	—	—	—	—	—	—	0 15 0
Myring & Son	39 15 0	7 10 0	4 5 0	22 10 0	12 5 0	5 10 0	23 19 6	1 10 0
G. Marsh & Co.	77 0 0	7 5 0	9 5 6	21 8 0	15 5 0	14 10 0	22 7 0	2 5 0
Collinson & Co.	49 17 0	4 19 0	4 2 0	18 7 6	8 16 0	5 10 0	24 19 0	1 9 3
O. S. Plumridge	—	8 12 0	4 2 3	6 2 0	10 5 6	7 0 0	17 18 0	—
Edwards & Co.	30 0 0	7 15 0	4 10 0	12 16 0	8 10 0	6 10 0	24 0 0	0 15 0
H. E. Stocking	70 0 0				73 0 0			1 17 6
G. R. Rawley	46 17 0	6 13 0	6 11 0	12 0 0	13 12 0	9 0 0	23 14 0	2 0 0
G. Challis	45 14 0	7 15 0	5 5 0	14 0 0	11 10 0	7 10 0	21 10 0	2 10 0
F. D. Hidden, High-street, Brentford*	37 10 0	5 6 0	3 7 6	14 10 0	8 6 0	9 10 0	20 3 0	1 4 0
H. Robinson	49 0 0	5 10 0	4 2 6	12 15 0	9 10 0	8 0 0	22 0 0	4 18 0

BRIXHAM.—For additions and alterations to the Town Hall, for the Urban District Council. Mr. W. Vanstone, C.E., Palace-chambers, Paignton:—

S. Roberts, Ltd.	£820 0 0	H. Webber & Sons	£699 3 3
E. P. Bovey & Sons	790 0 0	Hazlewood Bros., Brixham†	679 19 0
H. C. Goss	742 0 0		

CAERPHILLY.—For small temporary sewage tanks, with contingent works, near Llancaiach Station, Nelson, for the Urban District Council. Mr. A. O. Harpur, Surveyor, Caerphilly:—

Morgan Bros.	£251 3 6	Packer Bros.	£185 2 0
R. Webb	217 14 9	Hamilton & Millard, Caerphilly*	180 10 0
J. Thomas	200 15 6		
Davies & Lloyd	190 10 6		

CHERITON (Kent).—For widening part of High-street, on the North side from Ashley-avenue to the Folkestone boundary, for the Urban District Council. Mr. Arthur Oswald Sherren, surveyor, Public Offices, Cheriton, Kent. Quantities by surveyor:—

T. Burrill	£156 6 6
J. Gosby	134 17 10
W. J. Church, Ashley-avenue, Cheriton, Kent*	109 6 6

HEMEL HEMPSTEAD (Herts).—For Markyate Waterworks, for the Rural District Council. Messrs. Elliott & Brown, civil engineers, Burton-buildings, Parliament-street, Nottingham:—

H. Salisbury & Son	£3,039 0 0	W. Randall	£2,614 0 0
T. Wood & Sons	2,935 0 0	Kemp Bros.	2,586 0 0
A. Hill & Co.	2,870 0 0	C. J. Ell	2,550 12 9
A. H. Ball & Co.	2,860 0 0	J. Clark	2,541 0 0
W. Griffiths & Co., Ltd.	2,802 14 0	R. C. Brebner & Co.	2,509 14 0
J. Honour & Son	2,800 0 0	Bower Bros.	2,499 0 0
Rowell & Sons	2,781 17 4	W. Cunliffe & Sons	2,485 0 0
G. Powdrill & Son, Ltd.	2,745 11 1	L. Lown & Co.	2,400 12 0
W. G. Durnham	2,745 6 0	A. E. Farr	2,396 0 0
G. Bell & Sons	2,740 10 0	H. Williams	2,379 7 0
Vail & Shore	2,712 0 0	W. H. Hill, Brunswick-drive, Skegness, Lincs.*	2,321 0 0
Wickstead & Beardsall	2,654 13 0	Dean & Perkins	2,299 19 0
		H. H. Barry‡	2,200 0 0

‡ Withdrawn.

INVERURIE.—For rebuilding Market-place School, for the School Board. Mr. G. Gray, architect, Inverurie. Quantities by architect:—

Mason: G. Paul, Inverurie*	£43 7 6
Carpenter: J. Duguid, Aberdeen*	340 0 0
Plumbers: J. Laing & Sons, Inverurie*	84 2 6
Plasterers: Grant & Robertson, Inverurie*	54 14 1
Slaters: Milne & Cown, Huntly*	81 5 6
Painters: Maitland & Ross, Inverurie*	34 17 6

KEARSLEY.—For street improvements, Turner-street and Back Taskers-lane, for the Urban District Council. Mr. H. Nuttall, Surveyor, 20, Market-street, Bury. Quantities by Surveyor:—

J. T. Hayes, 130, New-lane, Patricroft, on a schedule of prices.

LEYTON.—For installing the electric light and hot-water heating apparatus required at Canterbury-road Schools, Leyton, for the Urban District Council. Mr. W. Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C.:—

Electric Light.

British Westinghouse Electric M. Co.	£311 18 0	Fryer & Co.	£220 0 0
Cannon & Sons	278 0 0	J. T. Halsey	210 10 6
Tamplin & Makovski, Ltd.	260 0 0	Garratt, Hunt, & Co.	210 0 0
Rowland & Hulton	256 0 0	E. E. Beaven	205 0 0
Myhre Francis, & Co.	253 0 0	W. Simmons	193 0 0
Pemberton, Arber, & Co.	246 0 0	H. J. Whitehead	189 0 0
W. E. King	239 0 0	H. J. Toms & Sons	183 10 0
Wenham & Waters	220 0 0	Newbald & Co.	177 0 0
Smeeton & Page	220 0 0	Muir, Watts, & Co.	169 5 0
		Weston & Sons	163 14 0
		Johnson & Phillips, Ltd., Kent*	143 9 6

Hot-Water Heating.

Tamplin & Makovski, Ltd.	£670 0 0	Brightside Foundry and Engineering Co.	£397 0 0
Z. D. Berry & Son	548 0 0	E. E. Beaven	392 0 0
R. J. Key	548 0 0	Russell & Co.	392 0 0
Pemberton, Arber, & Co.	490 0 0	G. & E. Bradley	371 0 0
J. T. Halsey	481 15 6	Cannon & Sons	363 0 0
G. A. Akers & Co.	455 0 0	Cannon & Hefford	359 0 0
Wembly Heating Co., Ltd.	442 0 0	F. Davies	331 0 0
W. Simmons	440 0 0	General Iron Foundry Co.	266 0 0
Wenham & Waters	439 0 0	Watkin & Son	263 15 0
W. J. Spry & Co.	437 0 0	Alger & Sons	—
Fryer & Co.	435 10 0	W. Freer	—
Barnards, Ltd.	415 7 6	Weston & Sons, London, E.C.*	249 10 0

LEYTON.—For school furniture and fittings required for the outfit of the Canterbury-road Schools and Sybourn-street Schools, for the Urban District Council. Mr. W. Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C.:—

	Sybourn-street.	Canterbury-road.
Addison & Co., Ltd.	£404 19 0	£488 18 0
Beardsmore & West	—	499 10 0
Bennet Furnishing Co.	379 9 4	340 10 4
J. D. Bennet, Ltd.	383 12 4	400 6 1
Bradford & Co.	362 4 6	389 6 4
Educational Supply	430 0 0	454 10 0
Fishers School F. Co., West Bromwich*	*342 17 4	*361 9 7
L. Fuller & Co.	795 0 0	895 0 0
G. James & Son	550 0 0	650 0 0
Goodman & Co.	475 17 0	536 11 0
G. M. Hammer & Co.	427 4 0	448 11 0
G. E. Hawes & Son	348 10 0	369 0 0
North of England Sch. F. Co.	409 18 2	437 18 0
Paintin & Co., Ltd.	355 8 0	395 9 0
Scholastic Trading Co.	385 0 0	397 0 0
Summerscales, Ltd.	446 16 2	493 9 8
Unity Wood and Iron Co.	373 0 0	400 0 0
Wake & Dean, Ltd.	346 10 0	364 0 0

LONDON.—For heating (Cow-lane, Rotherhithe), for the London County Council:—

Wenham & Waters, Ltd.* £371

LONDON.—For heating (Hitherfield-road, Wandsworth), for the London County Council:—

W. G. Cannon & Sons, Ltd.* £287

LONDON.—For heating (Adys-road, Dulwich), for the London County Council:—

Wenham & Waters, Ltd.* £289

LONDON.—For repairing the stable and forming an additional window in one of the rooms at the Stoke Newington fire-station, for the London County Council:—

Gladding & Co., under the jobbing schedule.*

LONDON.—For the erection of Bow fire-station, for the London County Council:—

G. Munday & Son	£10,536	J. Carmichael	£10,047
Higgs & Hill, Ltd.	10,416	W. Smith & Son	10,000
Leslie & Co., Ltd.	10,319	W. Johnson & Co., Ltd.	9,938
C. Wall, Ltd.	10,300	Perry & Co.	9,829
F. & H. F. Higgs	10,290	H. L. Holloway, Church-street, Deptford, S.E.‡	9,077
Kirk & Randall	10,200		
Holloway Bros. (London), Ltd.	10,070		

‡ Recommended for acceptance;

[The Architect's revised estimate of the cost of the work is £10,071.]

LONDON.—For alteration and enlargement, Woolwich fire-station, for the London County Council:—

C. Wall, Ltd.	£5,525	F. & H. F. Higgs	£5,145
Leslie & Co., Ltd.	5,511	H. L. Holloway	5,093
Holloway Bros. (London), Ltd.	5,400	J. Carmichael	4,947
Kirk & Randall	5,377	W. Johnson & Co., Ltd., Wandsworth-common, S.W.*	4,800
Higgs & Hill, Ltd.	5,287		

[The Architect's revised estimate of the cost of the work is £5,350.]

Digitized by Google

LONDON.—For stall divisions, in the stables at the chief station of the fire-brigade and the Peckham-road, Sydenham, Whitechapel, and Kentish-town fire-stations, and to protect the divisions with cope iron, for the London County Council:—
Gladding & Co., under the jobbing schedule.*

LONDON.—For new arcade between Nos. 116 and 118, Rye-lane, Peckham, S.E., for Mr. Aston Swann. Mr. W. Leonard Dowton, architect, City Bank-chambers, Bedford-row, W.C.:—

A. E. Roome & Co.	£345	A. B. Hill & Co., Forest Gate, E.*	£300
W. T. Champion & Son	325		
W. J. Ingram	310		

LONDON.—For radiators for heating certain rooms in the chief officer's house at the chief station of the fire brigade:—
G. & E. Bradley* £131 10

MALLING.—For two revolving consumptive shelters, etc., for the Guardians:—
Middleton, Peckham Bush, Tonbridge* £19

MELBOURNE.—For alterations and improvements at the Kendrick Mills, Melbourne, near Derby, for Mr. E. Jardine, of Nottingham. Mr. F. S. Antliff, architect, Draycott, near Derby. Quantities by architect:—

J. Barton	£333 16 6	W. Fitchett, Melbourne*	£329 15 6
G. Calow	333 18 0		

POPLAR.—For the erection of mortuaries and post-mortem room, for the Poplar Borough Coouncil, Mr. Harley Heckford, Borough Surveyor, Council Offices, High-street, Poplar:—

S. G. Brown	£2,350 0 0	Gatuercole Bros.	£1,990 0 0
Newell & Lusty	2,172 0 0	A. E. Symes	1,946 0 0
Leslie & Co., Ltd.	2,119 0 0	The Borough Surveyor*	1,912 19 4
W. Reason	2,079 0 0	F. & G. Foster	1,867 0 0
W. C. Harper	2,050 0 0	E. Lawrence & Sons	1,865 0 0
Abbott & Charlton	1,991 8 3	Griggs & Son	1,849 0 0
W. H. Hyde & Co.	1,991 0 0	Perman & Co.‡	1,335 10 0

‡ Since withdrawn.

[The Committee reported as follows:—In the case of each tender, other than that of the Borough Surveyor, a sum of £104 must be added to meet the cost of employment of a clerk of works; and taking this into account the Borough Surveyor's tender is the lowest with the exception of that submitted by Messrs. Perman & Co.]

RAWMARSH (Yorks).—For additions and alterations to the Rycroft Branch Stores, for the Masbro' Equitable Pioneers' Society, Ltd. Mr. J. Platts, architect, High-street, Rotherham:—

Chadwick & Co.	£313 15	A. J. Pugh, Rye-croft, Raw-marsh*	£278 0
Thornton & Son	361 0		
T. Hirst	295 12		

SHIRLEY.—For proposed cottage, etc., at Shirley, Warwickshire, for Mr. Herbert F. Nicholls. Messrs. Bennett & Stratton, architects, Finchley, London, N.:—

J. & W. Thompson	£543 15	F. Davis	£425 0
Bragg & Sons	485 0	F. J. Briley	388 0
W. J. Morris	438 0	W. Harvey Gibbs	385 0

SPENNYMOOR.—For Ox Close sewerage works, for the Urban District Council. Mr. C. R. Spencer, Surveyor, Council Offices, Spennymoor:—

F. Somerby	£66 5	G. Byers, Spenny-moor*	£64 10
R. Telfer	64 10		

SPENNYMOOR.—For Catherine-street footpath, for the Urban District Council. Mr. C. R. Spencer, Surveyor, Council Offices, Spennymoor:—

J. J. Mothersale	£69 17	J. Crombie & Son, Ltd.	£46 17
R. Telfer	54 0	F. Somerby, Coun-don*	45 10
G. Byers	49 5		

STROUD.—For erecting new craft school, for Gloucestershire Education Committee. Mr. R. S. Phillips, Architect, Midland Bank-chambers, The Cross, Gloucester:—
Orchard & Peer, Stroud* £2,497

WESTERHOPE.—For erecting a new infant school, for County of Northumberland Education Committee:—
W. R. Jameson, Kenton, Newcastle-on-Tyne* £1,356 1
[Sixteen tenders were received.]

WHITTINGTON.—For metalling, paving, kerbing, channelling, and draining King-street, for the Urban District Council. Mr. S. J. Laver, Surveyor of the Urban District Council. Quantities by Surveyor:—

T. Beighton	£479 13 6	J. Croft	£394 15 9
J. W. Cox	476 9 6	J. Sims	387 10 0
A. E. Palmer	460 0 0	W. W. Bateman, Chesterfield*	381 12 0
R. Holmes & Sons	454 9 6		
G. Clarke	416 19 9		

WILLESDEN.—For intercepting sewer, Contract No. 1, Brent District Drainage, for the District Council:—

	6 ft. by 4 ft.			5 ft. by 3 ft. 4 in.		
J. Dickson	£75,518	2	6	£67,154	3	5
H. V. Smith & Co.	71,329	17	2	62,270	0	11
Monk & Newell	66,653	3	2	60,811	1	7
D. T. Jackson	66,989	12	2	59,698	11	2
T. Adams	66,340	10	0	57,975	2	4
J. Latter	65,200	12	3	56,936	5	9
S. Pearson & Son	64,467	0	8	58,613	2	11
Wickstead & Beardsell	63,181	9	9	57,094	11	9
H. M. Nowell	60,706	12	5	53,205	5	11
Griffiths & Co.	58,400	0	0	52,892	0	0
J. D. Nowell & Sons	57,884	6	9	52,032	3	9
G. Bell & Sons	57,821	0	0	50,796	0	0
G. Shellabear & Sons	57,595	13	6	53,095	5	2
J. & T. Binns	57,147	8	11	50,554	6	1
Clements, Knowling, & Co.	56 453	0	0	49,552	0	0
A. H. Price & Co.	55,942	18	0	50,597	12	10
Johnson & Langley	55,045	0	2	48,190	0	1
Westminster Construction Co.	54,422	5	8	49,361	14	10
Bower Bros.	54,355	0	0	48,185	0	0
R. McAlpine & Sons	54,106	9	9	47,513	9	10
D. R. Paterson	53,823	0	2	47,826	14	11
Muirhead & Co.	53,781	6	7	48,630	14	11
Macdonald & Deakin‡	52,863	3	4	46,377	0	0
C. Ford	52,570	0	0	46,982	0	0
R. C. Brebner & Co.	52,262	1	10	46,258	9	4
J. Moran & Son	50,398	0	0	43,900	0	0
E. Bentley & Son	50,009	6	3	44,465	11	2
W. Underwood & Bro., Hope-street, Dukinfield, Cheshire	49,547	7	1*	43,936	17	3
Whyte & Co., Ltd.	—			50,808	14	5

‡ Too late.

WILLESDEN.—For paving and road-making, Proutgrove, Neasden, for the District Council. Mr. O. Claude Robson, M.Inst.C.E., Engineer to Council, Public Offices, Dyne-road, Kilburn, N.W.:—

	Scotch Granite.	Norway Granite.
F. G. Brummell, Dudden Hill-lane, Willesden	*£568	£573

[Scotch granite if delivered within one month; if not, Norway granite to be used.]

WROXALL (I.W.).—For road-making, fencing, planting, etc., in forming a burial ground, for the Wroxhall Parish Council (Isle of Wight). Messrs. F. Newman & Cocks, engineers, Ryde:—

E. J. Harvey	£308 0	Adams & Mitchell, Haylands, Ryde*	£234 10
C. E. Linington	259 10		

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

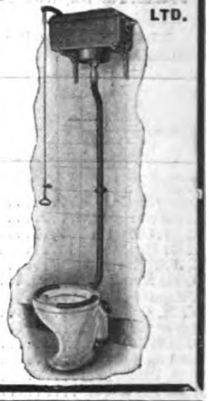
SPRAGUE & CO.'S, Ltd.,
"INK-PHOTO" PROCESS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

Grey Stone Lime,
PORTLAND CEMENT, WHITE CHALK LIME, PLASTER, SAND, SIRAPITE.
Delivered in truck loads any Railway Station, or by vans in London.
JOSEPH S. PETERS,
Address:—417, OLD KENT ROAD.
Telephone: No. 3681 Hop.
Works:—MERSTHAM, SURREY.

PILKINGTON & CO.
(ESTABLISHED 1838),
DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.
Telephone Nos. 511 and 831 Deptford.
Registered Trade Mark.
Polonceau Asphalte.
PATENT ASPHALTE AND FELT ROOFING.
ACID-RESISTING ASPHALTE,
WHITE SILICA PAVING.
SEYSSEL ASPHALTE (*Direct from the Mines*).

JOHN BOLDING & SONS LTD.
MANUFACTURERS OF
WATER CLOSETS, BATHS, LAVATORIES, etc.
IRON AND BRASS FOUNDERS.
EXTENSIVE SHOWROOMS. INSPECTION INVITED.
JUST PUBLISHED
NEW ILLUSTRATED CATALOGUE.
CROSVENOR WORKS, DAVIES STREET, LONDON, W.

No. 86.
Bolding's Fireclay Pedestal "School" Closet,
with trap, inspection cap, and screw; inserted hard-wood rim seat; 2 gall. C.I. "LETA" syphon flushing cistern, brackets, galvanised chain, pull and guide, and galvanised W.I. flushing pipe.



EWART'S
Cures in 19 cases out of 20.
"EMPRESS"
Write to-day for Illustrated Catalogue Free to
EWART & SON Ltd.,
346-350, Euston Road, London, N.W.
Established 1834.
Telephone: 751 North.
SMOKE-CURE

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3484. NOVEMBER 13, 1909.

Contents.

	PAGE
Architects' Charges and Builders' Quantities	513
The London Building Acts Amendment	514
Building Notices under the London Building Act	515
Notes	515
The Architectural Association	517
London Master Builders' Association	521
The Crypt of the Guildhall	522
Picture Exhibitions	522
Notes from France	523
The Surveyors' Institution	523
Architects' Technical Bureau	524
Society of Architects	524
The North Side, Hungerford Almshouses, Corsham	525
General View, Hungerford Almshouses, Corsham	526
Northern Architectural Association	526
The London County Council	527
Meetings	528
Fifty Years Ago	528
Illustrations:—	
Church of St. George-the-Martyr, Southwark	528
Chelsea Town Hall	529
Design for an Automobile Club Overlooking the Park of a Capital City	529
A Garden Pavilion	529
"Bishopthorpe Paddock," York	530
Applications under the London Building Acts, 1894 to 1908	530
Architectural Societies	530
Engineering Societies	530
Legal Column	531
Trade Catalogues	531
Books Received	531
Competition News	531
Correspondence:—	
"Dry Rot" in Buildings	531
London and District Borough Councils	531
Improved System of Vacuum Cleaning	531
Projected New Buildings in the Provinces	532
Metropolitan Water Board	532
Metropolitan Asylums Board	532
Court of Common Council	533
London County Council Education Committee	533
Master Builders' Associations, etc.	533
Obituary	533
General Building News	533
Stained Glass and Decoration	535
Sanitary and Engineering News	535
Miscellaneous	535
Law Reports:—	
Withdrawing a Notice to Treat	536
Right to Make Tunnel under Railway	536
List of Competitions, Contracts, etc., Open	537
Patents	539
Some Recent Sales	540
Prices Current	540
Tenders	541

Illustrations.

Late Renaissance Churches of London.—XI. St. George-the-Martyr, Southwark.

Town Hall, Chelsea; New Front to King's-road. Mr. Leonard Stokes, F.R.I.B.A., Architect.

Design for an Automobile Club Overlooking the Park of a Capital City. By Mr. C. Worby Beaumont, A.R.I.B.A.

A Garden Pavilion. Mr. R. Frank Atkinson, F.R.I.B.A., Architect.

House at Bishopthorpe, York. Mr. Walter H. Brierley, F.S.A., Architect.

Illustrations in Text.

	PAGE
The Crypt of the Guildhall	522
North Side, Hungerford Almshouses, Corsham	525
General View, Hungerford Almshouses, Corsham	526
Plan of St. George-the-Martyr, Southwark	528
Design for an Automobile Club. Ground Plan	529

Architects' Charges and Builders' Quantities.

THE last issue of the Institute *Journal* contains a letter, with the signature "A Fellow," on a point of some practical importance in connexion with the subject of architects' charges. The writer criticises "The R.I.B.A. scale of charges" on the ground that it gives no suggestions or directions as to charges which may fairly and suitably be made for letters and interviews giving advice to clients in regard to proposed building operations, out of which there may arise no specific issue. The Institute scale does indeed give directions as to various matters which are not to be regarded as covered by the ordinary 5 per cent. charge on the cost of an executed building, and also as to the charge which should be made (also a charge reckoned on percentage of estimated cost) for drawings and specification of a building not subsequently carried out; but it gives no rule as to charges which may be made for letters and interviews which lead to no further business. The writer says he knew an architect whose practice it was to charge 5s. for receiving and replying to an ordinary business letter, and he presumes that the same architect would, on the same principle, make a charge for time occupied and information given in interviews which led to no further result; and he adds (and we cannot but agree with him) that "it is strange that this aspect of an architect's account, which looms so large in a solicitor's bill, should have escaped the attention of the R.I.B.A." This is certainly a point which the Council of the Institute should take into consideration. No one can occupy a solicitor's time without paying for it; why should he have a right to take up an architect's time gratuitously?

"A Fellow" then names five points which require clearing up before the Institute makes any application for additional legal powers. For the sake of reference it is convenient to quote them:—

"1. The charge for works not exceeding 1,000*l.*; for which I have suggested a charge of 10 per cent. for the first 500*l.*, and 7½ per cent. for the second 500*l.*, and *pro rata*.

2. For works exceeding 1,000*l.*; for the first 1,000*l.* as above, and for each subsequent 1,000*l.* of outlay 6 per cent., which is in accordance with the American system of the charges of architects.

3. For all structural alterations and additions to old buildings a uniform charge of 10 per cent.

4. Working drawings and details, 1½ per cent., or *pro rata* if not complete.

5. Definite charges for ordinary interviews and correspondence other than those referable to one of the scale charges."

With No. 1 we agree. No. 2, in asking that the first 1,000*l.* of work should be charged for as in No. 1, when the work is above 1,000*l.* and may run to 200,000*l.*, is hardly logical, and is asking too much. The higher charge suggested for work not over 1,000*l.* is justified by the fact that the time and trouble occupied in preparing plans for such work is much greater in proportion to the outlay than in the case of a larger building; but to demand that in the case of the larger work the first thousand should still be charged as if for the smaller work is hardly reasonable or business-like, and we should not think the Institute would support it. The substitution of 6 per cent. for 5 per cent., in all work over 1,000*l.*, ought to be accepted; buildings are far more complicated in their requirements than they formerly were, and it is only just that the rate of professional charge should be raised in proportion. In quoting 6 per cent. as the American system, however, the writer should have mentioned that this has only very recently been adopted—we are not sure whether it has actually come into practical working order as yet—and therefore has not the sanction of long custom.

No. 3 is quite right; alterations to old buildings involve a great deal more trouble than the same expenditure on a new building. No. 4, if we understand it rightly, appears to be proposing an extra charge for detail drawings beyond the 6 per cent. for the building as a whole. This is an innovation which we do not think can be supported; detail drawings are a necessary part of the architect's general work in carrying out the building, and there is no valid excuse for charging extra for them. No. 5, as already observed, deals with a phase of the relations of architect and client which has been strangely overlooked, and ought to receive attention.

We may add that, in any revised scale of charges, we should like to see some recognition of the fact that charging by a percentage on the cost of the building is not the only possible basis of charging, and that an architect is at liberty, if he prefers it, to do as a painter and sculptor does, and charge a previously stipulated sum for his work, independent of its precise cost. The percentage basis of charging has no doubt the sanction of general custom, and the merit of supplying a simple and easily intelligible means of settlement; but it ought not to be regarded as a sacred institution. Whatever may be said for it on the ground of precedent and convenience, it is, on principle, essentially illogical and open to outside criticism, and leaves to the architect who has gained an exceptional position no opportunity for reaping the benefit of that position by making, as a painter or sculptor would, a higher charge than could be commanded by men of inferior talent.

Almost at the same time that the Institute *Journal* with this letter reaches

Digitized by Google

us, we receive a brief report (printed on another page of this issue) of a recent meeting of the London Master Builders' Association, at which another vexed question, that of the supply of quantities, is discussed with some bitterness. For those whose memory of professional and business matters goes many years back, it is curious nowadays to read the complaint of the builders as to "the hardship imposed upon them by having to take out their own quantities." Why, when quantities were first introduced, no one dreamed of any one but the builder taking them out, for a very good reason—that they only concerned the builder. The fundamental principle of the matter seems to be entirely forgotten. The quantity of material employed is of no consequence to the architect and the building-owner. They do not ask for so many thousands of bricks, so many cubic feet of masonry, so many feet run of this or that moulding; they ask for a building of a special design, dimensions, and materials, shown in (we will assume) sufficiently detailed drawings and described in a sufficiently detailed specification, and they say to the builder—"What can you do that for?" It then becomes necessary for the builder to find out what amount of each class of material he will have to provide; but that is nothing to the building-owner and architect. They do not care what is the length in foot-run of a cornice, or how many thousand bricks are used in a wall, so long as they get the cornice and the wall which the architect designed. That is the fundamental principle of the matter. We are not ignoring existing circumstances. But it is sometimes as well to look back to the first principles of things, and see what they really meant at the outset.

The important position now occupied by the quantity surveyor arose of course out of the constantly increasing and now almost universal adoption of the system of competition tendering. A dozen contractors could not have the plans all at once (though with the present means of photographic reproduction even that might in fact be managed), and a surveyor took out the quantities for all; and in days not so very far back this surveyor was in general appointed by the competing builders among themselves, and paid by them or (more generally) by the successful tenderer. Then it came to be recognised that this arrangement gave possibilities of collusion, and that it was better for the architect to select and commission the quantity surveyor. That is how we arrive at the present position. The system of competition tendering is at the root of it. And as long as this system is general the position must probably remain unaltered.

But if Mr. Godson, who spoke on the subject at the Master Builders' Association, intended to imply that the mere fact of a builder being asked to take out his own quantities was in itself "a hardship," we cannot see the sense of this. Originally, when quantities were first introduced, they were, as we have pointed out, essentially the builder's own concern; and we can hardly suppose that a builder who had taken out quantities in order to make an estimate, would omit to add something to the estimate in consideration of that. So that it really seems that the builder, in declining the "hardship" of taking out the quantities, is in fact driving off into the hands of a surveyor a little bit of business out of which he might have made a legitimate profit for himself.

The prevalence of the system of competition tendering, which practically necessitates the intervention of the quantity surveyor, is a fact of the day, and a fact which we cannot apparently get away from. But (to come back again to first principles) it does not make for the good of architecture. The difference between the solid and ample proportions of walls and details, which we become conscious of in measuring some XVIIth or XVIIIth century mansion, and the comparatively skimped appearance, in such characteristics, of a modern mansion, represents the difference between "measure and value" and the result of competition tendering.

THE LONDON BUILDING ACTS AMENDMENT.

SINCE the publication of our last article on this subject various improvements have been made in the wording of several clauses in that part of the London County Council (General Powers) Act, 1909, relating to the London Building Acts. The Part itself is now IV., instead of V., as previously, and the numbering of the sections and subsections is slightly altered in consequence of modifications introduced into the final text of the Act, which has received the Royal assent, and to-day forms part of the London Building Act.

Sect. (21) is now amended so as to obviate the objection which we raised concerning the previous stipulation that every "metal pillar and girder shall be of iron or steel, or other standardised structural metal." The words "metal pillar" and "metal girder" are substituted, thereby bringing sects. (21) and (22) into line, but the marginal reference to the latter section has escaped correction, for it still contains the words "iron and steel," instead of the word "metal" employed in the text.

Our objection to the inadequate definition of a girder in sect. (21) is answered by modified wording to the effect that "the expression 'girder' shall mean a metal girder or joist."

Sect. (22) has been much improved by corrections and additions, which go a long way towards meeting our previous friendly criticisms.

Subsect. (1) now states very clearly the character of the metal that may be used, saying: "Every pillar or girder shall be of iron or steel, or any other structural metal which may hereafter be standardised by the Engineering Standards Committee." This is a judicious addition, but a statement concerning the quality of iron and steel other than "rolled steel" is still wanting.

Subsect. (2) now provides a further safeguard by stipulating that the party walls (if any) shall be capable of safely sustaining the loads bearing upon them, thereby making it necessary for architects to consider whether the thicknesses of brick or stonework demanded by the principal Acts are adequate, instead of relying implicitly upon an Act of Parliament, as before.

Subsect. (5) contains two concessions deserving appreciation, the first permitting the fire-resisting casing on the upper surface of the upper flange of all internal girders to be 1 in. instead of 2 in. thick, and the second exempting from fire-protection the internal pillars and girders in "buildings of only one story, and not more than 25 ft. in height."

Subsect. (6), while still embodying the concession to which we before called attention, now demands provision against buckling in every girder where "the depth of the web exceeds sixty times the thickness thereof"—a stipulation to which no objection can be taken.

Subsect. (8) has been improved by substituting for the phrase: "Separators shall not be more than 5 ft. apart," the new wording, "Separators, or plates, or other members acting as separators shall not be placed at a distance apart exceeding five times the depth of the girders to which they are attached." The alteration is good as a further safeguard in the employment of a customary, but not entirely commendable mode of forming compound girders.

Subsect. (10) now demands that where bolts are used they shall extend through the full thickness of the nuts, and that the latter shall "be so secured as to avoid risk of their becoming loose." We quite agree with these additions, although wishing that something had been said as to the relative sizes of bolts and bolt holes, and the quality of metal to be employed.

Subsect. (11) (A) includes words making clear the point that the reduced thickness of external walls is not intended to override any of the requirements in the section with regard to the thickness of casing for pillars and girders.

Subsect. (11) (C) is substantially as before, but instead of commencing: "All brickwork and concrete shall be executed in Portland cement mortar," now reads, "All brickwork and work in which terra-cotta concrete stone tiles or other materials are used shall be executed in Portland cement mortar." This alteration, taken with the omission of the former subsect. (12), gets over the difficulty that we pointed out would result from the literal rendering of the last-named subsection. As finally settled, subsect. (11) (C) permits facing materials to be incorporated and considered with the brickwork and other work of external walls, and does not demand that they shall be 4 in. thick (possibly in addition to the wall thickness). We are pleased to see that this point has been satisfactorily adjusted.

Subsect. (16) still requires that all floors and staircases, together with their enclosing walls, "shall be constructed throughout of fire-resisting materials and be carried upon supports of fire-resisting materials." We suppose the Council really meant to say: *All floors and staircases, together with their enclosing walls, shall be of fire-resisting construction and be carried upon supports of fire-resisting construction.* As they have not said this we can only hope that the subsection will be interpreted with reasonable latitude.

Subsect (18) (C), relating to the floor

Digitized by Google

loads for different classes of buildings, answers our previous query concerning the omission of hotels, hospitals, workhouses, lodging-houses and the like, by classing with floors for domestic purposes those intended "for the purposes of human habitation."

For some reason which we cannot guess the previous definition of the floor load for schools, colleges, and places of instruction has been deleted, and there is still no provision for the floors of churches, halls, and other buildings occupied but not inhabited by the public. To cover these omissions a new paragraph has been added providing that the superimposed load for any floor intended to be used for a purpose for which a superimposed load is not specified shall be provided for pursuant to subsect. (2).

Subsect. (20) has been simplified, and merely specifies the minimum of 30 lb. per square foot for the upper two-thirds of the surface exposed to wind pressure.

Subsect. (21) (A) is improved by the omission of the ratio l/d as an alternative guide to the working stresses in cast-iron and mild steel pillars, and the permissible stresses for mild steel (and consequently for wrought-iron as governed by subsect. (21) (B)) have been modified, most of the alterations giving increased latitude to designers. The same subsect. is materially improved by the insertion of paragraphs (C) and (D) relating to eccentric loading on pillars.

Subsect. (22) slightly increases the permissible stresses in mild steel and wrought-iron, and ignores cast steel as a structural metal.

Subsect. (23) is a new one, limiting the shear on rivets used in double shear to "one and three-quarter times the working shear allowed under this section on a like rivet when used in double shear." There does not seem to be any strong reason for this requirement, for reliable experimental data indicate that the unit shearing strength of steel rivets in single and double shear are practically identical. However, the reduction involves no appreciable increase of cost, and is on the side of safety.

Subsects. (34) and (35) give the County Council power to modify or waive any of the requirements of certain subsections, affecting the fire-protection of pillars and girders, the connexion of adjacent girders intended to act together, the position of girders in relation to floor level, wall thicknesses, the composition of mortar, pillar connexions, the cleaning and painting of metal work, wind pressure, foundation pressure, and the proportions of brick pillars. We have reason for believing that the word *modify* was used with the specific object of obtaining power to abate or reduce requirements and not to make changes that would increase their stringency. This point is illustrated by the opening words of the subsection:—"In order to facilitate the erection of buildings of metal skeleton framework, it shall be lawful for the Council to modify or waive. . . ." Occasions will often arise under the new regulations, as they have arisen under the principal Acts, where relaxation of requirements can justfiably be made. Previous enactments gave too little discretion to the Council, and in consequence they and the district surveyors were often compelled to insist upon the letter of a law that had become obsolete. Subsect. (34) provides a remedy for hardship that would otherwise be inevitable in some circumstances, and one that we may be sure will always be applied with proper regard to the welfare of the public.

Sect. (25) subsect. (1) denotes a movement in the right direction by enacting that the tribunal of appeal shall comprise one member appointed by the Institution of Civil Engineers. Thus the tribunal in future will consist of one member appointed by Government, and three others representing the Royal Institute of British Architects, the Surveyors' Institution, and the Institution of Civil Engineers. No one can possibly cavil at this constitution.

Although the new regulations may not be absolutely beyond criticism, they provide a thoroughly workable solution of the problem which has long confronted architects and structural engineers in London, and bear throughout abundant evidence of the great care which has been taken to eliminate comparatively slight blemishes, and to consider the interests of architects and builders without disregarding the safety of the public.

BUILDING NOTICES UNDER THE LONDON BUILDING ACT.

THE case reported in our "Law Reports" in last week's issue under the heading, "What is a Builder?" raises a question of some importance to subcontractors. The summons alleged that a firm of builders had executed certain building works without having notified the District Surveyor, as required by sect. 145 of the London Building Act, 1894. It appeared that Messrs. Waygood, the lift engineers, had contracted with the owners and occupiers of the premises for the erection of a lift, but that they had subcontracted with the defendant for the execution of the necessary structural alterations in the building. In the contract there was no term introduced as to who should give the necessary notices to local authorities, and neither party had, in fact, done so. The magistrate considered that the case raised a difficult question, but he was of opinion the wrong party had been summoned, and he dismissed the summons.

In large contracts for extensive works there is no doubt that the building agreement would contain a clause as to which of the parties should give such a notice to satisfy the requirements of the Act, and the matter would not be allowed to go by default; but in cases like that under discussion it is difficult to see which party should give the necessary notice. Sect. 145 of the Act imposes the duty on "the builder or other person causing or directing the work to be executed"; but by the defining sect. 5 (33) the "builder" is defined as "the person who is employed to build or to execute work on a building or structure, or where no person is so employed the owner of the building or structure." There is no case apparently dealing with the point, so it is a matter of opinion, but, taking these two sections together and applying them to the facts of this case, it would appear that they would embrace both parties. The defendant in this case was "employed to build or execute work on a building or structure," and so were Messrs. Waygood. Under sect. 145 the "builder"—*i.e.*, the person employed to build or execute work—would have to give notice, but so would "the person causing or directing the work to be executed"; and Messrs. Waygood seem to answer this description even if they were not "builders" within the defining section.

A little assistance is derived by referring to the terms of the old Act, the Metropolitan Building Act, 1855. Sect. 38, which corresponds to sect. 145 of the London Building Act, provides that "It shall be the duty of the builder engaged in building or rebuilding such building or in executing such work" to give the notice; and "builder" is there defined to include "the master builder or other person employed to execute or who actually executes any work upon any building." Those words would, at any rate, have included the defendant. In the uncertain condition of the law all that can definitely be laid down is that the parties to any building contract should see that the matter is defined by the contract, so that notice can be assured from somebody, preferably the person actually executing the structural work.

NOTES.

The Hellenic Society.

ON Tuesday Miss Gertrude Bell, at the meeting of the Hellenic Society, gave an admirable lecture on the Persian Palace of Ukheithar, a little known building some distance westward of the Euphrates, and of which sufficient remains exist to enable its plan and construction to be completely understood. The building was probably of the VIIth or VIIIth century A.D., but its main plan, with a fortified *enceinte* wall and the palace at the inner end of the courtyard, at once recalls Khorsabad, and is a curious instance of the persistence through so many centuries, and under a different race, of the ancient Mesopotamian form of plan for a fortified palace. Photographs of every portion were shown in the course of the lecture; the larger vaults were constructed *par tranches*, with the courses set back at a slope, in the manner adopted in so many examples of Oriental vaulting. There is one dome, over a square compartment, for which the squinch arch is employed at the angles. An interesting feature in the sections of the vaults is the introduction, between two parallel vaults, of a smaller arched space, which not only assisted in affording an abutment to the main vaults, but may, as the lecturer suggested, have also served to keep the interior cool by interposing an empty space between the exterior and the interior, instead of solid haunches of stone or brick; but we should think that the saving of materials and the reduction of weight were the principal objects. The lecture was one of the most able and interesting lectures on an architectural subject that we have ever heard. We understood Miss Bell to say that a monograph publication on the building was in contemplation.

We hope this may appear before long, for the Ukheithar Palace is a building of great significance in regard to some points in architectural history.

L.C.C. (General Powers) Act, 1909.

WE have received a pamphlet* which contains those sections of the London County Council (General Powers) Act, 1909, which received the Royal Assent August 16 last, and which relate to the amendment of the London Building Acts. This part of the Act will in future form part of the London Building Acts, 1894-1909. A note inside the cover states that this publication forms Appendix VI. in Professor Banister Fletcher's fourth edition of the London Building Acts, 1894-1909. This part of the Act contains the provisions with respect to buildings of iron and steel skeleton construction, and relating to the powers of the Council to make regulations with regard to the use of reinforced concrete, etc., and it was fully discussed in our pages before it became law. Local and private Acts being difficult of access to the general public, it will be a convenience to those connected with the building trade to be able to procure these sections in pamphlet form.

Arbitration *versus* Strikes.

THE settlement of two more long-outstanding wages questions on our leading railways within a few days of each other is worthy of comment. Prior to the formation of the Conciliation Boards and the appointment of arbitrators these disputes were a constant menace not only to the companies concerned, but to the community in general, and traders in particular. Strikes and rumours of strikes caused so much disturbance and apprehension that the smooth and successful working of the new, commonsense procedure should not escape appreciative recognition. Sir James Woodhouse, in the case of the North-Eastern Railway, and Lord MacDonnell, in that of the Great Northern, have dealt most thoroughly and comprehensively with the demands of the different grades of workers, to whom their awards should be, and apparently are, welcome and satisfactory. Shareholders may view the matter in a different light, seeing that shorter hours and higher wages inevitably spell reductions in net revenue. But even on that head the sense of security engendered by awards binding for four years should surely be regarded as a valuable set-off, for a large strike might affect their dividends quite as adversely, and without bringing about any satisfactory or permanent settlement at the end.

The Birkenhead Building Mishap.

ON Thursday afternoon last week part of a stable, about 90 ft. long by 27 ft. wide, collapsed during construction, but fortunately without causing serious injury to the men engaged on the work. The lower story consists of a reinforced concrete foundation slab, from which rose columns of the same material supporting reinforced concrete beams and flooring. Upon the exterior beams a brick enclosure was being built at the time of the failure, to form a loft over part of the stable proper. The mishap is attributed to the failure of one or more of the columns, which were of concrete, reinforced by some patented steel bars, and a spiral winding of steel strip. Whether the collapse is attributable to inadequate design, to bad workmanship, or to premature removal of the timbering we do not know. It may have been caused directly by any one or all three of these, and indirectly by the absence of proper supervision. We are informed that the architect originally had before him estimates from different contractors, skilled and unskilled in reinforced concrete work, and that, rejecting estimates based upon well-tried methods, he accepted one at lower price, not representing any particular system, but based upon the merits of a patent bar which is supposed by some people to provide a royal road to design. The resulting failure should cause no surprise, nor should it create prejudice against reinforced concrete work designed by experts and executed by experienced contractors. If an architect is himself an expert in reinforced concrete design he will take great care to employ none but thoroughly experienced contractors. If not an expert, and if relying upon what he may have read in an advertising text-book and upon a contractor new to the work, he is certainly not properly equipped for undertaking reinforced concrete construction. This mishap emphasises and justifies the repeated warnings we have given from time to time.

Site of the Globe Theatre, Southwark.

THE article, with illustrations of maps and views, in the current number of the Institute *Journal*, forms a notable contribution to a still vexed controversy. Mr. George Hubbard, F.S.A., rests his conclusions upon cartographical testimony. Relying upon the old maps, and Visscher's and Hollar's views, he fixes the site as on the *north* side of Maid, or Maiden, Lane (now Park-street), Bankside. So far, Mr. Hubbard is in accord with the theory recently advanced by Dr. C. W. Wallace, of Nebraska, who, we understand, can and will produce legal documentary evidence to prove his contention. But the memorial tablet set up a few days ago indicates that the site lay, albeit at no great distance, within Barclay, Perkins, & Co.'s brewery, on the *south* side of Park-street, where Globe-alley is plotted in Rocque's map, 1746. In the *Times* of October 8 last Dr. William Martin, F.S.A., gives abstracts of documents of title, 1626-1787, to premises belonging to the brewery. For instance, in 1626, Sir Mathew Brand (who pulled down the Globe in April, 1644) conveys certain property bounded on one side by

"the alley or way leading to the Gloabe Playhouse commonly called Gloabe Alley."

A conveyance of 1732 by Wadsworth to Thrale cites:—

"A certain alley or passage called Globe Alley in antient times leading from Deadman's place [Park-street, south] to the then Globe Playhouse."

In 1787 Henry Thrale's executors and devisees conveyed properties in Globe-alley to Barclay & Perkins. Moreover, a Sacrament Token Book, of 1621, which contains the names of parishioners in the order of their habitations, and is preserved in Southwark Cathedral, has entries with subsequent and significant corrections which go to evince that the theatre stood in Globe-alley.

Bruges and the Sea.

GRATEFUL as lovers of the picturesque may be for the gradual accumulation of silt which long ago separated the ancient city of Bruges from the sea, and so preserved its quiet, old-world aspect to this day, the people of Belgium have other views. By the expenditure of some two and a half millions they constructed the new seaport of Zeebrugge, which was intended to revive the material prosperity of a once famous industrial centre. Nevertheless, the great forces of nature still oppose the efforts of man, and, despite persistent dredging, the sea continues to pile up mud and sand to such an extent as to render the new harbour dangerous and of no use save for vessels of small size. So rapid is the accretion of material that last year, after an area of about 250 ft. square had been dredged to the maximum depth of some 32 ft., only a month later the depth had decreased by fully 7 ft. 6 in. This does not indicate a very promising future for the port of Zeebrugge, and those who rejoice in the peacefulness and architectural beauties of Bruges need not fear any immediate transformation of the city into a Belgian edition of Leeds or Bradford.

Old Park, Enfield.

IN the sale of the furniture and effects of this mansion, next week, are comprised some Greek and Roman pottery and glass, old English plate and pewter, Oriental rugs and porcelain, and English cabinet-work of the XVIIth-XIXth centuries. In the grounds are some iron gates and marble vases from Lord Burleigh's house at Theobalds, near Waltham Abbey, which his son, Lord Salisbury, exchanged to James I. for Hatfield, and which was finally pulled down in 1765; several ancient leaden figures; and ornamental stonework from Burlington House, Piccadilly, the South Sea House, and from two of Wren's city churches. Of the fine old leaden cisterns there are illustrations in the *Builder* of November 29, 1902, by Mr. J. Davidson. The Old Park was formerly a part of Enfield Chase, appurtenant to the manor house, or "palace" as it is still called, and is a vestige of the ancient forest of Middlesex. In the time of the Commonwealth it supplied 400 oak trees for the navy. It has latterly been the seat of Mr. Edward Ford; it was at one time owned by George and his son, Christopher, Dukes of Albemarle. Having reverted to the Crown, Old Park was granted by King William III. to William Bentinck, Earl of Portland. Samuel Clayton bought the property, about 230 acres, for 7,000*l.* at the close of the XVIIIth century.

NEW BUILDINGS AT FOLKESTONE. — The Folkestone Town Council have approved the plans of the following new buildings:—Plans, submitted by Mr. S. Vant, owner, architect, and builder, for two houses in Trimworth-road; plans, submitted by Mr. A. Field, owner (Mr. G. H. Camburn, architect, Mr. A. J. Camburn, builder), for additions to No. 1, The Parade; plans, submitted by Mr. H. Holden, owner (Mr. R. Pope, architect, Mr. R. Lowe, builder), for a detached house in Radnor Cliff-crescent.

* London: B. T. Batsford. 1909. 6d.

Digitized by Google

THE ARCHITECTURAL ASSOCIATION.

AN ordinary fortnightly meeting of the Architectural Association was held on Friday last week at No. 18, Tufton-street, Westminster, Mr. Henry Tanner, President, in the chair.

The minutes of last meeting and some nominations having been read and agreed to,

Mr. E. Gunn, Hon. Secretary, announced that the next meeting of the Debating Society would be held on November 12, when papers by Messrs. H. A. Hall (for) and H. W. Brittan (against), entitled "That the Tradition of the XVIIth century is the Only Sound Basis for the Development of a National Style of Architecture," would be read.

He also announced that the annual Conversazione would take place at No. 18, Tufton-street, S.W., on Wednesday, November 24, at 8 p.m., when an exhibition of water-colour drawings and sketches would be held.

Elections.

The following gentlemen were then elected members of the Association:—

C. Grellier, Epsom
E. K. Rowe, Westcliffe-on-Sea
H. M. Whitehead, Brentford, W.
A. B. L. Roberts, Chelsea, S.W.
R. Williams, Clifford's Inn, E.C.
R. S. Cobb, Shortlands, Kent
N. A. Walton, Stockwell, S.W.
J. Basevi, Stockwell, S.W.
W. S. Peto, Stockwell, S.W.
Hon. L. J. Fiennes, Reading.

Votes of Thanks.

The President then moved a hearty vote of thanks to Mr. James Williams for a donation of water-colour drawings of Penshurst Place and the interior, by the late Mr. George Devey; and the interior of Haddon Hall by himself (Mr. Williams).

The motion having been agreed to,

The President moved that a vote of thanks be accorded to Mr. Ernest George, who had given the Association six water-colour drawings by himself, which they were very glad to have. The motion was heartily agreed to.

House Drainage and Sewage Disposal.

Mr. W. D. Scott-Moncrieff then read the following paper on "House Drainage and Sewage Disposal":—

"When I was asked to contribute a paper and read it before the members of the Architectural Association I accepted the invitation with the greatest pleasure, but when it came to writing I found the task was not so easy as at first appeared. All things considered, I came to the conclusion that a somewhat discursive paper might best meet the case. The first difficulty that occurred to me had reference to the section of the Association that ought to be particularly addressed. As a teaching body, which is its most important function, the students should have the first consideration, but they, after all, form only a small proportion of the total membership, so that the full-fledged architect could not be overlooked, and besides, there is a great distinction between the kind of address that is suited to the respective capacities of the first, the second, and the third year student. It is hardly advisable that such an opportunity should in any way take the place either of the text-book or the teacher, because the subject of drainage and sewage disposal is so full of necessary detail that a single lecture is an altogether inadequate medium of instruction. In domestic sanitation there is nothing that can supply the place of actual practice and experience. The most carefully acquired knowledge from a printed book must always leave many points uncovered and difficulties unsolved when principles have to be put into practice, and it is for this reason that I would venture to suggest the necessity for students to be saturated with an understanding of the principles involved, so that when troublesome points arise, even if they are not settled in the best possible way, they may, at any rate, be disposed of without any disregard of the general conditions that are universally accepted as the essentials of success.

Unfortunately we have to deal with cases in which principles that have been accepted as fundamental, and the basis upon which architects have conceived and executed their plans, have been again made the subject of discussion and returned to the melting-pot of the unaccepted. It is here that I must address myself to the senior members of the Association, but in doing so I trust the youngest student may find something to think about, so that when his turn comes to take sides in the controversy he may bring his full share of well-matured argument to assist in the best possible solution of the problems involved.

Disconnecting House-Drains.

I think everyone present will admit that the system of disconnecting the house-drain from the sewer has been so generally accepted, and has been so long in almost universal use, that it may be looked upon as a fundamental principle of good domestic sanitation.

Within the last few years this position has not only been attacked, but has been made the subject of argument from quarters that are too influential to be lightly disregarded. At the present moment the question is under the consideration of a Departmental Committee of the Local Government Board, and I am not aware of the Architectural Profession having taken any strong position as to their claim, their just claim, to take a leading part in the controversy. I think that architects are more interested on behalf of their clients, who are, above all others, the householders and ratepayers of the community, than any other profession, and I am afraid they hardly realise the extreme importance of the issues that have been raised.

Many years ago, but within the recollection of many of us, the only protection that existed against the dangerous intrusion of sewer-gas to the interior of our dwellings consisted of an unventilated soil-pipe provided with a D trap, connected to a pan-closet. The idea of making at some point a complete disconnexion between the house-drain and the public sewer occurred to me, and no doubt many others, as an obvious precaution, but the honour of having put the proposal into actual practice and giving publicity to the system rests, I believe, with the late Dr. Fergus, of Glasgow, who made a manhole in his back garden on the line of his house-drain, where he fixed an old-fashioned form of trap with a disconnecting channel. This arrangement I saw myself more than thirty years ago, and I was keenly alive to its obvious advantages. Soon afterwards the arrangement first used by Dr. Fergus was improved upon by Mr. Buchan, who introduced an improved form of trap, which bore his name, and became widely adopted in connexion with an access chamber. This system of disconnexion has remained, with a few changes in details, the standard arrangement ever since, and its adoption has spread all over the civilised world unchallenged until quite recently, when advocates have risen who almost demand that it should no longer be used and that the disconnecting house-trap should be definitely abandoned.

The first sign of revolt against this widely-accepted device of a disconnecting trap, so far as my information goes, came from the surveyor of one of the outlying London District Councils, who undertook the somewhat laborious task of making a systematic note of the actual working of several hundred disconnecting-traps in his own district and tabulating the results. It appears from this examination that the habits of the householders in that neighbourhood were, to say the least, somewhat peculiar, and seem to have been principally characterised by their indifference to the disappearance of their scrubbing-brushes, which the inspectors discovered in their disconnecting-traps. I think the obvious objection to making this information a ground for doing away with disconnecting-traps altogether is that it would not apply to other districts where the inhabitants are less indifferent to the disappearance of their domestic appliances and where a similar investigation would give totally different results.

Sewer Ventilation and Ventilated Soil Pipes.

The other argument used was of a very different kind, and consisted of a suggestion or claim or demand that the local authorities should be free to make use of the ventilated soil pipes of the householders as a means for solving the problem of sewer ventilation which surveyors have been unable to achieve in any other way.

To this proposal I think there are many serious objections, and the interests, as well as the principles, that are at stake are of such importance that I hope my referring to them very shortly will not be considered out of place. The argument that a certain amount of carelessness is unavoidable in the cheaper kind of houses occupied by people who are altogether indifferent to what goes on with their drainage, as I have said, disappears with the facts supporting it, and can carry no weight where the carelessness referred to does not exist. The other argument that the traps interfere with the use of soil pipes for the ventilation of the public sewers so as to avoid the use of street gratings is in a quite different category. It is true that sewer gratings on the level of the streets is not a sanitary arrangement, but, because sewer ventilation still offers many difficulties, it would surely be a mistake to interfere with the perfection that has been attained in our domestic sanitation by mixing it up with defects in the public sewers with regard to which great efforts are now being made to find a remedy. In certain states of the atmosphere, and especially when the weather is calm, it would be a most risky system that provided for foul sewers being ventilated through the house-drains and soil pipes where the gases would be absorbed by the water in the traps, and discharged as foul odours in the interior of the houses themselves. Against this most serious occurrence there could not be a remedy of any kind, because the disconnexion of which the trap is a necessary adjunct would be prohibited by the by-laws which it is proposed to alter in order to give effect to the new proposals.

Sewers.

Referring to the sewers, Sir Robert Rawlinson, who was a past-master in their construction, laid down the apparently reasonable proposition that if they were laid with an adequate fall and were efficiently flushed they would be self-cleansing, and that being so, their ventilation would be a simple operation if there were no foul gases to be dealt with. This seemed to be a simple solution of the problem by the expedient of avoiding the existence of the difficulty.

I do not know if there are any sewers tnat comply with the conditions he suggested, and in which no nuisance has ever occurred, but it has transpired in ordinary practice that even sewers with ample falls and efficient flushing still give rise to emanations from the street gratings. It should be observed that in practice the flow varies greatly at different hours of the day and night, and that this must involve the existence of large surfaces that are so fouled as to give rise to the odours complained of. It has also been found that the movement of the air in sewers is of the most erratic kind, due to wind and other causes, and that arrangements that work admirably under certain conditions altogether fail owing to sudden changes which it is impossible to control.

It is difficult to arrive at reliable information as to the immediate effect of the existing arrangements upon the public health, because other conditions overlap so as to make it difficult to fix upon the one which is really accountable for the different death rates. There is certainly no immunity on account

Digitized by Google

of a rapid fall in a particular line of sewers, because the gases may find their way most freely to the highest level, and the escape from the street gratings may be as bad, or even worse, at the top than at the bottom of the incline.*

As matters stand at present it really amounts to this, that a sewer open from end to end, or, in other words, a well-constructed ditch, is just as much or as little likely to be a danger to health as a sewer with its foul gases escaping in a more concentrated form at any particular point. In this connexion it may be well to refer to the experience of Bristol where no system of ventilation has yet been found which could be adopted in any one district of the city without being detrimental to others, and, this being so, they have not provided sewer ventilation of any kind. All the same, the houses have been provided with disconnecting-traps, and there is no evidence to be found in the death rates arising from diseases in any way attributable to sewer gas, that can be regarded as unfavourable to the existing arrangements when compared with the death rate of other towns where the sewers are ventilated throughout. In any case, it seems a poor remedy for any evils that may exist to ventilate the gases from the sewers on or about the level of the windows where the great majority of the occupants are in the habit of sleeping. My apology for having said so much upon this aspect of domestic sanitation must be that it is a matter seriously affecting the interests of architects' clients, and that the revolutionary proposals I have referred to ought to have their very serious consideration.

Condemning Drains.

I do not know that with the short time at my disposal I ought to take up more of your time in dealing with the subject of domestic drainage, as there is little in dispute beyond what I have already dealt with, and until these new suggestions were made I think we were justified in considering that we in this country had not only been the pioneers of sanitation, but had reached to something very near perfection in its application.

Before going on to deal with the subject of sewage disposal there is one point on which I should make some remarks, as it must often prove to be a stumbling-block in the experience not only of the young architect, but of every member of the profession who has to deal with domestic sanitation. I refer to the question that often arises as to the amount of defect in an existing drain which justifies a recommendation for its complete renewal. As you all know, the method that has been adopted for many years and which has superseded all other devices is the water test. In the case of stoneware pipes this is a severe test, and it is doubtful if it can always be regarded as a fair one. With so many joints made in a way that is never dreamt of as a practical means of bearing water pressure in other cases, such as the conveyance of a water supply, it seems strange that it should be justified in a conduit that is condemned if it is not water-tight when it happens to be used as a drain. Recent opinion as to the relation between bad smells and disease has not confirmed the extreme views that prevailed a few years ago, and in any case no one suggests that a slight leakage of sewage several feet below the level of the ground even inside a house can be a serious danger to the health of the inmates. If this were so, it is obvious that, *pro rata*, a well-manured garden would be almost certain death. Whether this view is a right one or not, if an architect does not condemn a drain for the smallest leakage that is perceptible under a water test it is fairly certain that some other expert, if he is called in, will find it incumbent on him to do so, and in that event the architect who ventured upon taking a common sense estimate of the danger will be looked upon by his quondam client as a man who did not understand his own business. As a matter of fact, this has often occurred in practice, and new drains one after another have been frequently condemned in the same house on a change of tenancy or ownership for some trifling failure in an arrangement which in practice is never subjected to a water pressure greater than that of the passing sewage, which is practically no pressure at all. It was from the consideration of these difficulties that I made up my mind long ago to look at the question, not from the relative merits of stoneware or cast-iron, *per se*, as the best material for the construction of house-drains as if the water test had not come into vogue, but from the point of view as to which was best able to stand the test when applied. This was more than twenty-five years ago. The first large building which was redrained throughout with cast-iron pipes in London was the Foundling Hospital, where I was allowed a free hand, but it was several years before the architectural profession began to see the necessity of considering the subject mainly from the point of view of the water test. It is obvious that, in the case of cast-iron pipes and connexions, the whole system should be capable of standing a high pressure of water without the slightest leakage, and that if any occurs the architect is quite justified in condemning them.

Mr. Norman Shaw's System.

In looking back upon the early days of domestic sanitation I remember the enthusiasm with which many architects took up the crusade against the prevailing defects: the old pan-closets, the foul D traps, the unventilated soil pipes, the dip-stones, and the bell-traps, all of which have become ancient history with which the young architect seldom has to deal with nowadays. Among these enthusiasts was Mr. Philip Webb, but the architect who was most distinguished for his direct and original contributions to the solution of the many unsettled practical problems of that time was the Nestor of your profession, Mr. Norman Shaw. What he made use of in his own practice was an arrangement that not only provided for a double disconnexion of the soil pipe from the house-drain, but did away with the use of a trap underneath the closets and sinks as well. This he accomplished by means of a hopper head into which the soil and sink pipes discharged at their upper extremities, with a corresponding disconnexion on the ground level arranged with a gully-trap. In this manner he avoided the use of any closet or sink traps inside the house, to which I believe he had a strong objection, and he at the same time advocated the adoption of soil pipes of a small diameter to avoid any accumulations upon their internal surfaces. It happens that a case came to my notice only last year in which these arrangements were condemned by a local authority as being inconsistent with their by-laws, and, in consequence, they were entirely removed and ventilated soil-pipes with traps ordered to be put in their place. I mention this because it was found that the system had worked exceedingly well for, I suppose, about twenty years; and it was discovered on the removal of the soil pipes, which were only 3 in. in diameter, that their internal surfaces were as clean as the day upon which they had been fixed. It is probable that if this system had been in universal use the proposal to do away with the disconnecting-trap between the house-drain and the sewer would never have been made.

Sewage Disposal.

Coming now to the subject of sewage disposal, although my remarks should be confined to that part of it which most concerns the architect, namely, the drainage of country houses, it may be well to say something about the general principles which should apply when adopting what is known as the bacterial system of sewage disposal, which was the first to apply, in this country deliberately and in a practical form. It is needless to say that as a matter of fact the final purification of all foul matters has been due to the work of micro-organisms from the beginning of life on our planet, and that their work has been to restore organic wastes to their inorganic elements so as again to allow of their being used for building up the life processes of plants and animals through successive generations.

Biological Conditions.

On the occasion last year of giving the course of Chadwick Lectures on Sanitation at the London University I attempted to explain the processes that are now being invoked for the purification of sewage in a popular form, and, after dealing with the chemical aspects of the subject from the practical side, I endeavoured to describe the biological conditions that are necessary in order to arrive at satisfactory results. As these were put in the simplest way, avoiding technicalities as much as possible, I hope I may be allowed to make one or two quotations. There are two terms, aerobic and anaerobic, which are in constant use, for which we are indebted to the illuminating genius of Pasteur. They represent the dividing-line between two kinds of micro-organisms, viz., those that can and those that cannot live without air; but it is a line that is frequently crossed. Without going into details, it is sufficient to observe that whether or not a particular organism can or cannot work in only one or in either of these conditions the difference between the results achieved by the two classes of bacteria is of the most remarkable kind.

The anaerobic changes come under the general term of putrefaction, and the aerobic of oxidation, but they each break down organic substances into simpler molecular forms. About the great difference that exists between the two processes there cannot be any doubt, seeing that one produces gases that can be used as illuminants, and the other, the aerobic group, those that will put out the light of a candle. The work of the two kinds of organisms, from a practical standpoint, must be judged from the effect they have in carrying on the required changes to the necessary standard of purification in any particular case, and the whole object of the process is to take the greatest possible advantage of their natural functions. Unfortunately the subject has hitherto been approached from an altogether unscientific standpoint, seeing that it has never been subjected to any method of measurement. The result has been, what must always be expected from rule of thumb, that no real progress in a scientific sense has been achieved at all, and though a Royal Commission has been sitting for more than ten years and spending large sums of money upon the collection of a vast accumulation of facts and figures, these can be of little value until they can be correlated in terms of a common standard of comparison, in comprehensible terms. In such a case an architect who is only concerned with practical results, but who is anxious to obtain some reasonable and definite knowledge such as he can obtain in other branches of his profession from text-books that deal with accurate and scientific data, may well be forgiven if he is quite fogged when a client appeals to him for advice on the subject of sewage treatment by bacterial processes, and I am afraid that if he applied to the Royal Commission on Sewage Disposal for specific advice they could only refer him to reports and minutes of evidence and appendices that would make confusion worse confounded and be altogether beyond his comprehension.

One point is fairly obvious, that an architect has to deal with the problem in one of

* London University Chadwick Lectures, 1908.

Digitized by Google

its simplest forms because, while there are many disturbing factors in the case of town sewage by reason of trade wastes and other complications, he has to deal with it in a fairly normal and uniform condition. It follows that if any real progress had been made in the direction of a standard method of disposal the architect should have been the first to be able to take advantage of it.

Bacterial Processes.

Turning your attention for a few minutes to what actually does occur when micro-organisms convert organic matters into their inorganic elements, it may be well to refer you to the highest results that have ever been obtained in the purification of purely domestic sewage by bacterial processes. It happens that the information is given in a much more detailed form than in any other experiments, because the changes are shown as they actually occur during the process of filtration. They are known as the Ashtead experiments, and are clearly set forth in the Table. Without going into technical details it will be sufficient to point out that the great object is to convert the polluting nitrogenous substances into the mineralised form of nitrogen as nitric acid, in which they were originally assimilated by the life processes of the plant or animal. This is done by the conversion of the ammonia, and you will see from the Table that as the one of these is decreased there is a corresponding increase in the other. This may be regarded as the whole *rationale* of the process. The results were obtained by first subjecting the sewage to the action of the anaerobic or putrefactive fermentation carried on by organisms that do not require air, but assimilate the chemically combined oxygen in the organic matter itself. It was long a question as to how long this putrefaction should be allowed to continue, but as the result of experiments which I carried out for a Committee of the Surrey County Council quite recently it was shown that with a well-arranged filter a wide range in the period of the putrefactive fermentation was permissible without seriously affecting the results.

A Country House Installation.

The most recent installation that has been carried out on these lines has been for Messrs. Forsyth & Maule at a large country house in Berkshire. Here the sewage is first delivered into a chamber in which a deep dip-stone is fixed. The effect of this is to force the incoming sewage in a downward direction so as to allow the heavy inorganic matters to fall to the bottom, provision being made for its removal as occasion demands. The sewage overflows from the forward end of this chamber into the same kind of apparatus which I used in my Ashtead experiments, and to which I gave the name of a "cultivation-tank." The object of this arrangement is to allow the sewage to impinge upon the surfaces of stones, with which the tank is filled, and which provide a permanent nidus or resting-place for the anaerobic bacteria. Whether this is the best arrangement possible may be called in question, but at any rate it is the one which has given far higher results than any other as regards the final effluent it discharges from the filters. The sewage remains in the "cultivation-tank" for a period that depends upon the ratio between the rate of flow of the sewage and the cubic capacity of the tank, after deducting the displacement due to the flints or stones, and this must necessarily vary—much longer during the night, and much less during the day, and so on.

In order to meet the case of the house being empty or full, the tanks are arranged in a group of four. All irregularities are no doubt a disturbing factor, but from the recent experiments referred to a considerable range of variation makes no material change in the results. The effluent from the cultivation-tanks escapes at practically the same level as the intake, and is then carried in a pipe to a distributing apparatus, known as Fidian's, which is self-acting, and is revolved by the weight of the liquid itself, which falls evenly over the surface of the filter and discharges by its own gravity, first through 3 ft. of graded filtering material, and then through another pipe and distributor over and through another filter which was provided to meet the case of having to discharge into a river celebrated for its trout. Although this arrangement is practically the same in most respects as the one which I used partly as regards the preliminary anaerobic tank in 1892, and wholly in the Ashtead experiments in 1897, I do not think it fails in any way to give effect to the most advanced ideas of the present day, but it has one great disadvantage and that is its cost. Although I have devoted nearly twenty years to its development and have contributed a full share of my time in attempting to put the whole subject on a more scientific and satisfactory footing, I cannot but think that in the case of country houses, at any rate, there must be some more simple and inexpensive means of arriving at equally satisfactory results. I must also admit that, although the filtration I have described was based upon the results of long experience, it, too, has been carried out to some extent by rule of thumb, and it is a question with me as to whether it would not have been better to get the actual facts beforehand with regard to this particular sewage. The difficulty is that doing so would have entailed the employment of a chemist and the use of a testing-apparatus beforehand, which in the case of small installations would be regarded as too expensive, though in nine cases out of ten it wodld be far the cheapest procedure in the long run.

In towns, where millions of pounds of the ratepayers' money have been absolutely wasted upon schemes that have been approved by the Local Government, but have proved futile, it is a different matter, because in such cases the cost of arriving at definite information and safe conclusions beforehand would be trifling, whereas in the case of an ordinary country house it may be prohibitive.

Smell and Small Bacterial Installations.

One thing I ought to refer to is the question of nuisance arising from smell in small bacterial installations, and the other is that of the attention required to keep them in proper working order.

I have found that in cultivation-tanks and similar arrangements there is a period in their maturing that generally occurs about a fortnight from the sewage being first applied, when very offensive odours may be expected, but that this passes off in a few days and afterwards smells only occur during certain changes in the weather that are not frequent, such as when it is thundery or during a very low barometric pressure. This, of course, is not pleasant, but in the light of recent knowledge there is no reason to suppose that these odours have any really bad effect on health. Of course, this may not hold good in the case of nervous people who make up their minds that an illness and a smell are in the nature of cause and effect because they noticed a smell so many days before the illness commenced, but the experience of those who have to deal constantly with sewage works, and who are an exceptionally healthy body, shows that these smells are not dangerous. The case of Birmingham may be quoted, where twenty millions of gallons of septic sewage are being actually sprayed into the atmosphere within a short distance of the town without a protest of any kind. This is, I think, carrying matters too far, and, even if my prediction that Birmingham will one day have a rude awakening by reason of an epidemic of some sort, in any case the system is most offensive.

When these cultivation-tanks receive a little intelligent attention they go on doing their work for years without trouble of any kind. One installation occurs to me which was put down by Mr. Philip Webb about fifteen years ago in the neighbourhood of East

TABLE SHOWING SUCCESSIVE STAGES OF MINERALISATION BY NITRIFYING ORGANISMS.

ASHSTEAD EXPERIMENTS, FEBRUARY, 1898.

Descr'ption of Samples.	A Chlorine.	B Free NH_3.	C =N.	D Albuminoid NH_3.	E =N.	F Oxygen consumed.	G O. consumed minus O. required by Nitrous Nitrogen.	H Nitrous Nitrogen.	I =Oxygen required.	J Nitric Nitrogen.	K =Useful Oxygen N_2O_5 to N_2O.	L Total Oxidised Nitrogen.	M Available Oxygen, useful O. Nitrate = O. consumed.	N Total Unoxidised N (Kjeldahl).	O Total Organic Nitrogen.	P Total Inorganic Nitrogen.	Q Total Nitrogen of all kinds.
Effluent from Cultivation-Tank, taken 3 and 5 p.m.	9·0	12·5	10·30	1·50	1·23	9·843	9·843	Nil	—	0·12	0·274	0·12	− 9·57	12·35	2·05	10·42	12·47
1. Effluent from First Tray.	9·0	10·5	8·65	1·25	1·03	6·694	5·56	0·99	1·13	0·096	0·219	1·036	− 6·47	11·5	2·85	9·74	12·59
2. Effluent from Second Tray.	8·5	9·0	7·43	1·00	0·82	5·773	4·74	0·90	1·03	0·48	1·09	1·33	− 4·66	11·10	3·68	8·80	12·48
3. Effluent from Third Tray.	8·5	5·0	4·12	0·60	0·49	4·493	3·60	0·78	0·59	1·87	4·27	2·65	− 0·22	6·60	2·48	6·77	9·25
4. Effluent from Fourth Tray.	8·0	4·0	3·3	0·35	0·29	1·723	0·98	0·66	0·75	2·76	6·30	3·42	+ 4·58	5·15	1·85	6·72	8·57
5. Effluent from Fifth Tray.	7·75	1·5	1·24	0·15	0·12	1·28	0·73	0·48	0·55	4·68	10·70	5·16	+ 9·42	1·75	0·51	6·40	6·91
6. Effluent from Sixth Tray.	8·0	1·75	1·44	0·35	0·29	1·497	0·92	0·51	0·58	4·416	10·10	4·923	+ 8·61	2·25	0·81	6·37	7·18
7. Effluent from Seventh Tray.	7·5	0·35	0·29	0·30	0·25	0·755	0·755	Nil	—	6·6	15·08	6·6	+14·33	0·85	0·56	6·89	7·45
8. Effluent from Eighth Tray.	7·5	0·29	0·165	0·65	0·53	0·397	0·397	Nil	—	7·32	16·73	7·32	+16·24	1·03	0·865	7·48	8·35
9. Effluent from Ninth Tray.	7·5	0·25	0·206	0·60	0·49	0·589	0·589	Slight trace	—	9·0	20·0	9·0	+20·1	0·60	0·394	9·21	9·60

Counts of Aerobic Nitrifying Organisms.

Digitized by Google

Grinstead, and has worked quite satisfactorily ever since.

Where a sufficient fall is available and an efficient system of bacterial filtration adopted there is no difficulty in disposing of the effluent by passing it into any stream that is not used for drinking. In the case of Staines it is allowed to pass into the Thames direct from the filters. When filtration is not available it requires a very porous soil to admit of the discharge being disposed of in underground open-jointed pipes. In such cases it is better to pass it through long shallow channels on the surface of the land, though this, of course, can only be done when the necessary land is available.

I still think that some more simple devices may be found for dealing with the drainage of country houses than those which I have described, and I hope it may fall to the lot of some of the younger members of the Architectural Association to discover them."

In the discussion which followed,

Mr. W. H. Seth-Smith, who proposed a vote of thanks to the lecturer, said he was interested in the lecturer's remarks about the degree of leakage which might be discovered by the water test and which warranted an architect in condemning a system, for that was a very difficult matter. When they were dealing with a very large system and the pipes outside the house were sunk to a considerable extent and were leaking considerably, it was a question whether they ought to remain so, even although they were at a great depth, because the leakage was apt to cause congestion; but he did not think one was justified in going to the great expense of reconstruction when a leakage was slight. The question of the ventilation of the municipal sewer by the house drain freely above the roof had for architects more than one point of interest. They had all of them felt how hideous were these municipal ventilators standing in the middle of the road or at angle corners of houses, and they would do a great deal to banish them. Where there was no relief for the sewer-gas the pressure on the higher parts of the town, where one expected the best health results, must be very great and of a dangerous nature. The most practical point to architects raised that night was how to deal with the house drainage of a country house on a small site, where there was no public sewer, and he did not see, judging from what had been said, how far Messrs. Forsyth & Maule's instance would help. What were the distances between the house and the septic tank and from the tank to the aerobic beds, and from there to the trout stream, into which he understood the effluent went? It was a comparatively easy problem when the distances were considerable, and in one case in the west of England they had dealt with 3,000 gallons of sewage per day from an institution in a very economical manner, not only as to initial cost, but also in the matter of maintenance. They had nearly a mile to carry the sewage before they could deal with it, but with a fairly gentle fall they discharged into a cesspool which was ventilated. The soil was of the stiffest clay, so that they could not adopt any ordinary system of irrigation, and they had been obliged to depend on some artificial system. The sewage was broken up in that tank and the effluent passed at once to four coarse and fine Dibdin beds of charcoal, about 20 by 12 each, used alternately, and all open to the air. They had a simple valve, which discharged a certain amount of sewage at a time into the upper beds, and the effluent was very good, and passed by the Thames Conservancy. The beds were renewed last year, but for seven or eight years they had been in use and there had never been any trouble. It would be of great practical value to them to receive more information as to the best method of disposing of sewage on small sites. It was easy where there was a chalk soil, where they could dig a deep cesspool and discharge the sewage directly or indirectly through an overflow tank into such a cesspool, where for a great many years it would not trouble anyone. That system was adopted in some large watering-places and it proved a very good one; but where the soil was not of that nature, even where it was soft sand, that could not be done. They had heard of Dr. Poore's system of discharge into a ditch, with a slight fall, the sewage being dealt with aerobically, and he (the speaker) had adopted that system in kitchen-gardens, using the overflow from the cesspool with dip-holes occasionally, so as to use every particle of waste, and it had been a great success. He had used little deep tanks occasionally, and there had been no trouble and scarcely any smell.

Mr. Ernest Herbert seconded the vote of thanks. He said he quite agreed with all the lecturer had said as to the disconnexion of house drains from the sewer. In a small way he had had an example recently in dealing with the drainage of a house in the country where there was an abominable sewage system and drainage ventilating from it to the house. He cut it off at the end of the garden with an ordinary interceptor and manhole, and the improvement was at once remarkable. All architects who had to design moderate-sized country houses had this difficulty of sewage disposal, and there was, as the lecturer said, very little definite information on the scientific side of the question as to whether they were right in adopting one of the filtration systems, or whether they were not often much safer in adopting the cesspit system which could be periodically cleaned out. Whenever he had had to deal with sewage in the country where the water supply was inefficient he had always been inclined to use earth closets, because, even in the house, if there was a man about the place, they could be looked after much better than could a bad water system. It appeared that with most of the vertical anaerobic filtration systems they must, if properly carried out, have a fall of 5 or 6 ft., and in many cases that was impossible to get; and he should like to know what system the lecturer thought the best for a practically level site, or where the soil was not light enough, as was often the case, to take away the sewage by surface filtration. He should also like to know what system the lecturer thought was the best for an ordinary sized house where the client, on the ground of cost, would object to any special sewage scheme. Did not the lecturer think that in some cases it was best to have the old cesspit system? He thought that it might be possible in small houses to supplement the use of a drainage system with manual labour where a gardener was employed. The lecturer had shown much modesty in alluding to the very important pioneer work which he had done in the interests of sanitation, for which he had deserved the full gratitude of architects and engineers.

Mr. Frederick Osborne Smith strongly emphasised the importance of the disconnecting-trap between the house and the sewer, reminding members of the way smoke will beat down into the windows when the smoke test is being applied to drains. With regard to the soundness of drains, he thought it most necessary when near a building that the drains should be quite sound, otherwise there was risk of settlement in the buildings, especially on a clay soil. He was unable to agree with Mr. Seth-Smith when he said that a *little* knowledge was *not* a dangerous thing. It was most dangerous in all matters relating to sanitation. There were so many small details which in one case might be satisfactory while under other conditions they would be quite dangerous. Allowing sewage to soak away in the chalk, as advocated by Mr. Seth-Smith, was one of these dangerous points, as every sanitarian knew that there was a very serious risk in polluting the water supply by this means. He begged to differ with the writer of the paper when he said the disposal of sewage from a country house was the simplest form of the problem. It was most difficult, even to the most enlightened of hygienists and those who had devoted many years to its study. Sewage from a house was spasmodic, whether considered daily or monthly, for sometimes the filters would be overworked and at others the sewage would become stagnant and over-septisized. True, it was necessary to give rest, but, as with human beings, the feeding and resting should be regular to obtain the most healthy conditions. The downward continuous filtration gave the best results, but the filter must be well aerated and the necessary rest would be obtained by the natural intermittent flow, which was the natural course of events when the sewage was discharged from an individual house or building; while that from a town was almost continuous. Grease and disinfectants were also strong factors in increasing the difficulties in dealing with domestic sewage, and after purification more trouble was frequently met in disposing of the effluent, especially on clay soils, where there was no available stream. He mentioned a case where the effluent from a single filter 5 ft. deep was discharged into the ornamental lake in front of the mansion without any objectionable results.

Mr. Horace White said that the lecturer had not dealt with the bugbear of our present-day drainage, *i.e.*, the ordinary mica flap inlet. As to the vexed question of interceptors, he thought they were all agreed on that score, and that it seemed rather a dangerous matter to ventilate sewers by the sides of the house. The question of leaky drains was one where circumstances altered cases considerably—as to the soil, the distance from the house, and how far the drain was down from the surface. As to the Fidian distributor, would the lecturer say what his preference was as to that? It seemed to him (the speaker) that it distributed the sewage in lumps, and the Adams or Candy type seemed better, for with them there seemed to be a more continuous flow.

Dr. E. Stanhope Kitchin drew attention to the lecturer's remark that probably some simpler method of house sewage disposal could be devised. He said that if possible it would be preferable to employ aerobic processes alone as preliminary treatment, instead of any anaerobic ("putrefaction") method, so that there should be oxidation throughout the apparatus. This had been achieved by the slate beds devised by Mr. W. J. Dibdin. In the slate beds the crude sewage was allowed to rest for two hours, and deposit its solid matters in thin layers on shelves of slate, where they were aerobically digested by numerous organisms during the period when the beds were resting empty. It was a fact that there is no nuisance from these beds at any stage, not even when they were open to the bottom on a hot day. Through the agency of the oxygen and the aerobic organisms septic or putrefactive action was prevented. Whereas sludge from a septic or cultivation tank is gelatinous, greasy, and offensive, the residue from the slates was distinctly granular, and on exposure dries to a friable mass indistinguishable from good soil. The effluent from the slate beds was highly amenable to further purification on filters or contact beds, and when used on rotating sprinklers was far less likely to give rise to nuisance than a septic effluent. One speaker had mentioned 5 or 6 ft. as being the necessary fall for contact beds; slate beds and fine contact beds were equally efficient when their total depth did not exceed 1 ft. or 18 in., so that they could be employed under a very wide range of engineering circumstances. One advantage was that if ever they did require cleansing this could be done easily and inoffensively by mere flushing with a hydrant. He commended these beds to the notice of the society in connexion with country-house property.

Mr. H. W. Mann asked if it was an absolute

Digitized by Google

necessity to have the filter bed exposed to the air in a small installation. Some people objected to them being exposed, and he should like to know if they could be kept covered and made workable.

Mr. R. A. Dibdin referred to the question of depth of slate beds, and explained that the efficient depth was the 2 in. between slate shelves, and that it did not matter whether the shelves were piled to a depth of 5 or 6 ft. or were spread out laterally over a large area; thus there was considerable elasticity in adaptation to the fall of land.

The Chairman, in putting the vote of thanks to the meeting, said he was glad that everyone seemed opposed to ventilating the sewer through the house drain, for he was sure we should suffer in the end if the practice were continued. But they must not forget that there were some very good authorities who took the other view. As to the water tests, he believed that now if a tenant applied the water test to drains without permission from the landlord he was liable for any damage he did to them, for it was held that the test was too severe for the average drain. As to the Norman Shaw system, it seemed undesirable to have a soil pipe discharging just outside a bedroom window, and he should like to know if that was part of the system.

Mr. Scott-Moncrieff: Yes.

The Chairman: Do you defend it?

Mr. Scott-Moncrieff: It has worked admirably.

The Chairman: I would sooner have the pipe outside someone else's bedroom.

Mr. Scott-Moncrieff: Yes; there I agree with you.

The vote of thanks was then put to the meeting and heartily agreed to.

Mr. Scott-Moncrieff, in reply, said that the subject of drainage had an extraordinary attraction for those who were enthusiastic on the subject of drains. In answer to Mr. Seth-Smith's question as to what was being done to solve the problem of sewage ventilation so as to relieve the tension of the alternative of using soil pipes, there was Mr. Shone's ingenious system of sewer ventilation, which had been tried by the very able and painstaking City Engineer of Leicester. Both as to cost and the prospect of success that system seemed to be a better alternative than doing away with the disconnecting trap, which he thought architects ought to protest against on behalf of their clients. The difficulties which the unfortunate architect had to deal with depended largely on the amount of land available, and the problem of satisfactorily dealing with the sewage of a country house on a small area was a most difficult one. Unless some such system as Dr. Poore's could be adopted for a small country house, the ordinary system for which was the cesspool, the problem was, to all intents and purposes, unsolved, and he sympathised with architects, especially if they had an unreasonable client who had great ideas about certain systems. As to the use of the earth closet and the earth system generally, there was a great deal to be said for it. Taking the most advanced views on the subject of sewage disposal, there was a great deal to be said for it so far as the closet itself is concerned; but the architect was still confronted with the difficult problem of sink and bath waste, and that was often as difficult to deal with as the sewage itself. The earth closet certainly did not cope with these wastes, and it came to this, therefore, that in a neighbourhood sufficiently closely inhabited to justify it a public system of drainage was the best solution for all difficulties. In any village community there was no doubt that for the comfort of each householder it was far better to have some common system into which to discharge the drainage—a common sewer put down at the public expense, where the responsibility of the householder ended and the public responsibility begun. He thought that architects would do well to state that view to clients whenever they found themselves in difficulties, because there was no doubt it was the best and most reliable means of giving satisfactory results. The system he had spoken about as having been adopted in a large country house in Berkshire gave a very pure effluent and was very efficient. When he referred to leaky drains he had in his mind cases in which the amount of leakage was very small; that was to say, where it leaked about a pint of water from the entire drain with a fall of perhaps only half an inch in a gully. What was an architect to do in such a case? Was he to condemn the whole of the drains in which the leakage was so small? And, if not, what were the chances that some expert would come along and do so without hesitation, throwing the onus upon the architect for not knowing his business? The remedy he suggested was cast-iron drains, although he knew that the architectural profession had kicked against them for many years; and he suggested them, not because of the merits of cast-iron *per se* as against earthenware—earthenware being really a better material—but because they got over all trouble as to leakage. A cast-iron pipe ought certainly to be watertight. As to an oxidising filter-bed without air, that was a contradiction in terms. There must not only be air in a filter-bed, but ample air. As to how far a cesspit was justified, there were cesspits and cesspits, and there were extraordinary cesspits into which sewage had gone for years with any cleaning out and without requiring to be cleaned out, though those were exceptional cases. The "cultivation" tank was a sort of cesspit, but it had certain advantages as compared with a cesspit, because it was not only much more efficient, but because the effluent obtained, although not perfect, was one which did not lead to pollution when it came into a well aerated stream, the volume of which was sufficient; whereas that would seldom be the case with a cesspit. As to air flaps, they often gave trouble; but a small expenditure on a new flap was not a serious matter to a client who had things properly attended to. One of the faults of the existing flap was that it had not a long life, and, in the second place, it was apt to get out of order from dust and dirt, etc. If the client was anxious about his drains he would not be put to much expense to keep his mica flaps in good order by having a new one when necessary until some more effective device is discovered; a flap when it worked well was not a faulty thing, but a fairly good one. There was a difficulty in dealing with an intermittent flow, and it was a disturbing element no doubt in all bacterial sewage systems; but, in filtration, intermittent discharge, he had always maintained, was an essential condition of success—that was to say, in order to obtain the best results. In his Ashtead experiments he found that the distribution of ordinary domestic sewage should not take place over the filtering material without intervals of seven minutes. It was certain that in these bacteriological systems the element of time was an important factor; the organisms required time to carry on their functions, and it was reasonable to believe that between each discharge of sewage there should be sufficient time for the organisms to do their work. The contact system failed to realise these factors, and he thought that was the general opinion now amongst those who were capable of forming a judgment from long experience. Some reference had been made to Mr. Dibdin's slate beds. Mr. Dibdin had been an able pioneer of the system, and his name was a household word among sewage experts. But there was one claim which had been set forth with regard to the work which was done by these slate beds which he thought was not justified. He had no doubt that after an indefinite time—it might be months—the sludge or slurry on the top of the slates might not be more than 2 in. thick, frequently less than that. The deduction which had been drawn from this by Mr. Dibdin was that all the solids that had passed over or through the bed had been disposed of owing to the slates and to their being sometimes full and sometimes empty and exposed to the air. But if they made an experiment, and put sludge on slates, they would find that under no condition could more than about 2 in. be got to rest on the slates; and he thought that a more reasonable supposition was that each slate was capable of carrying only a certain amount of sludge, and if the time were two years or thirty there would never be more than about 2 in. He did not think that Mr. Dibdin was justified in thinking that the 2 in. were due to the activity of his slate beds. [Mr. R. A. Dibdin: If the solids slip off the slates into the effluent and are not allowed to enter the contact beds, what does Mr. Scott-Moncrieff think becomes of them?] The solids slid off the slates. [Mr. Dibdin: What becomes of them?] They slid off the slates, and for the most part passed into the contact beds unless prevented by some intermediate process. As to distributors, there were many of them, and the Fidian gave good results. It had given results comparable to one which he had designed for the town of Hanley. It had been carefully considered by a Committee of the Royal Sanitary Institute, and he thought it performed its work fairly well; and it had this advantage, that moving very slowly it gave an interval of several minutes in ordinary cases between each of its rotations and between the discharge over any particular point. As to Mr. Norman Shaw's system of discharge straight from a valve closet into a hopper head, it had the same effect on the opinion of the average householder as upon the President, who seemed to have heard of it for the first time. The system had not been adopted generally, though Mr. Norman Shaw had adopted it in his practice. Though it seemed unreasonable to discharge closets into a small soil pipe, the practice had not been a cause of nuisance.

The meeting then terminated.

The next meeting will be held on the 19th inst., when Mr. C. Reginald Enock, F.R.G.S., will read a paper on "The Architecture of the Incas of Peru." On the 20th inst. a visit will be paid to Tilbury to a new Orient steamship, in the decoration of which Mr. A. N. Prentice has been concerned.

LONDON MASTER BUILDERS' ASSOCIATION.

A SPECIAL Council meeting was held at 31 and 32, Bedford-street, Strand, W.C., on Thursday, November 4, the President (Mr. F. G. Rice) in the chair. The meeting was largely attended, and much interest was displayed in the various subjects submitted for consideration.

The "proofs" of the pamphlet about to be issued were considered and instructions were given as to their circulation. A question arose as to the radii observed by the London County Council and the London Master Builders' Association; twenty miles from Charing Cross being adopted by the former body as its limit, while the latter body had a radius of twelve miles from the same centre as set out in the working rule agreements with the different trade societies. Eventually the Council decided to adhere to its own limitations and to limit its operations to the twelve-mile radius.

A discussion on the work of the Organisation Committee took place in which Mr. F. Higgs (Chairman of that Committee), Mr. G. Bird Godson, Mr. Frank May, Mr. Wr. Lawrence, jun., Mr. John Garrett, Mr. Ernest J. Brown, and Mr. H. W. Horner took part.

Mr. G. Bird Godson referred to the question of tendering without quantities being supplied, and to the hardship imposed on builders by having to take out their own quantities. He suggested that the matter be ventilated by deputations from the London

Digitized by Google

Master Builders' Association to wait upon the Royal Institute of British Architects and other professional bodies concerned. Mr. Ernest J. Brown gave the views of the National Federation, and said it was a matter which every effort would be made to remedy. The Council fully sympathised with Mr. Godson's views, and determined to ask the Royal Institute of British Architects and other bodies to receive a deputation. The resolutions passed at the conference with the Quantity Surveyors' Association on October 13 last had been sent to the members of the Council, and it was resolved to send the following to each member of the Association. The discussion on it was entered into by Mr. Ernest J. Brown, Mr. Frank May, Mr. W. F. Wallis, and others, and it was resolved:—

"That the Conference disapproves of the practice of asking for tenders in competition for works of a substantial value without quantities, prepared by a fully qualified Quantity Surveyor, being supplied, and is of opinion that such quantities should be supplied in all cases when competitive estimates are invited for works expected to cost 500*l.* and upwards."

A letter advocating the preferential employment of registered plumbers was read and the views entertained and expressed upon much the same subject by the Institute of Builders were given. The Council was of opinion that the persons engaged should be judged by their practical and not by paper qualifications.

THE CRYPT OF THE GUILDHALL.

WE referred in a Note in our last issue to the fine mediæval crypt of the Guildhall, which it is now proposed to turn to the uses of a museum in connexion with the existing Guildhall museum.

We now give a view of the interior, from a photograph kindly lent to us by Mr. Sydney Perks, the City Surveyor.

PICTURE EXHIBITIONS.

THE FINE ART SOCIETY.

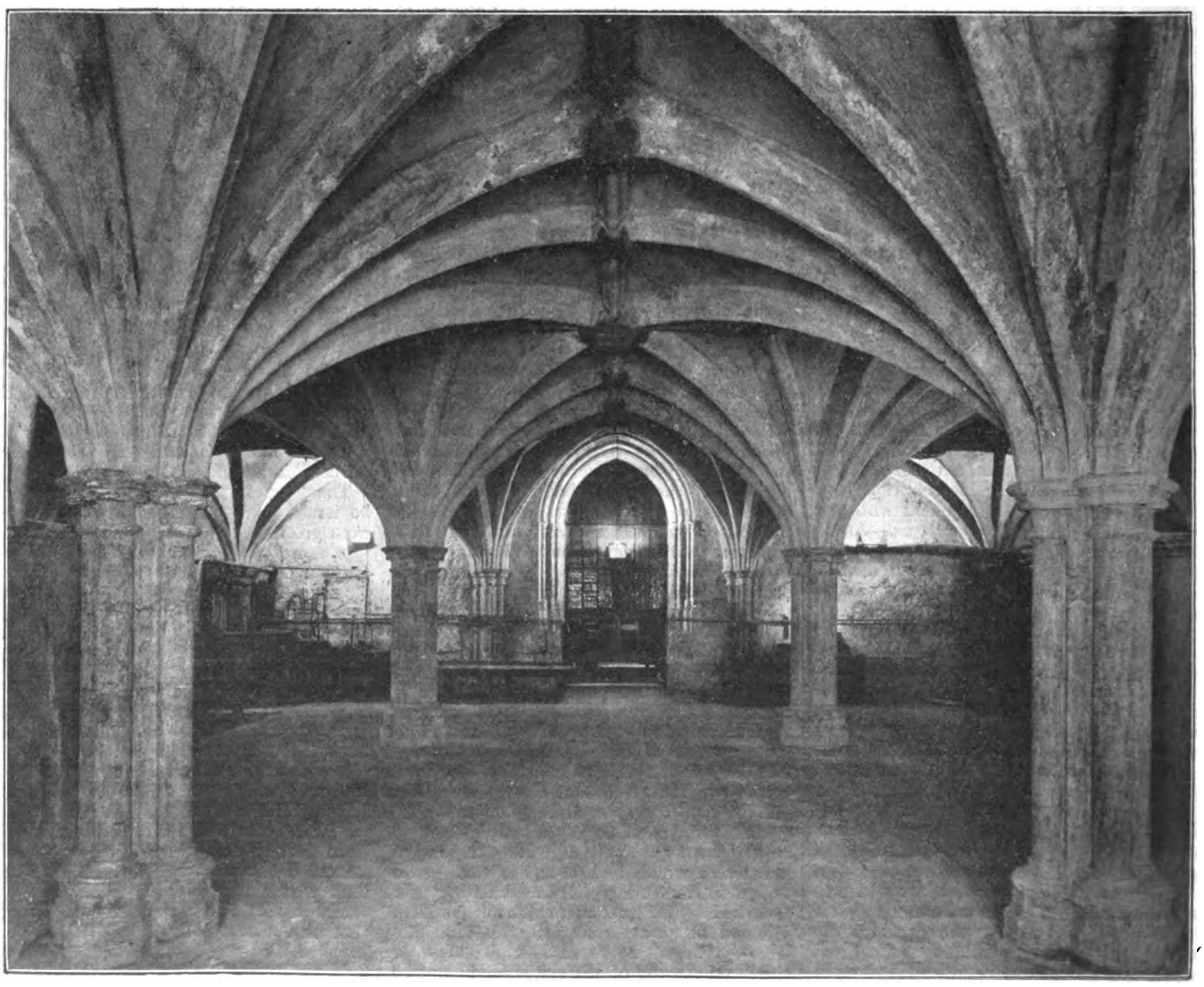
WE have not heard before of "The Society of Country Painters," who hold an exhibition of their works at the Fine Art Society's Gallery; the twelve members are nearly all well-known artists, but we do not see the point of their title, unless it signifies that they are painters who live in the country. There is a good deal of interesting work in the collection, though the members of highest reputation, such as Mr. Tuke and Mr. Arnesby Brown, are not represented by their best work. It is, in fact, mainly an exhibition of sketches and studies. Mr. Kelsey's small sketches of shipping are very good in colour, "Fishing Boats Becalmed" especially, and his "Wall-flowers" is equally good in that respect. We like very much H. L. Norris's water-colour with a distant view of Salisbury Cathedral, and "A Woodland Road" and Mr. Adrian Stokes's "Misty Morning," though the title hardly describes it correctly. Mr. Arnesby Brown's "The Meeting Place" is a good study of a curious old stone bridge; but we must protest against Mr. Ingram's two sketches professing to represent Saltash Viaduct, one of them called "Brunel's Bridge," a title which is a libel on Brunel. Both drawings, as representations of a structure, are ridiculous. It may be admitted that artists may seek to represent the picturesque aspect of an engineering work, rather than the mere structural facts, but they ought to represent a possible structure.

In the adjoining room is a collection of water-colours by Mr. W. Russell Flint, an artist of versatile powers, since his works alternate between highly-finished and quasi-comic illustrations to some of the Gilbert-Sullivan operas, and landscapes painted in a remarkably broad and free style, though with rather a sameness of manner. We do not care much for the operatic pictures, but some of the landscapes are admirable; the study called "A Glorious March Morning," fully answers to its title.

THE BAILLIE GALLERY.

The exhibition of the "Society of Painters in Tempera" at this gallery, includes, amid a rather mixed collection, some small works of considerable interest, especially in regard to colour, in which respect Mr. Balthus's "Bathing Girls" and Mr. Frampton's "A Noble Ladye" are very good. On the other hand, the Hon. Neville Lytton's "Three Graces," an important work as regards design, fails from bad colour, as also another clever design by the same artist. Two important pictures by Mr. E. R. Hughes have already been seen at the Society of Water-Colours, and are not tempera. The works exhibited tend a good deal towards decorative effect; Miss Lanchester's delicate little work, "The Sun Dial," is delightful in this respect; and there are some architectural subjects, including a fine large drawing, "The Spanish Church," by Mr. Sidney Lee, who has made a line of his own in architectural subjects. There is a good carved and gilded mirror frame, with a painted panel, by Mr. Stuttig, and a good piece of illumination and script writing, "Paternoster," by Mr. Mortimer.

Some of Mr. Detmold's drawings of



The Crypt of the Guildhall.

Digitized by Google

animals, in another room, as illustrations to Æsop's Fables, are very powerful, but he is rather apt to exaggerate his animals into imaginary types for the sake of greater effect.

NOTES FROM FRANCE.

THE Paris Metropolitan Railway Company have erected sixty-eight artisans' dwellings in the Quartier Bercy as houses for their employees; the architect is M. Augustin Rey, who gained an important competition for artisans' dwellings some little time since, when his design was illustrated in the *Builder*. The new cottages are pleasing in appearance; they each include on the ground floor a dining-room, ante-chamber, and kitchen, and on the upper floor two bedrooms and a dressing-room. The roofs are in ferro-concrete, flat, and form a terrace. Each house has a small garden.

M. Albert Ballu, architect to the Algerian Government, announces the discovery at Timgad of the remains of an ancient thermal establishment, and of a Christian monastery, with a baptistry and a large forecourt.

The remains of a Roman villa have been discovered at Chatillon-sur-Sevre, some parts of which are in good preservation, and show the remains of painted decorations surrounded with garlands.

The Académie des Beaux-Arts has awarded the Prix Bailly to a Parisian architect, M. Maistrasse, for his sanatorium at Berck-sur-Mer; and the Prix Roux to M. Martello, pupil of M. Paulin. The subject of the competition for the last-named was "A French Embassy Building in the Far East."

A Committee has been formed with the object of founding an art academy at some site in France, at which provision can be made for fifty art-students who have been unable to attain to the advantages of the Villa Medici.

A monument to the late M. Waldeck-Rousseau is to be erected in the Tuileries gardens. M. Marqueste is the sculptor. The monument consists of a kind of portico containing a portrait bust, around which are grouped various symbolical figures.

Some interesting wall paintings of the XVIth century have been discovered in the church of St. Gervais, at Gisors. They have been found on removing the plaster under which they had been preserved. It is expected that similar frescoes will be found to exist under the plaster in other chapels in the same church.

Excavations at Arles, in connexion with the Marseilles and Rhône canal, have led to the discovery of some of the circular lines of seats of the ancient Roman theatre, as well as of a sarcophagus decorated with winged figures.

THE SURVEYORS' INSTITUTION:

PRESIDENT'S ADDRESS.

THE opening meeting of the new session of the Surveyors' Institution was held on Monday, at No. 12, Great George-street, S.W., when the President, Mr. Alexander Rose Stenning, delivered a Presidential address.

The minutes having been read and confirmed, Mr. Percivall Currey, Hon. Secretary, announced a number of donations to the Library and Library Fund, and a vote of thanks was accorded to the donors.

The President then presented the Gold Medal, annually awarded to the author of the paper which, in the opinion of the Council, is the best of those prepared for reading at the ordinary general meetings, to Mr. J. G. Head for his paper on "Giant London; the Solution of a Great City; Its Growth in Size and Value," read before the Institution in March last.* The President said the paper gave very interesting information as to the growth of London, and it must have taken a long time to prepare.

Mr. Head briefly replied, thanking the Council for the honour conferred upon him.

* See our issue for March 20

The President prefaced his address with an expression of sorrow at the loss sustained during the recess by the death of Mr. John Wornham Penfold. As Honorary Secretary during its early years, and later as Vice-President, Mr. Penfold did much to place the Institution where it stood to-day, and he was glad to say that their late Secretary, Mr. Julian Rogers, had promised to tell them more of those services by reading a paper this session on "The History and Development of the Institution." The Penfold Gold and Silver Medals, which Mr. Penfold founded in his lifetime, and the handsome legacy of 500*l.* which he had left to the Institution would keep his memory green among the younger members of the profession, while by the further legacy of 500*l.* to the Benevolent Fund he had continued an example of kindly generosity to the less successful members of the profession, which he (the President) trusted would be a stimulus and example to them all.

He was pleased to be able to record that the Institution continued to grow in numbers and in public estimation. Only recently its authority had received special recognition in Parliament by the association in the Finance Bill of its President with the Lord Chief Justice and the Master of the Rolls as the Committee to draw up the panel of referees and the rules for regulating the procedure of appeal under the Land Clauses. It was satisfactory to note that the Institution examinations had also received official recognition, for in a recent advertisement, which gave rise to some comment, the appointments were limited to Fellows of the Institution, not, he believed, because it was thought that members of the Institution must necessarily be more experienced than other professional men, but because by the Treasury rule civil servants were required to have passed a suitable examination, and that of the Institution was accepted by the Civil Service Commissioners as fulfilling this requirement.

The President then considered the subject of land. He said the profession were even more closely interested in land than some other classes, who, though just as dependent on it in the long run, were not day by day forced to consider it and deal with it, and their interest could not fail to have been quickened by the legislative proposals now under consideration. A wise policy of development meant prosperity to the profession, while whatever checked and hindered such development must *ipso facto* have an equally adverse effect upon them. Land could not be concealed and could not be transferred to happier countries where taxation of unearned increment was unknown. But the surveyor was concerned, according to the branch of the profession to which he belonged, in the management, sale, valuation or development, and the President dealt with the two main uses to which it could be put, viz., as the source of our nutriment or the site for our houses. He divided land into the two classes of "food land" and "dwelling land." He first considered some of the factors on which the value of land for the production of food or the erection of dwellings depended, and some of the consequences which were incidental to its conversion from food land into dwelling land.

The present tenure of land in this country was the outcome of generations of social advance, and was buttressed by the growth of the traditions of centuries. By whatever mode possession was obtained in the distant past, and however wrongly the claims of the State were set aside by the original possessors, it could not be denied that the present owners, in all but an infinitesimally small number of cases, paid in full for what they now enjoy. Confiscation by the State would be a crime, and purchase a gigantic folly. It might well be that the duties imposed upon holders of land in feudal times ought, transmuted into terms of modern necessity, still to attach to ownership of land. Such obligations, willingly recognised and amply fulfilled by good landlords, had to some extent been recognised of recent years by Parliament in measures such as the Agricultural Holdings Acts, the Small Holdings Acts, the Housing, Town Planning, etc., Bill, and others.

A factor, which bears intimately upon the value of land, and which was often overlooked by those who held the doctrine that the land belonged to the people, was that of the improvements which had from time to time been effected upon and actually incorporated with the land. Even if any justification could be said to exist for the socialistic doctrine, no one could contend with the smallest show of reason that the improvements in or upon it belonged to any but those who had made them or their successors in title.

For good or for evil England had been transformed from an agricultural into an industrial nation. The numbers employed in agricultural pursuits were given in the census of 1861 as 2,010,454; while in the census of 1901 that number has dwindled to 1,071,040. And the capital value of agricultural land had depreciated by about 900 millions sterling in thirty years. It was well when we boasted of England's industrial wealth to remember this tremendous set-off.

If the money, which under the Development Bill it was proposed to devote to the development of agriculture and forestry and to the improvement of communications, was wisely expended, it should be possible for a far larger proportion of our people to find profitable occupation on the land.

Dwelling Land.

As to dwelling land, like food land, it derived its value from what could be got out of it, but here the crop took the form of rent, and that crop would vary largely with the amount which had first been put into the land. It was true that the bare site commanded a yearly rent, varying enormously in accordance with the situation of the land and its nearness to the great industrial centres, but in the vast majority of cases the proportion of the rent of a dwelling which was due to the land on which it stood was relatively very small. And in addition to the mere cost of erection the builder had to incur further expense in the making of roads, the laying of sewers, and in the satisfaction of other demands of the local authorities. These costs might vary considerably in different localities and for different classes of houses, but the principle remained true that before much could be got out of the land a great deal had to be put into it.

The system of building leases, which played so large a part in the development of building land in this country had been hotly denounced by that school of reformers who seemed to believe that the experience of the past was worth nothing. That at the end of a long period, it might be sixty or 100 years, the owner of the land should become by agreement the owner also of the buildings upon it was described by them as rank robbery. But he thought they should all agree that unless and until the whole element of speculation was eradicated from all business, when few of them would care to indulge in it, the reversion of the buildings to the owner of the land was a rational and fair condition of leasehold tenure. The freeholder ageed to forego for a long period any chance of appreciation in the value of the site, and accepted a rent, well secured it was true, but small and in no way commensurate with the value which the land would probably reach after a few years. If such additional value did accrue to the land, the profit was taken during the whole currency of the lease by the original lessee or his successors in title, and till its termination the freeholder had no share in that profit. He was content to exchange his chances of immediate gain for the possible accrual to his children or his estate of a considerable future profit. On the other hand, the leaseholder was enabled for a small

Digitized by Google

fixed payment to exercise for a long period all rights of ownership over his plot of ground. Instead of sinking a large sum in the mere purchase of the site, he had full use of his capital for as long a period as he was likely to want it himself. It would not be to the advantage of the community if the owner was to be deprived of this future bonus. If the leasehold system was to continue the owner would naturally demand a rent in excess of what he was now willing to take, and the tenant's position would be worsened rather than improved.

Whether he owned the land or merely held it on building lease, it was plain that the man who provided the community with dwellings—and the normal increase of population alone meant a demand in this country for some 50,000 more dwellings a year—had to take big risks and incur heavy expenditure before he could get any return. Next to food and clothing man's chiefest need was a shelter overhead, and the great army which provided for this elementary want ranked next in point of numbers to the metal workers and the tillers of soil. In the census of 1901 the total number of males above ten years of age was estimated at 12,134,259, and the numbers of those employed in our chief industries were given as follows:—Iron and steel, 1,174,180; agriculture, 1,071,040; building, 1,042,864; textiles, 492,175; mining, 800,179. Thus one-twelfth of the total male working population of these islands was employed in this industry, whose raw material, land, the present Government thought it just to tax so heavily. Because some owners were fortunate enough to find their land increasing in value year by year without any labour on their part—though others found the value diminish in spite of every exertion they could put forth—therefore every building owner was to have taken from him one-fifth of any profit which might accrue to him on the land he developed, though no allowance was to be made for any losses he might incur. If so large a share of his profits are to be claimed by the State he must, to protect himself, raise his terms, so that the ultimate effect of the tax would be to make houses more costly. The immediate result of the Budget proposals had been to strike dismay into these men, accustomed though they were to considerable risks. Unable to foresee or calculate the whole of the risks they must run, they had chosen rather to lie idle, with the unhappy result that the whole building trade was paralysed, and many thousands had been thrown out of work. The borough surveyors of six important and representative towns had been good enough to furnish him with figures showing the houses built within the boundaries of those boroughs during recent years, and the approximate number of acres so absorbed by bricks and mortar.

	1906.		1907.		1908.	
	Houses.	Acres.	Houses.	Acres.	Houses.	Acres.
Brighton ...	—	—	189	8	148	7
Bristol	1,2 9	1·0	879	75	454	38
Coventry ...	—	—	1,275	35	1,084	30
Leicester ...	648	20	411	17	371	15
Liverpool...	2,453	1·5	2,342	100	1,850	75
Manchester	2,500	100	2,634	105	2,210	88

Although the figures of the present year were not available for purposes of comparison, those given bear testimony to the diminution of employment and the check to enterprise in the building trade which had occurred during the past year or two, and which must to some extent be attributed to the feeling of insecurity which had existed.

The land-taxers said that the tax on undeveloped land would force into the market a good deal of land which was now held up to the detriment of the community; and they maintained that building land was limited in quantity and the scarcity was artificially aggravated by those who had a monopoly of it. He believed this assertion to be untrue, and even if it could be substantiated, he did not think the remedy proposed was the right one. It was absurd to say that building land was limited in quantity while in every county there were thousands of owners willing, nay, even anxious, to sell. What was meant by the assertion was that certain owners on the outskirts of great centres of population were not willing to sell except at higher prices than were at present offered to them, and that some people were eager to obtain particular plots, which seemed to them specially eligible at less than the present market price. Even if here and there plots of land in thickly populated parts were withheld by their owners from the building market, it by no means followed that the community incurred any loss thereby. The more closely any district was built upon, the more desirable it was in the interests of health and sanitation that as many open spaces as possible should be maintained, and the longer the owners of such plots kept them open the better it was in nearly all cases for the neighbourhood.

On the 18th August last, Mr. John Burns in the House of Commons gave the following return of empty houses and tenements:—

London	42,500	Manchester	9,928
Birmingham	8,461	Portsmouth.....	1,652
Bristol	4,850	Sheffield	4,907
Leeds	6,875	Glasgow	17,000
Liverpool	6,900		

making a total in London and these eight great provincial towns alone of more than 100,000—that was to say about twice as many as were required each year by the normal growth of population in the whole of Great Britain and Ireland. These figures clearly showed that there was no lack of dwellings. If, as might be the case, these particular dwellings did not, from age, position, lack of sanitary conveniences, or other fault, meet the requirements of to-day, the true remedy was to be found in a quite other direction. What was quite certain was that the tendency of mankind at the present day to drift into certain vortices of activity led to an entirely unhealthy congestion of the population, and imposed upon them a crushing burden in the shape of rent. If building land was scarce, the remedy was to provide more of it, and no section of the community was more vitally interested than surveyors in the provision of this remedy and its right application.

Here and there great single employers of enlightened ideas, such as the Levers at Port Sunlight, the Cadburys at Bournville, had created new towns for their own special businesses, while at Letchworth an attempt was being made to achieve a similar success by the co-operation of a number of lesser individuals. Many firms had found it amply repay them to transfer their mills, factories or works from the crowded centres of population to the open country. At a single step they halved the gigantic expenditure in rates, obtained greater ground accommodation at a lower rent, and increased the working efficiency of their employees, who would now live within a few minutes' walk of their daily work, and under conditions as healthy as before they were harmful. Why should not this experiment be followed all over the country? Why should we not create new towns on more scientific lines than the old ones? It should be possible with a comprehensive map of the railway systems of the country and adequate information as to soil, water supply, and the nature of the chief industries in the neighbouring towns, to place one's finger on scores of sites throughout England where similar success would follow in the creation of new centres of population. He put it to them that this was the true remedy for overcrowding and racial degeneration. Many industries could be carried on with almost equal facility in any place where sufficient labour existed, and the means of access were adequate. Offer to such industries the opportunity of cutting down their working costs while adding to their working efficiency, and he ventured to assert that it would be eagerly taken. Population would mechanically transfer itself to the new centre, and we should witness a reversion to the old-time ideal of home industries, though established under modern conditions. The work would no longer be taken to the home, but the homes would have been brought to the work. If at the same time the provisions of the Town Planning Bill were honestly carried out, a noiseless revolution of the most beneficent kind would have been effected in the lives of our town dwellers. No amount of legislation would prevent the operation of the laws of supply and demand. So long as certain areas seemed to offer greater possibilities of gain, so long would the market price of sites in those areas continue to rise, no matter whether the owner be an individual or the State. Instead of the principle of subtraction, if we applied the principle of substitution, at once the pressure upon the more crowded districts would be eased. The scramble for the unwholesome one or two roomed tenements in the dingy slum would gradually come to an end. The profits now said to be unreasonably obtained by the freeholder would no longer accrue. The economic law, silent in its action and irresistible in its effects, would, without any of the machinery of legislation or the harsh inquisition of the tax-gatherer, effectively destroy the power of the harpy who speculates in the misery of his poorer brethren.

A hearty vote of thanks, proposed by Mr. D. Watney, seconded by Mr. G. Langridge, and supported by Mr. C. Munroe, was accorded to the President for his address.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

IT is proposed to establish a permanent building exhibition of materials, specialities, and fittings at 24 and 25, Hart-street, W.C., and the opinions of architects in London are solicited as to its desirability and utility. There is at present no recognised centre where an architect and his client can examine the various manufacturers' goods collectively with all practical information relative thereto at hand, and which embraces every description of building materials, fittings, and forms of construction, from actual sections of fireproof floors to samples of local bricks and stones, etc., throughout the country. Admission to the exhibition will be free to all architects.

SOCIETY OF ARCHITECTS:

SOCIAL EVENING AND PRIZE DISTRIBUTION.

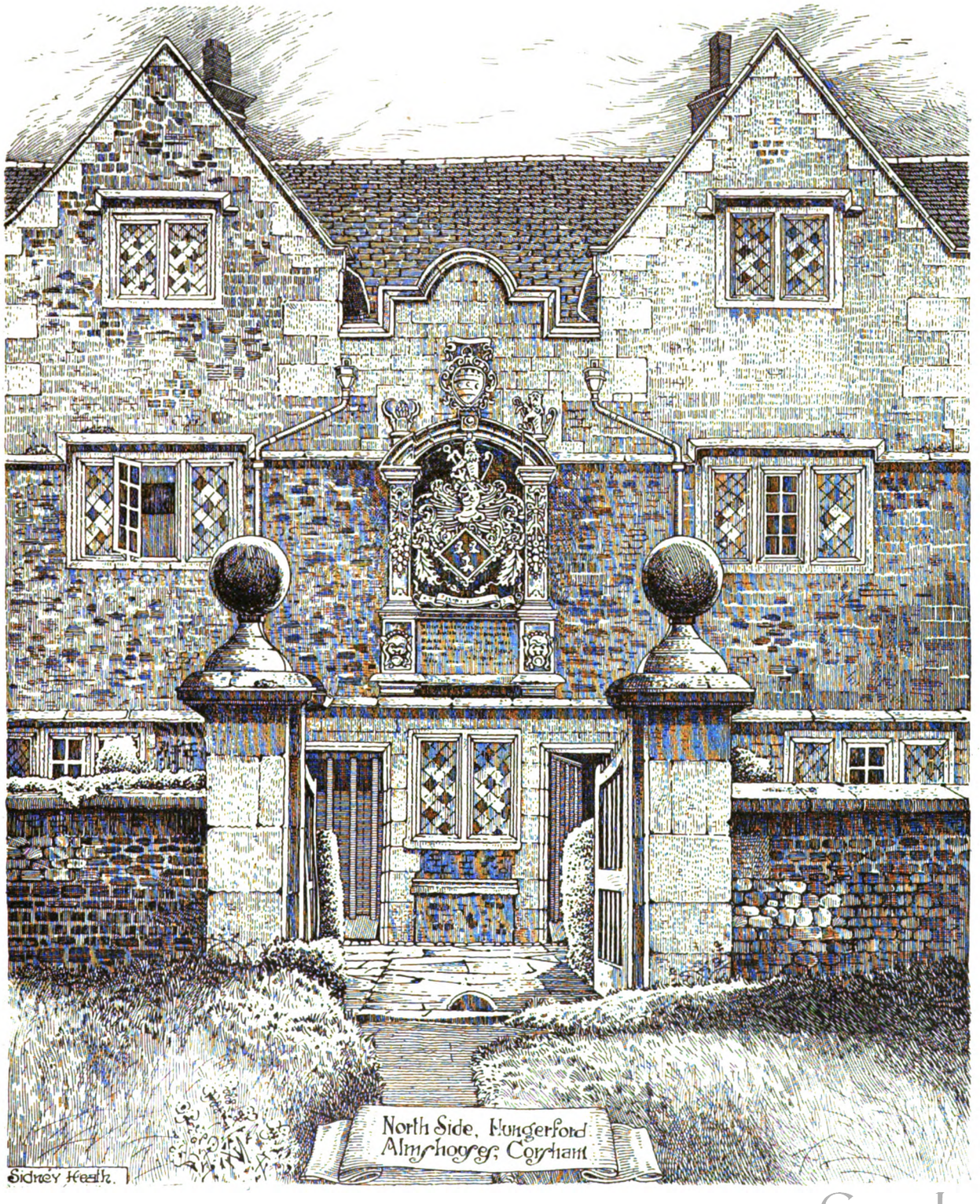
ON the invitation of the President of the Society of Architects, Mr. George E. Bond, J.P., a social evening was spent by the members and students at the St. Bride Institute, Fleet-street, E.C., on Monday, November 8. The proceedings commenced with the formal annual meeting of the students, with Mr. Bond in the chair, and the students elected their committee for the ensuing session. Mr. Bond then delivered a short address in which he pointed out the advantages offered by the Society of Architects to its students. The walls were hung with a large number of drawings representing the work submitted for the travelling studentship of 1908 and 1909, the work done by the winners of the travelling studentship and of the scholarship, and some of the work done during the sketching visits of the past summer. Of these there are some calling for particular notice. A very excellent design for a secondary school was submitted by Mr. C. H. Hudson, who received the first award of 25*l.* and the Society's silver medal. The sketches made during his visit to Oxford were also of considerable merit. In a few of these there was a tendency towards over-elaborateness in the shading which contrasted with others in which the artist had adopted a bolder style

Digitized by Google

and a clear method of suggesting the effect of architectural ornament. The quality of the work submitted for the travelling studentship was so good this year that the Council of the Society awarded a special prize of 10*l.* to Mr. G. Ll. Evans. Some excellent sketches by Mr. Evans were also exhibited. Of the scholarship work there were a number of sketches by Messrs. H. F. Trew, F. M. Maddox, and J. R. Lenthart showing considerable promise. This scholarship is open to the younger students, and it must be said that the students had all fallen to some extent into the young students' error, namely, that of producing "woolly" shadows. The defect is due to the incomplete mastery and the not too full appreciation of the limitation of the medium in which the sketches were made. A praiseworthy item of the exhibition was the set of sketches of St. Albans Abbey, Gatton and Merstham churches, and glimpses of old Rochester in pencil and crayon by Mr. J. T. Westbye, made during the students' Saturday afternoon sketching visits. Mr. Westbye carried off the President's prize for this work. Among the other interesting exhibits were some colour sketches in Belgium by Colonel Leslie, R.E., and a collection of photographs by Mr. B. R. Tucker and Miss May Hammond. The prizes were distributed by Mr. Bond after the interval, during which light refreshments were served. A selection of music was performed during the evening by Misses Edith Buchannan, Evelyn Power, and M. Burge, and Messrs. A. O. Butler, Albert Sweeney, and Haydon Pearson.

THE NORTH SIDE, HUNGERFORD ALMSHOUSES, CORSHAM.

THE north side of Lady Hungerford's Almshouses, at Corsham, erected in 1672, differs materially from the west front (a drawing of which appeared in the *Builder* of September 12, 1908), for whereas the latter contains the fine entrance porch, rich in heraldic sculpture, and the windows of the hall, the former is given over to the separate tenements of the almsfolk. A low wall shuts off the building from the road on both north and west sides, and encloses a stone-flagged court from whence access is obtained to the various dwellings. The walls are built of rough stones and ashlar, while such uncompromising details as rain-water pipes are here treated in a manner that helps rather than detracts from the main constructional lines of the building. The gates and piers are similar to those of the west front, and were it not that a small portion of the surrounding ornament has been omitted, the same remark would apply to the highly elaborate panel inserted in the wall, which, together with its western companion, must certainly rank among the most beautiful pieces of Renaissance sculpture in the country. Here we see the arms, crests, and mantling of the founder's family, above which is the demi-lion with an anchor, and here, too, is that most appropriate heraldic cognisance, the garb of wheat and



Digitized by Google

the sickle, brought together in such happy juxtaposition by the alliance of the Hungerfords, who bore the sickle, with the Peverells, the bearers of the garb. SIDNEY HEATH.

GENERAL VIEW, HUNGERFORD ALMSHOUSES, CORSHAM.

FOR many centuries the Hungerfords were the most powerful family in Wiltshire, with seats at Heytesbury, Farleigh Castle, Down Ampney, etc., and with manor-houses and estates in other places. Eventually they became reduced to a single small manor, Studely-Hungerford, of which nothing now remains but a farmhouse. Here the last of the family died, and was buried in the neighbouring church, where his monument may still be seen. Through failure of issue male the remnant of their once vast estates went by marriage to the Crewe family, where it still remains. The memory of this old family is preserved throughout the length and breadth of Wiltshire by one or other of their heraldic devices, the three interlocked sickles or the wheatsheaf and two sickles, still to be seen on many a panelled wall, many a window and tomb. The family burial-place of the Hungerfords was in Salisbury Cathedral, where they had two beautiful chantries, fully described by Hutchins. These were destroyed by Wyatt in 1789. The two great charities founded by members of the family, the one at Heytesbury (illustrated in the *Builder* of August 21), the other at Corsham, must have awakened feelings of gratitude on the part of hundreds of poor old men and women who have benefited by the charitable deeds of a family, every member of which is long since dead and buried.

The accompanying illustration will convey some idea of the charm of this many-gabled stone building at Corsham, which, except for the insertion of a few XVIIIth century windows and the addition of one or two chimney-stacks, must be exactly as originally built. There was once a free school attached to the foundation, but this portion of the charity has fallen into abeyance. The view given is of the north and west fronts, the latter comprising the entrance-porch and hall windows, etc., the former the separate tenements of the inmates. Both fronts exhibit tablets lettered with the following commemorative inscription:—

"This Free School & Almshouse was founded and endowed by Margaret Lady Hungerford, relict of Sir Edward Hungerford, Kt. of the Honorable Order of the Bath, daughter and co-heire of William Halliday, Alderman of London, and Susan his wife, daughter of Sir Henry Row Knight and Alderman & Lord Mayor of London."

The date of the building is usually given as 1672, the year no doubt of its completion and opening, for the tablet on the north front bears the date 1668. It is surely worthy of note that this XVIIth century charity, with its air of spacious planning, nobly-proportioned rooms, cosy tenements, and solid walls, was not erected as a manorial residence or for rent-paying tenants, but merely as a home and shelter for six destitute old women. Moreover, the survival down to the present day of hundreds of similar institutions makes it clear that, however much they may have suffered during the years immediately following the dissolution of the monasteries, the lot of the needy old folks during the succeeding centuries was not always an unenviable one.

There is little doubt that the four pollarded willows skirting the wall of the west front are solitary survivors of a belt of similar trees that formerly sheltered the building on both sides. They bear evidences of great age, and may well be as old as the structure they still help to protect from the fierce rays of the summer sun and the devastating storms of wind and rain that, gathering force on the western seaboard, periodically sweep over the exposed downs of Wiltshire, Somerset, and Dorset. An illustration of the west front of this fine old foundation appeared in the *Builder* of September 12, 1908, and the north front is shown on page 525.

SIDNEY HEATH.

NEW BUSINESS PREMISES, KINGSWAY, W.C.—Messrs. L. & C. Hardtmuth have decided to erect new premises for themselves in Kingsway. The erection will be commenced shortly, and the work will be carried out from the designs of Mr. J. S. Gibson, the builder being Mr. Jas. Carmichael, of Wandsworth.

NORTHERN ARCHITECTURAL ASSOCIATION.

THE Association held its opening meeting of the session on Wednesday last, when the President, Mr. G. T. Brown, F.R.I.B.A., delivered an address. We extract from this the following passages dealing with special subjects of general interest:—

"I think the time has arrived when, acting in the best interests of the profession, some greater caution than that which at present exists should be exercised in taking into our ranks as students those who perhaps have not realised the responsibilities which from the first devolve upon all who decide to take upon themselves the necessary duties connected with the practice of architecture. The present-day tendency is of course to endeavour to get a class of men of higher educated powers into every profession, and I think the result of that tendency is to be seen in the higher level to which the practice of our art is advanced, helped very largely by the greater educational facilities which exist for the youth of to-day, facilities which, it should be borne in mind are the result of the efforts of the Institute assisted by this and similar societies. In all professions, but particularly in that of architecture, it is essential that none but those with a good preliminary education should enter its ranks, or there are inevitably some to be left behind in the struggle for the survival of the fittest. It becomes therefore a matter for serious consideration whether we should not take steps to ensure that no one shall be admitted as a student to our Association unless he has already passed the preliminary examination of the Institute or some equivalent. I do not think this is too much to ask in the present overcrowded state of the profession; it would probably have a salutary effect on its future condition and would act the more rapidly if such step could be jointly taken by the various provincial societies in all parts of the kingdom.

Charter and Registration.

In speaking to you a year ago I outlined the position of affairs with regard to the movement in the Institute which had resulted in application for a new charter being made to the Privy Council. That charter has now been granted, and I am sure you will join

Digitized by Google

with me in congratulating the Institute in carrying out quietly and unostentatiously the early stages of what is the most important event in the history of the profession during recent years. Following the granting of this supplementary charter, the by-laws of the Institute were discussed, and amended so as to give effect to and to conform with the supplementary charter. These by-laws have now been submitted to the Privy Council for final approval, and on their return it is expected, by ourselves and others who have agitated more or less for many years for registration, that the Institute will not pause in the work to which they have put their hands, but will proceed with the new Bill to which we are looking forward, and from which we are expecting a great deal.

The first principal change which will occur through the granting of the supplementary charter will be the creation of a new set of members of the Institute, termed Licentiates, who shall be architects of over thirty years of age, who have been either engaged as principals for at least five successive years, or who have been engaged for ten years in the practice or study of architecture.

The second change will be the formulation of the curriculum for architectural education, in connexion with which it is important that students and associates should note that after 1913 no one will be admitted to the final examination for associateship unless they have passed through a course of study in accordance with such scheme or curriculum and passed certain examinations in relation thereto, or proved to the satisfaction of the Board of Education that they have been properly trained as architects.

I have observed a tendency among some of the various critical references to the new class of licentiates to somewhat belittle the idea. The suggestion is after all a serious attempt by the Institute, after much consideration, to get included in its membership those of any repute who are practising or who are connected with the profession. It is the first step towards the inclusion of all those who are not at present connected with the Institute, and I hope, when the revised by-laws are approved and the licentiates' class thrown open, that all will avail themselves of the opportunity thus afforded.

As I mentioned last year, it has been found a most difficult matter to unite all classes in the profession in order to obtain registration, and the step-by-step method which has been adopted by the Institute, of which this is part, should have the support and assistance of us all, as the ultimate results will be the protection of the practice of architecture from the intrusion of any ignorant or enterprising individual who cares to put up a brass plate, and practise to the disrepute of the profession at large, and often to the exploitation and detriment of the general public.

Architectural Copyright.

An important matter which has recently been under the consideration of the architectural profession is the question of the inclusion of works of architecture in the protective clauses of the Copyright Act. Certain changes in the law, so that it should be brought into uniformity with the revised Convention of Berne signed last November, have recently been under the consideration of a Committee of the House of Commons, and the Institute Council appointed Messrs. J. W. Simpson and J. Belcher to represent them before the Committee appointed to examine and report on the matter. Briefly, the effect of the revised Convention being ratified by Parliament would be to secure to their authors the ownership of the drawings and diagrams from which buildings are erected, and prevent the wholesale copying of original designs of buildings which there is ample evidence very frequently takes place.

It is most desirable that, as in the case of literature, music, sculpture, and painting, the rights of the architect to the intellectual property in his original designs should be recognised. The law as it stands at present with regard to the ownership of drawings, by the decision of a case in the Court of Appeal in 1905 (Gibson *v.* Pease), is that the client may demand not only the whole of the drawings and specifications, but also that, if he wishes it, the studies and detailed calculations should be handed over to him, and there is nothing to prevent his making what use of them he pleases, even to the application of them in carrying out other buildings, without the architect receiving any compensation for them whatever.

Cases are known where work such as cottages or small houses has been ignorantly copied by speculative builders, to the discredit of the reputation of the original architect. There are also instances of plans lodged with local authorities having been copied by members of the staff for various purposes, and many architects have had actual experience of such things as work carried out having been reproduced later in an unauthorised way, in which the detail and general effect of the original has suffered considerably.

Means are taken in other countries to protect the interests of the architectural profession, and it is hoped that a Government Bill will be introduced at an early date to deal with the matter. It is gratifying to know that the Institute is taking active steps for the purpose of protecting as far as possible the interests of individual members of the profession, which would be difficult to achieve if attempted in any way except by the officially recognised body."

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—Sanction was given to Deptford Borough Council to borrowing 9,221*l.* for paving works, and to Islington Borough Council to borrowing 4,510*l.* for electric lighting.

Tribunal of Appeal.—The Building Act Committee reported having had under consideration a letter from the Home Office stating that the Tribunal of Appeal has requested the Secretary of State, in the exercise of the power conferred upon him by sect. 179 of the London Building Act, 1894, to fix for a further period the scale of remuneration of the members of the Tribunal, and asking for the observations of the Council on the subject. The scale laid down by the Secretary of State in 1895, and continued in operation from year to year until 1903, was, for each member, 3 guineas for the first hour, and 2 guineas for each subsequent hour of each day's sitting of the Tribunal. The Council has in previous years informed the Secretary of State that it was of opinion that the present rate of remuneration was sufficient. The Council reported that they saw no reason why that decision should be altered at the present time.

Mr. Collins remarked that people were not likely to take full advantage of a Tribunal which cost about 100*l.* a day.

The recommendation of the Committee that the scale of remuneration should be continued was adopted.

Tramways.—The following recommendations were agreed to:—

That the estimate of expenditure on capital account of, 44,070*l.*, submitted by the Finance Committee, be approved in respect of the construction, on the underground conduit system of electric traction, of the tramways from Streatham High-road *viâ* Mitcham-lane and Southcroft-road to Mitcham-road.

That the estimate of expenditure on capital account of 40,550*l.*, submitted by the Finance Committee, in respect of the trackwork, etc., for the reconstruction of the underground conduit system of electric traction of the tramway from Rainton-road *viâ* Woolwich-road, Albion-road, and George-street to Chapel-street, be approved.

That authority be sought in the session of Parliament of 1910 to enable the Council to construct the undermentioned new tramways:—

(i.) From Maida-vale *viâ* Kilburn-priory, Alexandra-road, Hilgrove-road, and Adelaide-road to Upper Avenue-road.

(ii.) From Canonbury-road *viâ* St. Paul's-road to Essex-road.

That authority be sought in the session of Parliament of 1910 to enable the Council to reconstruct the undermentioned tramways:—

(i.) Highgate-road.

(ii.) From City-road *viâ* East-road, New North-road, Canonbury-road, and St. Paul's-road to Highbury-corner.

(iii.) From Baring-street *viâ* Southgate-road, Mildmay-park, Newington-green, and Green-lanes to Seven Sisters-road, including the construction of a diversion line along a new street to be formed between New North-road and Southgate-road.

(iv.) From Essex-road *viâ* Ball's Pond-road, Dalston-lane, and Graham-road to Mare-street.

White Hart-lane Estate.—The proposal to spend 56,788*l.* in respect to the erection of cottages on the White Hart-lane estate, mentioned in our last issue, was agreed to.

Improvements.—The recommendations of the Improvements Committee, printed in our last issue, were agreed to.

Smithfield Archway.—The Local Government, Records, and Museums Committee reported as follows:—

"On December 22 and 23, 1908, the Council decided to make a donation of 50*l.* towards the fund inaugurated for the purchase of the superstructure of the archway leading to the church of St. Bartholomew the Great, West Smithfield, so as to preserve the historic interest and architectural beauty of the archway, subject to the Council's contribution not being paid until the remainder of the money required to complete the purchase had been secured. We are advised that the conditions laid down by the Council have been complied with, and that the contribution may now be made."

Prince Henry's Room.—During the three years ended July 25, 1909, the number of visitors to Prince Henry's Room has been 4,978, 5,678, and 8,344 respectively. The total number of visitors for the first three years during which the room was open to the public has therefore been 19,000.

Tender for Lime.—It was agreed that, subject to the result of the usual inquiries being satisfactory, the tender of Mr. L. Sommerfeld, 138, Borough High-street, S.E., for the supply and delivery of 25,300 tons of lime into store at the Barking and Crossness outfall works, at the price of 13s. 9d. a ton, be accepted.

Richmond-hill View.—It was agreed that the estimate of expenditure on capital account of 500*l.*, submitted by the Finance Committee in respect of a contribution towards the cost of securing building restrictions on part of the estate known as "Meadowside," adjoining Marble-hill, subject to the erection of conservatories and greenhouses being permitted, if necessary, on the part of the estate between the house and the estate known as "Meadowbank," be approved.

Historic Houses.—The Council in May last agreed to grant to Mr. R. S. Charles an option until March, 1911, of taking a lease for ninety-nine years of the site of Nos. 59 and 60, Lincoln's Inn-fields, at a rent of 1,550*l.* a year. The option, however, has not yet been granted. The Improvements Committee now report that the houses are of considerable historical and architectural interest. It is generally agreed, they state that the house (which was divided into two a few years after 1750) was built by Inigo Jones for Robert Bertie, Earl of Lindsey. In 1700 the house was occupied by the Earl of Dorset, the poet, who was thrice Regent during the absence of William III. from the country, and it was also occupied by the Hon. Spencer Perceval, Prime Minister from 1809 to 1812. The façade is in the Renaissance style, of stone, since covered with stucco. The Committee are strongly of opinion that the building should not be destroyed until all other schemes for dealing with the premises have failed. The Council of the Royal Institute of British Architects has interested itself in the matter. The Committee recommended, and it was agreed, that the decision to grant Mr. Charles an option of taking the lease be rescinded.

Lack of Employment.—Authority was given to the Parks and Open Spaces Committee to undertake certain works at Battersea Park, Clapham Common, Ladywell Recreation-ground, Maryon Park, Parliament-hill, Hainault Forest, and Springfield Park, which will give employment to about 625 men for an average period of twenty weeks during the winter. The carrying out of these works will be offered to the Central Body on Unemployment.

The Council adjourned soon after six o'clock.

DEWSBURY INFIRMARY EXTENSION.—A nurses' home and a new operating-theatre have been built in connexion with the Dewsbury and District Infirmary. The nurses' home is a two-story building, giving accommodation for ten nurses, and has cost 3,000*l.*, while the operating-theatre has involved an expenditure of 600*l.* Mr. A. H. Kirk is the architect of the institution.

Digitized by Google

THE BUILDER

NOVEMBER 13, 1909.

TO CORRESPONDENTS.

"A STUDENT WHO WISHES TO RISE" (we will take the proposal into consideration).

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 10s. per annum, with delivery by *Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, NOVEMBER 12.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. E. Worth on "Scavenging, and Disposal of House Refuse." 7 p.m.

Egypt Exploration Fund (Royal Society, Burlington House, Piccadilly, W.).—Twenty-third ordinary general meeting. 4 p.m.

MONDAY, NOVEMBER 15.

Royal Institute of British Architects.—Mr. H. Inigo Triggs on "The Planning and Laying-Out of Public Places." Illustrated by lantern slides. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—7 p.m.

Liverpool Architectural Society.—Mr. F. E. G. Badger, Deputy City Building Surveyor, on "Reinforced Concrete and Steel Frame Buildings." Illustrated by lantern slides and drawings, etc.

TUESDAY, NOVEMBER 16.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. VII.—"Greek Architecture: the Hellenic Period." 4.30 p.m.

Junior Institution of Engineers (at the Royal United Service Institution, Whitehall).—Presidential address by Engineer Vice-Admiral Henry J. Oram, C.B., on "Recent Warship Machinery." 8 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy"—V. 6 p.m.

The Institute of Sanitary Engineers (Students' Lecture).—Mr. N. W. Hoskins on "Hydraulics and Hydrostatics." 7 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—7 p.m.

WEDNESDAY, NOVEMBER 17.

Northern Architectural Association (Students' Meeting).—Mr. J. G. Smith on Portland Cement Manufacture and Testing." 7.30 p.m.

The Institute of Sanitary Engineers.—Half-yearly general meeting and annual dinner, Holborn Restaurant, W.C. 6.30 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

FRIDAY, NOVEMBER 19.

The Architectural Association.—Mr. C. Reginald Enock, F.R.G.S., on "Architecture of the Incas of Peru." 7.30 p.m.

The Institution of Mechanical Engineers.—Mr. Herbert A. Humphrey on "An Internal-Combustion Pump, and other Applications of a New Principle." 8 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. L. Hastie on "A Framed Building." 8 p.m.

SATURDAY, NOVEMBER 20.

Royal Sanitary Institute (Meeting at Nottingham).—Discussion on "The Improvement of City Slums by Housing Reform and Otherwise." To be opened by Alderman T. J. Dabell, Chairman of the Health Committee. 10 30 p.m. Visits in the afternoon.

Junior Institution of Engineers.—Visit to foundation work of the new County Hall of the London County Council, Belvedere-road, Lambeth, S.E. 3 p.m.

Fifty Years Ago.

FROM THE *Builder* OF NOVEMBER 12, 1859.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

OPENING MEETING.

THE opening meeting of the members of the Institute, for the session of 1859-60, was held on Monday evening last, in their new premises, Conduit-street.

The chair was taken by the Right Hon. Earl de Grey, K.G., President.

There were about 220 members and visitors present, including Messrs. Cockerell, Hussey, T. H. Lewis, J. H. Stevens, Roumieu, C. C. Nelson, G. Vulliamy, Ashton, G. Morgan, F. Francis, Tite, Hakewill, Ferrey, Mair, Thomson, Garling, Papworth, J. Clarke, Brandon, S. Smirke, Godwin, Kerr, Horace Jones, Edmeston, Legg, Burnell, Colling, E. Nash, Morant, Houle, W. Slater, Fowler, jun., Sibley, C. H. Smith, E. W. Cooke, E. T. Parris, E. W. Brayley, Abraham, M. Nelson, F. P. Cockerell, J. Turner, T. H. Wyatt, M. D. Wyatt, S. Godwin, John Billing, Mylne, T. L. Donaldson, Cates, Rickman, H. Field, Stride, E. C. Robins, Christopher, Hayward, G. Foggo, T. D. Dighton, T. J. Pettigrew, C. R. Weld, H. S. Pownall, etc., etc.

The minutes of the last meeting having been confirmed, the following gentlemen were proposed as Fellows:—Messrs. George Edmund Street, Edwin Nash, William Allen Boulnois, William Slater, J. Peacock, G. Mayhew, James Fergusson. Messrs. C. J. Knight and Frederick Judge were elected Associates.

Several donations were announced, including a three-quarter-length portrait of the noble president by certain members of the Institute, and a pair of portraits (Kit-Kat size) of the Brothers Adams (?) from Mr. C. Manby. It was also announced that the sum of 238*l.* had been received on account of the removal fund. Thanks having been voted,

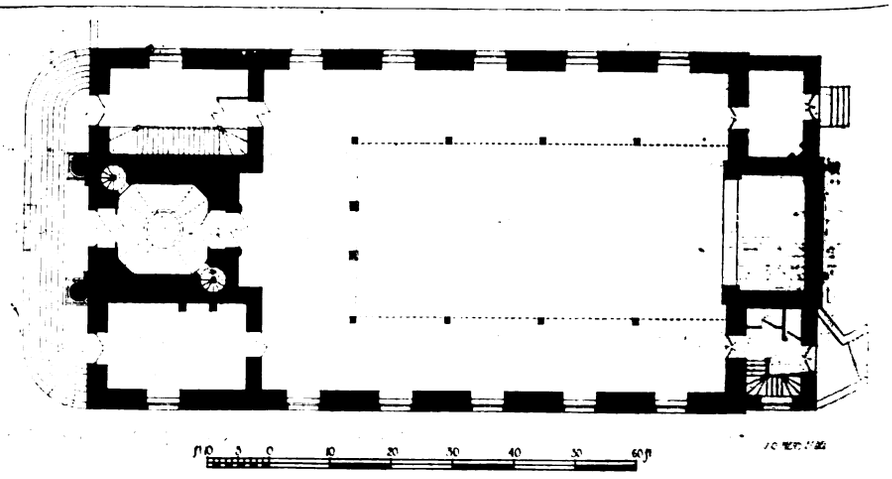
The President observed that the routine business which had just been disposed of showed that the society was going on, and in healthy operation. He was happy to say that he had now the pride and pleasure of presiding for the first time in a place in which the society could honestly say that it had a *locus standi* of its own. They had, it was true, a lodging for many years elsewhere, but they were liable to be turned out at any moment, for although they might have paid their rent punctually enough, others in the same house might not have been so regular, and it was within the limit of possibility that they might have been ejected without being able to help themselves. They had now, however, a local habitation of their own, altogether independent of those below them, and of the Architectural Union Company. They were, it was true, tenants in some sense of that company, but there was a community of interests between them, and there was no reason why they should not go on together for many years to come.

*** The list of names is interesting. Some are entirely forgotten now; others are still familiar. It is amusing to notice that the mistake of calling the architects of the Adelphi "Adams," instead of "Adam," is fifty years old; this venerable blunder is still as flourishing as ever, and we have constantly to correct it. The "many years" which the President hoped for have expanded to half a century; and before long we shall probably be chronicling the next step in connexion with the Conduit-street premises—their entire acquirement and extension by the Institute.—ED.

Illustrations.

CHURCH OF ST. GEORGE-THE-MARTYR, SOUTHWARK.

THE parish church of St. George-the-Martyr was built in Borough High-street upon the site of the former edifice in 1734–6 for 1,200 sittings, after designs by John Price, whose name is inscribed on the foundation-stone. Price died in 1736; by one account his son assisted him in completing the fabric. The cost was defrayed by an Act of 1733 (6 George II., c. 8) out of a grant of 6,000*l.* from the "Fifty Churches" fund. A large sum of money was expended upon the fabric just one hundred years ago; the organ, by Smith, has been often repaired and altered. In 1897 electrical lighting was installed by Messrs. Benson; the church was cleaned and painted throughout, and the ceiling was replaced with one executed in *carton-pierre* by Messrs. Bridgeman, after designs by Mr. Basil Champneys. The design represents cherubim singing the "Te Deum"; the decorated frieze contains the coat-arms of the City Companies who contributed to the cost, with those of London and Southwark. Two years afterwards the Necropolis Company removed a great quantity of human remains to Woking from the crypt by the Home Secretary's order. The crypt had been closed against interments in 1854; in 1855, by direction of the Home Office, the coffins, many of them of lead, were rearranged and covered with charcoal and gravel, but after a lapse of years insanitary conditions became manifest. The Vestry and the Metropolitan Public Gardens Association laid out the churchyard in 1881-6; a heap of Roman pottery and some ornamental terra-cotta work of *temp.* Henry VIII., which perhaps came from Suffolk House—see the *Builder* of May 10, 1902—were found at a depth of about 9 ft., during excavations made in the churchyard for the Long-lane and Tabard-street extension and widening scheme of the London County Council, who reconstructed the boundary walls and erected new entrances to the churchyard and recreation ground, 1902–5.



Plan of St. George-the-Martyr, Southwark.

Digitized by Google

St. George's appertained to the Cluniac Priory of St. Saviour, Bermondsey, by gift of the Thomas Ardernes, father and son, 1122. In his "Southwark Fair," painted in 1733, Hogarth depicts the former tower, with Kidman "flying" down a rope to the ground.* In that church were married Lilly the astrologer, and General Monk and Ann Clarges.

The design, though comparatively homely, possesses some good points. There is no make-belief about it; the brick is allowed to show itself on the front elevation in such a manner that it is made sufficiently plain that the question of cost was manfully faced by the architect in his design, and the effect is far better than if he had succumbed to the temptation to produce a frontispiece entirely of stone. The base of the tower is marked to the eye by a couple of engaged Ionic columns carrying an entablature with pulvinated frieze and segmental pediment. We could wish the urn removed from its present silly position on the crown of this pediment, and placed where the design really requires it (with the addition of one more), as a balustrade terminal on the returns. The view renders a further description of the tower superfluous. The interior is quite plain, and typical of its period; in fact "neat and commodious." The present ceiling, substituted about twenty years ago for the original one, is hardly successful, and is, moreover, in a very bad condition.

CHELSEA TOWN HALL.

THE illustration shows the eastern end, or pavilion, of the new municipal building lately erected in King's-road, Chelsea, in front of the town hall, built some years ago from the designs of the late Mr. J. M. Brydon.

The materials used in the portion of the building shown in the illustration are granite for the plinth and Portland stone above. Unfortunately the dome was not carried out, as, for some unaccountable reason, the authorities would not allow it to be put up, consequently the building as executed is incomplete and unsatisfactory to some extent.

The carving has been done by Mr. A. Broadbent, the general contractor being Mr. A. N. Coles, of Plymouth, and the architect, Mr. Leonard Stokes. The drawing was exhibited at the Royal Academy of this year.

* The picture, it is commonly stated, was burned in 1807 at Mr. Johnes's seat, Hafod, Cardiganshire. But in a letter in the *Times*, January 8, 1885, the late Sir George Scharf identified it in the Old Masters collection at Burlington House, where it was again exhibited last year by the Duke of Newcastle. *Cfr.* also the "Beauties of England and Wales," 1815, and the catalogue of the Manchester Exhibition, 1857.

DESIGN FOR AN AUTOMOBILE CLUB OVERLOOKING THE PARK OF A CAPITAL CITY.

THE very rapid growth of motor traffic during the last few years both for business and pleasure, particularly the latter, has created a new pastime which has been taken up by many with enthusiasm. It has developed a new means of transport which will in many cases supersede travelling by rail, when time is not the primary object of the journey.

A consequent necessity has arisen for the provision of clubhouses for the devotees of this sport in capital cities and large towns where members may meet together in social intercourse, and for the promotion and discussion of matters connected with the various branches of automobilism. It is probable that within the next few years many clubhouses will be erected for motorists to be used as headquarters when travelling from country to country.

The accommodation provided in this design is that found in any club of importance, with certain additions.

On the ground floor the most important features are the lounge, two floors in height with a barrel-vaulted ceiling, and with galleries on three sides. The dining-hall and smoking-room overlook both the front and back, and from these three rooms access can be obtained to the upper and lower terraces, which command extensive views over the park. Administrative rooms for the use of officers of the club, and where business connected with motoring, etc., may be transacted, are so arranged that they can be approached without entering the club proper, but are at the same time readily accessible from the club.

On the first floor are situated the upper part of the lounge and galleries with access to the balcony over the colonnade, committee-rooms, library, and reading-rooms, and suites of rooms for meetings and the reading and discussion of papers connected with automobile matters, and also a set of rooms to form a ladies' club, both of which have separate entrances from the street.

On the three upper floors accommodation would be provided for over 100 bedrooms, and a separate floor in the roof for the staff. The bedroom accommodation proposed is greater than is sometimes to be found in the larger club premises, but where international and frequent temporary visitors are to be expected, the more liberal accommodation is to be preferred.

In the basement provision would be made for a swimming-bath, Turkish-bath, billiard-room, and laboratory, and the kitchens and offices.

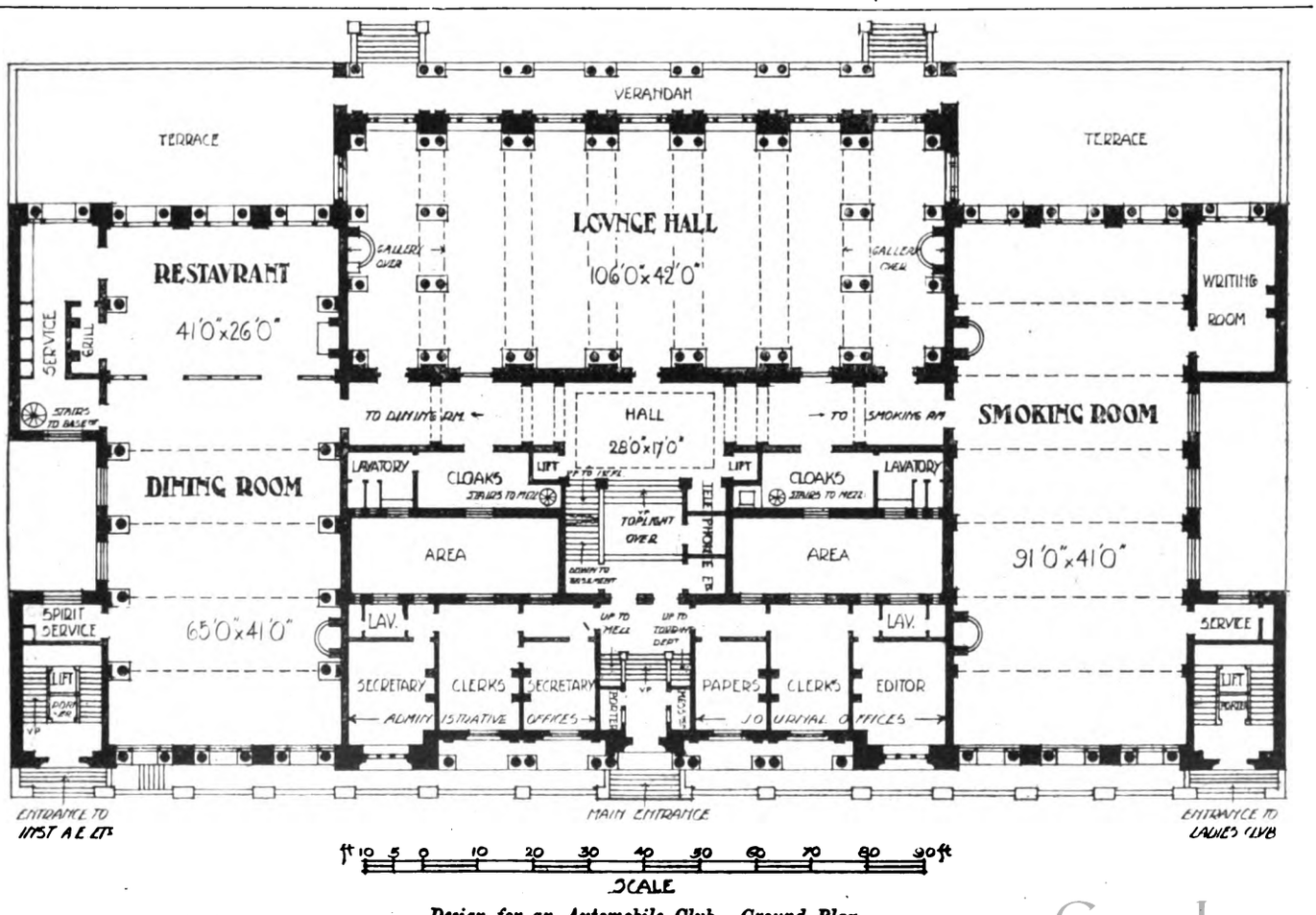
The materials proposed for the elevations are Portland or other stone and green slate roofs.

The perspective view shows the building as seen from the Park.

The design is by Mr. C. Worby Beaumont, and, though it is not a commission or a building carried out, we think it worth publication as a suggestion for a new order of club for which there will probably be a demand from time to time in the near future.

A GARDEN PAVILION.

THIS drawing, which was exhibited at the last Royal Academy, shows the pavilion which was originally executed as an exhibit at the last Building Trades Exhibition, to show the bricks made by Messrs. C. H. Norris, Ltd., of Erith. We remarked at the time on the excellent character of the design. Messrs. Norris showed excellent



Design for an Automobile Club. Ground Plan.

Digitized by Google

judgment in going to an able architect to design their exhibit, instead of contenting themselves, as many of the exhibitors did, with mere piled-up "trophies" of their materials.

The principal portion of the pavilion was carried out in Messrs. Norris's special broken-colour bricks, 2 in. thick, with wide mortar joints, the portico being paved with 12-in. square tiles.

Messrs. Godson & Sons were the builders, and Mr. R. Frank Atkinson the architect.

"BISHOPTHORPE PADDOCK," YORK.

THIS house, with stabling and coachman's cottage, occupies a nicely-wooded site near the Archbishop's Palace. It is built of 2-in. thick hand-made red bricks, and the roofs are covered with rich red pantiles. All external woodwork is of English oak, and the windows are filled with leaded lights, with wrought-iron casements. Internally the rooms are treated quite simply, with brown English oak finishings.

The general contractors were Messrs. J. & T. Biscomb & Sons, of York.

The whole of the work, including gardens, boundary walls, etc., was executed from designs and under the superintendence of the architect, Mr. Walter H. Brierley, of York.

The drawing was exhibited at the Royal Academy of this year.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Finsbury, East.—That the application of Messrs. Johns, Son, & Watts, Ltd., for an extension of the periods within which the erection of two external iron parcel carriers at the rear of Nos. 46 and 50, City-road, Finsbury, over the passageway leading from City-road to Bunhill-fields, was required to be commenced and completed, be granted.—Consent.

Hampstead.—A one-story bay window in front of a house on the south-eastern side of Barby-avenue, Hampstead, to abut upon the southern side of Greenaway-gardens (Mr. C. H. Saunders for Mr. J. Wilson).—Consent.

Islington, South.—An illuminated sign at No. 26, High-street, Islington (Mr. P. D. Morris).—Consent.

Kensington, North.—Porches and balconies at Nos. 7 to 29 (odd numbers only) inclusive, St. Quintin-avenue, Kensington, and the erection of porches at Nos. 3 and 5, St. Quintin-avenue, and Nos. 43 and 44, Finstock-road (Messrs. Trant, Brown, & Humphreys).—Consent.

Kensington, South.—Retention of an iron sign over the shop cornice at No. 189, Kensington High-street, Kensington (Mr. A. Sykes for Mr. J. Sainsbury).—Consent.

Paddington, South.—An addition in front of No. 20, Cleveland-square, Paddington (Messrs. Nicholson & Corlette).—Consent.

Wandsworth.—A one-story addition at the rear of No. 74, High-road, Balham, to abut upon the southern side of Caistor-road (Mr. J. Boot).—Consent.

Wandsworth.—A building on the southern side of Calbourne-road, Balham, to abut upon the eastern side of Mayford-road (Mr. W. Newton Dunn).—Consent.

Width of Way.

Kensington, South.—A building on the western side of a passageway leading from Kensington High-street to Kensington-court, at less than the prescribed distance from the centre of the said passageway (Mr. R. H. Kerr for Mr. J. Rossdale).—Consent.

Width of Way and Line of Frontage.

Greenwich.—Buildings on the northern side of Tuskar-street, the northern, eastern, and western sides of Woodland-place, the eastern side of Creed-place, the southern side of Trafalgar-road, the eastern and western sides of Fenton-street, and the western side of Miles-street, Greenwich (Mr. A. Griffin for the Trustees of Morden College).—Consent.

Lines of Frontage and Construction.

Battersea.—An iron building on the northern side of Lavender-hill, Battersea, westward of the post-office premises (Mr. E. J. Partridge for Mr. C. Bedworth).—Refused.

Finsbury, East.—A deviation from the plans approved for the erection of an iron and concrete gangway over the public way of Type-court, Finsbury, connecting Nos. 59 and 61, Moor-lane, at the second floor level (Mr. W. Hammond for Messrs. Jaeger & Co.).—Consent.

Width of Way, Line of Frontage, and Construction.

Islington, South.—The retention of an iron enclosure of a temporary character to a hand lift at the Home and Colonial Stores, High-street and Upper-street, Islington (Messrs. Gale, Durlacher, & Emmett).—Consent.

Alteration and Construction of Building.

Islington, East.—An iron and concrete covered way between Nos. 244 to 252, Seven Sisters-road, and Nos. 1, 3, and 5, St. Thomas-road, Islington, and a relaxation of the provisions of sect. 74 (2) of the Act, in respect of Nos. 1, 3, and 5, St. Thomas-road (Mr. H. Shepherd for Messrs. Garner & Somerford).—Consent.

Building for the Supply of Electricity.

Newington, West.—A deviation from the plans approved for the construction of additions to a generating-station at Penrose-street, Southwark, so far as relates to the bricking up of one of the window openings in the first story (Mr. A. Harrison for the Southwark Metropolitan Borough Council).—Consent.

Alteration of Building.

Westminster.—A modification of the provisions of sect. 70 of the Act, so far as it relates to the conversion of a granary into offices at the premises of the London General Omnibus Company, Ltd., Page-street, Westminster (Mr. D. Duff).—Consent.

Uniting of Buildings.

City of London.—The formation of an opening between No. 1, Hatton-court, Threadneedle-street, City, and the adjoining building westward (Mr. C. J. Jones for Messrs. Panmure, Gordon, & Co.).—Consent.—

City of London.—An alteration in the positions of openings in party and division walls at No. 31, Old Change, and Nos. 1A and 3B, Cannon-street, City (Messrs. Still, Wheat, & Luker).—Consent.

Kensington, South.—Rolling steel shutters to two openings between Nos. 111 and 113, Kensington High-street (Mr. F. E. Williams for Messrs. Derry & Toms).—Consent.

Alteration of Buildings and Space at Rear.

St. George, Hanover-square.—A modification of the provisions of sect. 41 of the Act, so far as relates to alterations at No. 36, Dover-street, St. George, Hanover-square (Messrs. Bannan & Rowe).—Consent.

Architectural Societies.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

An ordinary meeting of the Council of this Institute was held at 31, South Frederick-street, Dublin, on November 1, Mr. Batchelor, President, in the chair. A letter was read from the Dublin Commission (Irish Universities Act) thanking the Institute for the assistance rendered in the discussion of the question of architectural education with reference to the establishment of a Chair of Architecture. The house list for new Council was drawn up. The following resolution was passed:—

"The Council desires to place on record its sense of the loss the profession has sustained in the death of Mr. M. A. Hennessy. He joined the Institute in the year 1873. His professional work, chiefly in the south of Ireland, is well known and highly appreciated."

The proceedings then terminated.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

The first general meeting of the winter session was held on Thursday evening, November 4, at the Society's rooms, 10, Park-street, Leeds. Several new members and associates were admitted, and the minutes of the previous meeting were read and adopted. The President, Mr. Percy Robinson, F.R.I.B.A., in the chair, announced the results of the Society's annual competitions which, although not so keen as in previous years, had called forth work of a higher standard, the selection of sketches exhibited being particularly good. The prizes were awarded as follows:—

Silver medal and President's prize for measured drawings to Mr. P. de Jong.
Prize for design to Mr. P. de Jong.
Prize for sketching to Mr. J. H. Farrar.
Prize for construction to Mr. J. H. Farrar.
Prize for essay to Mr. F. Scatchard.
Halden prize for testimonies of study to Mr. F. L. Kruckenberg.
Sketching Club competition:—
Prize for best set of studies of ancient buildings awarded to Mr. G. H. Foggitt.
Prize for best set of sketches to Mr. P. de Jong.
Prize for second best set of sketches (consolation prize) awarded to Mr. C. T. Whiteley.

The remainder of the evening was occupied in an examination and criticism of the students' drawings by the members present.

The annual smoking concert and distribution of prizes was announced to be held at the Queen's Hotel, Leeds, on Thursday, the 11th inst.

Engineering Societies.

THE SOCIETY OF ENGINEERS.

The following is an abstract of a paper entitled "Some Observations on the Chemistry and Bacteriology of Sewage Purification," read by Mr. David Sommerville (Lecturer in Public Health, King's College, London) on the 5th inst.:—

The intention of the paper is to refer engineers to some fundamental principles connected with the purification of sewage. It is shown that bacterial action is effected through enzymes. The cell consists of colloids and crystalloids in common solution in water, and all cellular reactions are reactions in solution, and based on laws governing their velocities and the conditions of equilibrium. The living cell is an energy transformer, and in all its activities conforms to the requirements of the doctrines of the conservation of matter and of energy. Enzymes are catalysts, and under their influence it can be shown that for a single substance a undergoing conversion into two substances β and γ, the common type of action of enzymes, $\frac{dx}{dt} = k_1 (a - x) - k_2 (\beta + x) (\gamma + x)$ where a is the molecular concentration of the single substance, β and γ molecular concentrations of the two into which it is converted, and x the change in concentration in time t. Enzymes, unlike inorganic catalysts, are rendered inactive by rise of temperature. Enzymes are colloids, and as such subject to the laws governing the phenomena known as "adsorption." Enzymes are capable of reversible action, and consequently affect syntheses as well as dissociations.

Sewage is composed of a watery mixture of proteins, carbo-hydrates, fats and various inorganic matters. The organic matters exist in solution and in particulate form. Colloidal solutions are constantly encountered. Sewage is charged with bacteria and enzymes, and when of domestic type contains, in addition to air, water and soil organisms, dominant types indigenous to the human intestine. Sewage carries the organisms and enzymes of its own putrefaction. The chemical reactions of the putrefactive stage are closely analogous to those which effect the digestion of food-stuffs in animals. Protein dissociation occurs in two stages: primary—albumoses, peptones and peptides; and secondary—amino-acids. Reference is made to the constitutional structure of a few of the more commonly occurring amino-acids. The hydrolysis of carbohydrates and fats is simple when compared with that of proteins.

Most species of bacteria in sewage and soil are capable of forming ammonia from organic matter. Free nitrogen is liberated by some sewage bacteria and atmospheric nitrogen fixed by others. Certain bacteria reduce nitrates to nitrites and ammonia; others reduce nitrates and nitrites to NO and N_2O. Where unlimited oxygen is supplied nitrification predominates, but where oxygen is limited denitrification

Digitized by Google

appears. In certain cases it may be advantageous to transform as much as possible of the nitrates and ammonia into free nitrogen.

The presence of humus in soil adds to its nitrifying power, and beds performing nitrification poorly may have their activity increased by the addition of humus from other beds working normally. The bulk of the matters left on the filters remains unchanged for a considerable time. The sick sewage bed is like the sick man who overeats. The aerobic method of treating sewage has the best of it all the way round. Bacterial activity is by no means the only activity engaged in the purification of sewage. It is only an assumption that when a sewage is nitrified pathogenic bacteria have been destroyed.

Legal Column.

THE FINANCE BILL AND THE BUILDING TRADE.

THERE is so much common-sense good advice in the letter addressed by Mr. J. Howard Colls to the General Union of Carpenters and Joiners, and published in the *Times* of the 9th inst., that it is a matter for regret that it was not addressed to the Cabinet rather than to the carpenters and joiners. The occasion for the letter was a reply to an appeal on behalf of the unemployed in the above branches of the Union, and Mr. Colls in striking terms points out that much of the distress is due to the attacks that have been made on the class that has command of capital, which attacks have created such a feeling of insecurity and have caused not only a cessation of the work ordinarily put out by the public, but a stoppage of supplies from those who in the past have lent money on the security of land and buildings, and he instances the insurance companies. Mr. Colls also justly points out that more than half of the works undertaken by builders are not works of necessity but of luxury, and therefore this trade is especially susceptible to any influence which causes a feeling of insecurity and shakes the foundations of credit. Mr. Alexander Rose Stenning struck a similar note in his presidential address at the Surveyors' Institution when he said that the immediate result of the Budget proposals had been "to strike dismay into those engaged in the development of building land. They had preferred to remain idle rather than incur incalculable risks, and the building trade was paralysed." The building trade for some years past have been asking for bread and the Government has given them a stone which is likely to sink their craft. Taxation on development is a novel prescription for the encouragement of development.

WATER CHARGES.

The case of Metropolitan Water Board *v.* Mulholland (noted in the *Builder*, May 1 last), as decided in the County Court, has been carried to the Divisional Court. The Water Board were proceeding against the defendant in respect of water supplied to the hydrants in the King's Theatre, Hammersmith, under an agreement entered into between the defendant and the Board's predecessors, the West Middlesex Water Company. The defendant said that in 1907 notice had been given that the supply in future would be under the Act of 1907, and that under sect. 6 of that Act former agreements were put an end to. The Board contended that this only applied to the ordinary supply to dressing-rooms, etc., which was a separate supply, and the Court have held, affirming the County Court Judge, that the agreement in respect of the fire hydrants was not put an end to but was kept alive by sect. 45 of the Metropolitan Water Board Act, 1902, and sect. 35 of the Act of 1907. The former is a public general statute, but the latter is a local and private Act, which seems a matter which is to be regretted seeing the number of cases that have arisen under it and the difficulty the general public experience in referring to private Acts.

TUNNELLING UNDER A RAILWAY.

The case of the South-Eastern Railway Company *v.* Associated Portland Cement Manufacturers, noted in the *Builder* August 28 last, has been carried to the Court of Appeal. The defendants were assigns of a lease granted by W. M. Calcraft in 1884 of certain lands in Northfleet situated on both sides of the railway, with the right of working the chalk under the land, and by that lease it was provided that the lessees should have the rights and privileges which were possessed by the lessor under an agreement made in 1847 between the plaintiffs, the Railway Company, and W. M. Calcraft's father. That agreement contained the right under certain conditions to tunnel under the railway. The defendants were now seeking to exercise this right, but the Railway Company applied for an injunction to restrain them from making the tunnel under the railway on the ground that the agreement was indefinite, and that it offended against the rule against perpetuities. The Court below gave judgment for the defendants after a prolonged trial, and the Court of Appeal have affirmed this judgment and swept aside the legal technicalities relied upon by the plaintiffs. According to their decision no question arose as to perpetuities or the covenants running with the land, the original party, Calcraft's father, could have sued on the agreement, and the defendants as the assignees of his universal successor were also entitled to the benefit of the covenant as against the Railway Company, who were the original covenantors.

Trade Catalogues.

THE Simplon Manufacturing Company, of Carlisle, send us a catalogue of their specialities, comprising various extremely useful instruments, among which are protractor and adjustable set-squares and the "Simplon" patent rapid lining machine, enabling the draughtsman to execute any pitch of shading or section lining by shifting the blade to the required angle to shade cylindrical objects with perfect ease and accuracy, and to perform other work involving much labour when ordinary appliances are used. The Simplon combination drafting machine is an improved type of drawing-board, at the ends of which are machine-cut brass racks, for guiding a transparent celluloid straight-edge, taking the place of the ordinary T-square. The straight-edge can be locked in any position, leaving both hands of the draughtsman free for the manipulation of other instruments at either edge of the transparent blade. An adjustable set-square is included in the equipment of the apparatus, which has been largely taken up by architects in the north of England, and deserves to be more widely known. A neatly-designed and inexpensive form of lettering-square is another noteworthy instrument described in the catalogue.

Messrs. J. Carter, Sons, & Co., of Manchester, send us their catalogue of tools for engineers, blacksmiths, pipe-fitters, and others. Builders and structural engineers will find in this book particulars of numerous tools and lifting tackle useful in the workshop and on the site of works to be executed, and architects should note the complete range of hand-power lifts illustrated in the last few pages. The catalogue has an alphabetical index, which is always convenient to those who keep books of the kind for reference.

BOOKS RECEIVED.

THE BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND. By R. W. Billings. Part XVIII. (Edinburgh: E. Saunders & Co. 1s.)

LONDON COUNTY COUNCIL (GENERAL POWERS) ACT, 1909: Part IV.: Amendment of London Building Acts. Pp. 17. (B. T. Batsford. 6d.)

WESTMINSTER ABBEY. By Francis Bond. Pp. 318, (Henry Frowde. 10s.)

THE LIVES OF THE BRITISH ARCHITECTS; from William of Wykeham to Sir W. Chambers. By E. Beresford Chancellor. Pp. 323. (Duckworth & Co. 7s. 6d.)

BUNGALOW RESIDENCES. By Percival T. Harrison, A.M.Inst.C.E. Pp. 76, and 22 plates. (Crosby Lockwood & Son.)

Competition News.

WORKINGTON TECHNICAL SCHOOL.

We are asked by the Secretary of the Royal Institute of British Architects to mention, for the information of architects proposing to take part in this competition, that the Royal Institute of British Architects' Competitions Committee is in communication with the promoters with a view to the amendment of the conditions of this competition.

Correspondence.

"DRY ROT" IN BUILDINGS.

SIR,—Rot, when found in timber, is usually dry and the result of great age.

"Dry rot" is a misnomer, a contradiction in terms; a damp fungus grown in a few hours and destroying the strength of the timber on which it feeds; popularly said to be "the only plant which grows without air"; never known in dry conditions and where a free and constant circulation of fresh air exists.

The two things should never be confounded. One is normal, the other a virulent disease. See an excellent article in "Chambers' Encyclopædia," vol. iv., p. 101. There is another in the "Encyclopædia Britannica," vol. vii., p. 493.

Where "dry rot" is the enemy, fresh air is the victor.

The method of attack rests with the general. If there were no difficulties there would be little use for architects.

E. R. ROBSON.

Westminster, November 8.

LONDON AND DISTRICT BOROUGH COUNCILS.

Hendon.—The Urban District Council has passed plans as follows:—Messrs. Meredith & Skuse, additions to rink, Rockhall-terrace, Cricklewood; Mr. A. Garstin, extensions to factory, Colindale-avenue; Mr. A. J. Reynolds, four houses, West Heath-drive; Mr. A. Cook, six houses, Nant-road; Mr. E. Streather, fourteen pairs of houses, Powis-gardens, and one pair of houses, Golder's Green-road; Garden Suburb Development Company, three houses, The Meadway; Mr. W. J. King, four houses, Park-avenue, and pair of houses, North End-road. Plans have been lodged as follows:—New Wesleyan church at the Burroughs; Wesleyan chapel, Golder's Green-road; Messrs. Edmondsons, forty-four shops between Hoop-lane and Golder's Green-crescent, Golder's Green-road.

Wimbledon.—Plans have been lodged as follows:—Mr. B. A. Boyton, seven houses and one shop, Laburnham-road; Mr. W. A. Cornell, skating-rink, Wyke-road.

IMPROVED SYSTEM OF VACUUM CLEANING.

LAST week we had the opportunity of inspecting an installation of the "Silent Dustman" vacuum cleaning system, recently introduced by Messrs. A. & P. Steven. The apparatus is in operation at Thanet House, Strand, and consists of an exceedingly simple machine fixed in the basement, with pipes extending to the fifth story of the building. So far as external appearance is concerned, the vacuum-producing machine is nothing more than a short piece of iron or steel pipe, with a coupling for the attachment of cold water supply, and a branch pipe for the connexion of an air-suction pipe. Inside, however, there is a device acting like a steam ejector, and to this is connected an interior perforated tube. The machine is made in two types, one for low-pressure and the other for high-pressure water, but the principle of operation is exactly the same for both.

Having laid water on to the inlet, connected a suction pipe to the outlet, and carried a waste-water pipe to the nearest drain, the machine is ready for work. The jet of water from the ejector creates a high vacuum, causing the suction pipe to bring dust from any part of the building with which connexion has been made; the dust and ejected water mingle in the tubular body of the machine, and pass into the drain. So far as the operating part of the apparatus is concerned, there is nothing more to be said in the way of description. The main suction pipe can be carried in any

Digitized by Google

required direction and through any number of stories, inlets being provided wherever necessary for the attachment of hose pipes furnished with nozzles of different shapes for cleaning floors, furniture, cornices, picture frames, and surfaces of all kinds. The apparatus needs no attention of any kind. To start it, the only thing to do is to turn on the water tap, and it is stopped by closing the tap. When cleaning or dusting has to be done on any floor of a building the cap is removed from the inlet on the suction main, one end of a hose pipe is simply placed in the opening, and the nozzle at the other end is ready for use.

On the occasion of our visit the high vacuum of nearly 28 in. was registered on the fifth floor of Thanet House, with a water consumption which we were informed was about 300 gallons an hour. The machine in question is capable of exhausting from two lines of hose simultaneously, with floor nozzles almost as wide as Bissell carpet-sweepers. The thorough manner in which the apparatus does its work was demonstrated by the complete and instantaneous removal of powdered starch well trodden into an office carpet, and by equally convincing tests conducted in our presence. The system is one which we have every confidence in commending to the attention of our readers.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ACTON.—Workmen's dwellings; Mr. D. J. Ebbett Surveyor to the District Council.

Aintree (Liverpool). — Workshops and engineering sheds, Orrell-park; Messrs. Runton & Barry, architects, Bowlalley-lane, Hull.

Alcester.—School; Messrs. Wilmott, Fowler, & Wilmot, architects, 6, Waterloo-street, Birmingham.

Baldry.—Public school (5,000*l.*); Messrs. Fryers & Penman, architects, Bath-street, Largs.

Barwell.—School (5,000*l.*); Mr. G. Gurney, builder, Leicester.

Bellingham.—Additions to school (1,000*l.*); Mr. Forrest, architect, Moot Hall, Newcastle.

Bradford.—Test-house, Daisy-hill, for the Guardians (7,000*l.*); Mr. F. Holland, architect, Manor-road, Bradford.

Bristol.—Adaptation of premises for school (2,445*l.*); Messrs. R. F. Ridd & Sons, builders, 18, Wilder-street, Bristol.

Brockenhurst.—New school; County Surveyor, The Castle, Winchester.

Chester-le-Street.—Entertainment hall; Mr. R. G. Cowe, architect, Front-street, Chester-le-Street.

Cold Hesledene.—School (3,000*l.*); Mr. J. W. F. Phillipson, architect, Murton-chambers, Grainger-street, Newcastle; Messrs. F. H. Tood & Son, builders, Appleton-Wiske, Northallerton.

Colne.—Extensions to Glen Dye Works, for Messrs. Cox & Son, Colne. Twelve houses, Reginald-street; Mr. S. B. Gills, architect, Colne.

Dingle.—Library (3,000*l.*); Clerk to Dingle Urban District Council.

Dorchester.—Adaptation of Stretton Manor as county offices; County Surveyor, Dorchester.

Dudley.—The Town Council has passed the following plans:—Four houses, Rollason-road, for Messrs. Lacey & Powers; new schools, Holly Hall, for the Corporation; alterations to Bull's Head inn, Hall-street, for the trustees of the late Mr. Chillingsworth.

Dunoon.—Boarding-house (3,000*l.*); Mr. T. Baird, architect, 134, Bath-street, Glasgow.

Dunstable. — School; Messrs. Gotch & Sanders, architects, Kettering.

Earlsdon. — Wesleyan church (7,000*l.*); Wesleyan Trustees.

Edinburgh.—Veterinary College (40,000*l.*); Mr. D. McArthy, architect, 25, Frederick-street, Edinburgh.

Exeter.—Boys' school, Cowick-street (2,300*l.*); Mr. P. Morris, architect, 1, Richmond-street, Exeter. Additions to infirmary; Clerk to the Guardians.

Exhall.—Extensions to school; Mr. J. Willmott, architect, 6, Waterloo-street, Birmingham.

Fareham (Hants).—Alterations to asylum (6,000*l.*); County Surveyor, The Castle, Winchester.

Farnworth.—Library, Market-street; Mr. J. Lomax, architect, 11, Fold-street, Bolton.

Fleetwood.—Slaughterhouses (6,000*l.*); Mr. E. Frobisher, Town Hall, Fleetwood.

Frome.—Methodist church (1,200*l.*); Mr. W. S. Skinner, architect, Baldwin-street, Bristol.

Glasgow.—Nurses' home, Belvedere Hospital (3,000*l.*); Mr. A. B. McDonald, City Engineer, Glasgow.

Grassington.—Police-station (1,100*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Grimsby.—School, Strand-street (11,200*l.*); Mr. W. Kirton, builder, Grimsby.

Haddington. — Extension, public school (2,500*l.*); Mr. J. A. Carfrae, architect, 3, Queen-street, Edinburgh.

Hants.—Additions to Crofton and Bishop's Waltham schools; County Surveyor, The Castle, Winchester.

Hartshill.—Extensions to school; Messrs. Wilmott, Fowler, & Wilmot, architects, 6, Waterloo-street, Birmingham.

Heaton.—Co-operative stores (2,000*l.*); Mr. L. G. Ekins, architect, West Blandford-street, Newcastle.

Ilfracombe. — Restaurant on promenade (3,000*l.*); Mr. A. T. Hussell, architect, Market-square, Ilfracombe; Mr. R. Picketts, builder, Ilfracombe.

Keighley.—Additions to workhouse infirmary (2,000*l.*); Messrs. Moore & Crabtree, architects, Keighley. Tool shop and warehouse, Heber-street (1,500*l.*); Messrs. Broster & Son, architects, Keighley. Detached residence (1,000*l.*); Mr. A. P. Harrison, architect, Highfield-lane, Keighley.

Kilbirnie.—School (4,000*l.*); Mr. J. Barbour, architect, 7, Bath-street, Glasgow.

Laufine.—Extensions to Incurables' Home (3,000*l.*); Mr. J. Shanks, architect, 42, Cowgate, Kirkintulloch.

Leeds.—Extensions to Maternity Hospital; The Governors, Leeds.

Liverpool.—Premises for Messrs. Lunt & Co. (3,000*l.*); Messrs. R. Owen & Son, Cross Hall-street, Liverpool; Messrs. Haugh & Pilling, builders, Watnough-street, Liverpool.

Ludlow.—Conversion of mansion into school; Mr. H. Brakespeare, architect, Corsham, Wilts.

Manchester.—Diocesan Church-house, Deansgate; Mr. John Brooke, architect, Exchange-street, Manchester. Additions to premises, for Mr. J. J. Shays, Oxford-street; Mr. J. Gerrard, builder, Swinton, Manchester. Rebuilding Piccadilly branch of Union Bank of Manchester.

March.—Young men's institute; Rev. G. Sherbrooke-Halker, March.

Milford Haven.—Sunday-school (6,100*l.*); Messrs. D. E. Thomas & Sons, architects, Haverfordwest; Mr. H. Adams, builder, Milford Haven.

Moorthorpe.—Police-station (2,000*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Montrose. — Additions to workhouse; Managers, Montrose Asylums Board.

Northampton.—Extensions to Northampton Town and County School, Billing-road (2,250*l.*); architect, care of Clerk, Northampton Town Council. The Town Council has passed the following plans:—Workshops, etc., The Green, for Mr. S. Underwood; additions to premises, Rose and Crown Inn, Welford-road, for Messrs. P. Phipps & Co., Ltd.; additions to Globe Works, Bridge-street, for Mr. W. Allchin, Ltd.; additions to premises, Watkin-terrace, for the Northampton Guardians; nine houses, and additions to four cottages, Abington-avenue, for Mr. H. Martin.

Paignton.—Vicarage (2,000*l.*); Mr. W. D. Caröe, architect, 8A, Whitehall-place, S.W.

Park Prewett (Hants). — Asylum (1,200 places); Mr. George T. Hine, architect, 35, Parliament-street, Westminster, S.W.

Pensnett.—School, Birds Meadow (3,100*l.*); Mr. J. Hutchings, architect, Stafford.

Plymouth.—The Town Council has passed the following plans:—Extension of premises on site of Chubbs's Hotel, Old Town-street, for Messrs. Spooner & Co., Ltd.; twenty-five houses, Glenparke-avenue, Houndiscombe Estate, for the Houndiscombe Estates Company; arcade, Market-lane, for Messrs. Spencer & Co., Ltd., Mr. A. S. Parker, architect.

Sabden.—School (5,000*l.*); Mr. F. J. Parkinson, architect, 9, Richmond-terrace, Blackburn; Messrs. E. Lewis & Son, builders, Blackburn.

Sheffield.—The Town Council has passed the following plans:—Additions and alterations, Weedon-street, for Messrs. T. Firth & Sons, Ltd.; additions, Horse and Jockey public-house, Attercliffe-road, for Messrs. J. Smith's Tadcaster Brewery Company, Ltd.; additions and alterations, Tramcar Inn, Attercliffe-common and Clay-street, for Messrs. D. Gilmour & Co., Ltd.; four houses, Limpsfield-road, for Mr. George Exley; eight houses, Glenalmond, Blair Athol and Murray roads, for Mr. A. J. Belton; three houses, City-road, for Mr. B. Woodthorpe; four houses, Fraser-road, for Mr. A. Stockton; sanitary convenience and pavilion, Meersbrook Park and Hillsborough Park, also additions to lodge, Firth Park, for Sheffield Corporation; ten houses, Dykes-lane, for Mr. John Heap; sale shops, billiard saloons, and stores, West-street and Charlotte-street, for the Sheffield Motor Company, Ltd.; twelve houses, Middlewood-road, and new roads, for the Don Brick Company, Ltd.; sixteen houses, Wincobank-road, for Mr. G. E. Pye.

Shipton.—Club premises; Mr. A. Kime, architect, Shipton.

Skipton.—Belle Vue Mills (2,000*l.*); Mr. J. Hartley, architect, Skipton. Technical institute (3,000*l.*); Mr. J. Hartley, architect, Skipton; Messrs. S. Foster & Co., builders, Ingrow, Keighley.

Stretford.—Eleven pairs of cottages (3,387*l.*); Mr. Wilson Mellor, builder, 1, Mellor-street, Stretford. The Town Council has passed plans for four houses in Canute-road, for Mr. George H. Brown.

Sutton Coldfield.—Residences; Messrs. Collier & Davey, architects, 71, Colmore-row, Birmingham.

Tividale.—School; Mr. H. Pritchard, architect, Kidderminster.

Turn Shuttleworth.—Weaving mill (3,700*l.*); Mr. J. Garnett, architect, 18, Callender-street, Ramsbottom.

Walsall.—The Town Council has passed plans for a motor spirit store tank in Meadow-street, for the Anglo-American Oil Company, Ltd.; also for six cottages, Sneydo-lane, Bloxwich, for Mr. D. E. Perry.

Wardsley.—School, Lawnswood-road (3,750*l.*); Mr. J. Hutchings, architect, Education Offices, Stafford; Messrs. Gough & Sons, builders, Wolverhampton.

Wednesfield.—School, Lichfield-road; Mr. J. Hutchings, architect, Education Offices, Stafford.

Wembley.—Rink, Harrow-road; Messrs. Rudd & Evans, architects, Wembley. Fifteen houses, Clayton-avenue; Messrs. Robinson & Evershed, architects, Wembley.

METROPOLITAN WATER BOARD.

AT the monthly meeting of the Water Board on Friday last week the following matters were dealt with:—

Hertford Sewage.—The Works Committee reported on the proposed extension of the Hertford Sewage Works. Under the terms of the lease entered into by the late Waterworks Company with the Corporation of Hertford the Board take over all the liabilities and duties of the Corporation in connexion with the works and the purification and disposal of the sewage, and the Corporation pay the Board a yearly sum of 700*l.* For some time past the question of the extension and improvement of the sewage works has engaged serious attention, and the Chief Engineer had prepared a scheme for the construction of the necessary works. It is proposed to discontinue the Manifold Ditch as an effluent outfall, and to substitute a new and improved outfall, which will join the Lee at a lower point where there is an increased current and volume of water. The motive power for the station is proposed to be obtained from the North Metropolitan Electric Power Supply Company, if suitable terms can be arranged. The estimated cost of the scheme will be 24,000*l.*—It was decided to forward plans to the Hertford Corporation and the Local Government Board.

Diversion of Mains.—To allow of the construction of tramways in Malpas and Sherdeloes roads, Brockley, it was agreed to relay the mains, at an estimated cost of 1,000*l.*

New Works.—It was further agreed to provide a 12-in. main from Acton-lane to Gunnesbury-place, Acton, at an estimated cost of 2,760*l.*; and to fix waste meters in Fulham, Ealing, and Acton, at an estimated cost of 1,599*l.*

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Board on Saturday last week the following matters were dealt with.

Sanction for Work.—It was reported that the Local Government Board had given their approval to the plans for the provision of a waiting-room and lavatory accommodation at the Children's Infirmary, additional lavatory accommodation at Leavesden Asylum, and the erection of five closets at White Oak School.

Darenth Asylum.—The Asylums Committee reported having considered a letter of the Local Government Board suggesting the advisability of erecting workshops at the Darenth Asylum. When the matter first came before the Board in February the scheme provided for the accommodation of 239 workers, at an estimated cost of 4,225*l.* Messrs. T. Aldwinckle & Son, the Board's Architects, now submitted amended plans, the estimated cost of the scheme being 3,750*l.* Briefly stated, the plan now submitted provides for one large building, with a floor area of 8,000 sq. ft., lighted from the top on the "factory system" and divided into seven separate workrooms by terra-cotta

Digitized by Google

partitions. The floor space per worker is 20 ft., and the cubic space 275 ft., the minimum of the Factory Act being 250 ft. The ventilation would be effected by fans, and the air would be changed three times an hour, but the architects pointed out that this would be by no means a large allowance, and have advised that the Plenum system of ventilation should be installed, by which the air would be changed five times an hour instead of three. The extra cost of that system would be 120*l.* Particular attention had been given to the question of ventilation, but the Committee were not prepared to advise the adoption of the Plenum system, as they considered the exhaust system would be must more satisfactory in a building of the kind proposed.—It was decided to forward the plans to the Local Government Board for approval.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Asphalt Paving.—The Streets Committee submitted an application from Adamant & Asphalte, Ltd., for consent to lay a sample of their patent granited Trinidad asphalt, and recommended that the firm be permitted to lay a specimen of their pavement in the carriageway of Creechurch-lane, free of cost, in accordance with specification and experimental paving conditions, and subject to the right of the Corporation to call upon the Company, at the expiration of two years' free maintenance period, to maintain the said carriageway for five or ten years at 6d. per yard super. per annum. This was agreed to.

The Widening of Fleet-street.—A letter was received from the London County Council relative to the widening of Fleet-street at Nos. 13, 14, 15, 16, 21, 22, 47, 49, 50, 52, 54, 55, 55A, 57, 58, 60, 61, 62, 68, 70, 72, 73, 74, 75, 77, 78, 80, and 81, stating that the Council has agreed to contribute half the net cost of the improvement in accordance with plan, subject to the conditions that if the net cost of the improvement exceeds 400,000*l.*, such contribution shall be limited to 200,000*l.* The Corporation's estimate is 436,238*l.* The letter was referred to the Finance and Improvement Committee.

Alterations, etc., at the Mansion-house.—The General Purposes Committee submitted estimates for works and furniture required at the Mansion-house for the ensuing Mayoralty at a sum of 1,695*l.* 15s. The Committee were authorised to proceed with the works immediately.

The Proposed New Bridge.—The Bridge House Estates, reporting on the question of bridge accommodation, recommended the court to approve:—(*a*) The construction of a new bridge, estimated cost 1,646,983*l.*; and (*b*) The reconstruction of Southwark Bridge to the width of Queen-street-place, estimated cost 261,000*l.*; and that the schemes be referred back to the Committee to proceed therein, reporting to this Court on the details of carrying them into execution; that the Committee be authorised to obtain any necessary professional assistance, and to confer with the London County Council and any other interested authorities, it being understood that the alterations to Southwark Bridge will be proceeded with as soon as Parliamentary powers are obtained. The consideration of the report was adjourned.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

United Westminster Schools.—The Governors of the United Westminster Schools submitted a scheme by which they desire to remove the boarding side of the Emmanuel School, Wandsworth, into the country, and intimated that the Clothworkers' Company had offered to transfer the boarding school administered by them at Sutton Valance, and to contribute 5,000*l.* towards the rebuilding of the premises. Facilities for extending the school are also offered by the Company.—The Committee expressed general acquiescence with the scheme.

Site Purchases.—The following settlements were announced:—8 and 9, Coborn-street, Bow, copyhold, Governors of the Stepney and Bow Foundation, 800*l.*; 11, Amberley-wharves, Paddington, Edale Trustees, 368*l.*

Camden-street, St. Pancras.—An additional vote of 2,300*l.* was recommended for the acquisition of property adjoining the school.

New Greenwich School.—Plans were recommended for acceptance of proposed new school at Russell-place, to be built by the Managers of St. John's.

New Hoxton Schools.—For building an elementary school for 623, a higher mixed school for 390, a school for 160 mentally deficient, and a handicraft centre for forty, together with cookery and laundry centres, and a schoolkeeper's house on the Hoxton site, the tender of Messrs. Johnson & Co., 32,650*l.*, was recommended; architect's estimate, 31,473*l.*

Hammersmith Trade School for Girls.—An estimate of 1,350*l.* was recommended in connexion with the proposed enlargement. It was reported that a brick building would be more economical and satisfactory than iron buildings.

Heating Works. — Tenders accepted:—Brackenbury-road, Hammersmith, Messrs. Tilley Brothers, 162*l.* 9s.; Cottenham-road, Islington, Messrs. Palowkar & Sons, 193*l.*; and Portobello-road, Kensington, Mr. L. Norden, 67*l.*

New Road.—It was reported that negotiations are in progress, in connexion with the Hoxton House site, for the making of a 40-ft. road from Basing-place to Hoxton-street.

Master Builders' Associations, etc.

EDINBURGH BUILDERS AND "GERMAN-MADE" SCHOOLS.

A special joint meeting of the Edinburgh, Leith, and District Building Trades Association and the Building Trades Exchange of the city and district of Edinburgh was held on the 3rd inst. in the Board-room, 61, Lothian-road, Edinburgh, "to consider the policy of the Leith School Board in connexion with the two schools presently being erected for that body." "It appears," continued the circular calling the meeting, "that some time ago they decided to have these schools built on the Docker principle, and sent the order direct to Germany without asking local, or even British, builders to tender for the work. The whole question is one that affects the Edinburgh and Leith building trade in general, and those members of the trade who are ratepayers in the Burgh of Leith in particular. Over and above, there is a question of principle involved." Mr. W. Graham Yooll, Chairman of the Building Trades Exchange, who presided, expressed the view that the buildings in question were not of a temporary nature, as the foundations, roofs, playgrounds, and all the arrangements seemed to be of a permanent character, and could not possibly be removed without damaging the material. The two schools were to accommodate 480 pupils each. The average cost of a permanent building erected by the local contractors ran from 10*l.* to 12*l.* per pupil, while the buildings in question worked out at nearly 14*l.* per pupil. The School Board, it was said, had gone in for these German buildings because of the rapidity with which they could be erected. Nearly six months had, he said, elapsed since it was known that these schools were to be built, and a commencement had only now been made. He was satisfied that the local contractors could have erected schools as expeditiously as the German contractors. He understood that the supervision of the erections was to be done solely by German overseers.—Mr. David Mekie (Chairman of the Master Builders' Association) thought that the School Board had erred in not keeping before them the great necessity there was for the schools not being of an inflammable nature. But from statements made it seemed that they were of a highly inflammable character. In the course of further discussion, it was pointed out that considerable difficulty had been experienced in getting the plans passed through the Leith Dean of Guild Court. It was also stated that, whereas the ordinary insurance rate for ordinary schools ran to about 1s. 6d. per cent:, the rate for those schools would run from 10s. to 15s. per cent. Councillor A. A. Murray, Edinburgh, moved that they protest against the action of the Leith School Board for the reasons already stated, and the resolution was seconded by Mr. J. R. Watson (of Messrs. J. R. & W. Watson, builders, Leith), and unanimously adopted.

Obituary.

MR. WORTHINGTON.

We regret to learn by Thursday's papers of the death, at the age of 84, of Mr. Thomas Worthington, of Manchester. He died at his residence at Alderley Edge on the 9th inst. Mr. Worthington, whose name will be familiar to all our readers, was for many years one of the foremost architects in the north of England, and remarkable both for his artistic and practical acquirements. We shall be able to give some particulars of his life and work in our next issue.

General Building News.

NEW CHURCH, PURLEY, SURREY.

The foundation-stone was recently laid of the new church of St. Mark, Woodcote, Purley. The new church is being built from the designs of Mr. Geo. H. Fellowes Prynne, and will have accommodation for some 700. The builders are Messrs. R. Wilkins & Sons, of Bristol.

CHAPEL REBUILDING, TONYPANDY.

The Bethania Welsh (C.M.) Chapel, Tonypandy, has been rebuilt. The chapel has now accommodation for 810, the gallery being returned on all sides, with space for future organ in return gallery. The vestry adjoining has accommodation for 210 on the ground floor, with minister's retiring-room, stores, and heating-rooms. There are two classrooms and library on the first floor, with landing and two entrances to organ gallery. The builders are Messrs. E. Turner & Sons, of Cardiff, and the architect Mr. R. S. Griffiths, J.P. The contract sum is 4,497*l.*, exclusive of vestry and classroom furniture.

CONGREGATIONAL CHAPEL, PENYDARREN.

The memorial-stones of the new Horeb Congregational Chapel at Penydarren, Merthyr, were recently laid. The church has seating accommodation for about 750, while the schoolroom underneath will hold about 400. Messrs. O. M. Roberts & Sons, Portmadoc, were the architects, the builder being Mr. Watkin Williams, of Cardiff.

BAPTIST CHURCH AND SCHOOLS, SOUTHAMPTON.

These buildings are designed in late Gothic, freely treated. Externally the facings are of red bricks, with Bath stone dressings. The complete scheme embraces church, with lofty tower, seniors' school, intermediates' school, and juniors' school. The latter section of the school is to be omitted for the present. The cost of the portion to be executed at the present time is about 6,000*l.* The architects, whose designs were selected in a recent competition, are Messrs. George Baines & Son, of London.

GRAMMAR SCHOOL, NORTHALLERTON.

New buildings have been opened at the Northallerton Grammar School. The school is practically a one-story building, with present accommodation for 150 mixed scholars, with classrooms, a central hall, and a laboratory. Rooms are provided for the head master and the head mistress, and on the upper floors are studies and common-rooms for the assistant teachers. The school is heated by low-pressure hot water, lighted by electricity. The architect was Mr. W. H. Brierley, of York. Mr. R. T. Snaith, of Darlington, was the general contractor for the building; Messrs. Mackenzie Brothers, of Darlington, carried out the brickwork; Messrs. Dunning & Cooke, of Newcastle, the heating; Mr. T. Lishman, Darlington, the plumbing; Mr. T. B. Robinson, Darlington, the plastering; Mr. T. Metcalfe, Darlington, the painting; and Messrs. Lawson & Stobbart, the electric lighting.

SECONDARY SCHOOL FOR GIRLS, WORCESTER.

The foundation-stone has been laid of a new building for the Worcester City Secondary School for Girls. The building is designed to give accommodation for 200 girls. The major portion of the basement floor is given over to the assembly hall, 53 ft. by 23 ft. On the ground floor are classrooms, mistresses' rooms, etc. The first floor provides accommodation for classrooms, a cookery-room, and a store-room. The corridors, classrooms, cloakrooms, and lavatories will have dadoes of glazed bricks, and the floors and staircase will be of fireproof construction. The building is being erected by Messrs. J. Wood & Sons, Ltd., from the designs of Mr. Alfred G. Parker, City Architect.

SIR WILLIAM BORLASE'S SCHOOL, MARLOW.

Extensions are being made to this school. The additions embrace three rooms, two of them being classrooms, and by a system of movable partitions it will be possible, when required, to provide one large hall. The building is to be heated by hot-water radiators, and lighted by gas. The plans have been prepared by Messrs. Forsyth & Maule, architects, of London, and the contract for the erection of the buildings has been entrusted to Messrs. Y. J. Lovell & Son, builders, of Marlow. The cost of the work is about 1,332*l.*

WESLEYAN SCHOOL BUILDINGS, LLANDUDNO JUNCTION.

The Welsh Wesleyan Methodists at Llandudno Junction have built a new schoolroom vestry and chapel-house. The architect of the new buildings was Mr. Arthur Hewitt, of Llandudno, and the contractor Mr. David Roberts, Llandudno Junction.

Digitized by Google

EXTENSION OF MARINE SCHOOL, SOUTH SHIELDS.

A new wing has been erected at the South Shields Marine School. The architect for the work was Mr. James Page, and the contractors Messrs. W. J. Robertson & Son.

COUNCIL SCHOOL, SKETTY, GLAMORGAN.

A new Council school has been opened at Sketty. The building provides accommodation for 352 scholars, and consists of seven classrooms and a large marching hall. The boys, girls, and infants have separate cloakrooms, with lavatories, and rooms are provided for the headmaster and teachers. A dining-room has been provided for the use of children that attend school from a distance, and are unable to go to their homes during the midday interval. The building is faced externally with red bricks from the Craig Brickworks, Morriston, with Bath stone dressings, and the roofs are covered with Precelly (Carmarthenshire) slates. Internally the walls have a glazed brick dado, and a space is provided in the classrooms and hall for freearm drawing. The cloakrooms and entrances have floors of granolithic concrete, and the remaining rooms are laid with pitch-pine wood blocks. The internal woodwork is stained green and varnished, and the external woodwork is painted green and white. The heating is by a low-pressure hot-water system installed by Mr. J. E. Hiles, of Hereford, but fireplaces are provided in case of emergency. A complete system of ventilation is provided, fresh air being admitted behind the radiators and by wrought-iron hoppers in the lower parts of the windows, and the vitiated air is removed by means of exhaust roof ventilators. The total cost of the building, including boundary walls and laying out of site, will amount to about 6,350*l*. The contractors were Messrs. Bennett Brothers, Swansea, and Mr. D. Williams acted as clerk of works. The school was designed by and carried out under the directions of Mr. W. James Nash, County Education Architect.

NEW SCHOOL, TAVISTOCK-GROVE.

This school occupies a site of about 1¼ acres at the end of Tavistock-grove. For the foundations it was necessary to go down with pillars of concrete about 12 ft. deep before a proper foundation could be obtained. The building thus rests on stilts, and it is satisfactory to know that no sign of settlement or failure of any kind has revealed itself. The limited site available precluded the usual arrangement of a separate one-story block for infants, and the school is therefore designed for two compartments only—the ground floor for 440 infants and junior mixed in eight classrooms, and the first floor for 428 senior mixed in eight classrooms. A central hall, 59 ft. by 28½ ft., is provided for each department, and by utilising the roof space over the central halls an art-room and a workshop for manual instruction are obtained. The upper floors are fire and sound resisting, formed with a new system of ferro-concrete construction, which avoids the necessity of steel girders. The babies' room is paved with the special jointless flooring called "Doloment," and the floors of halls and remaining classrooms are paved with pitch-pine blocks tongued and grooved together. Glazed brick dadoes are provided in the classrooms, cloakrooms, corridors, and staircases, and in the two halls a tiled dado. The internal joiner's work is in varnished yellow deal. Drinking fountains are provided, four in the school building and two in the playgrounds, of special design, which dispenses with a cup or any drinking vessel. The building is warmed from two steam boilers placed in the basement, and working at 1½-lb. pressure, the radiators being provided with a special arrangement so that the temperature shall not exceed that of hot water, and thus casings can be dispensed with, and the radiators fixd clear of the floors, providing no opportunity for dirt and dust to accumulate. Fresh air is admitted at the back of each radiator, regulated by a valve, the foul air being removed by extraction flues on the opposite side of the rooms. In addition, each classroom is provided with an opening casement on the inner wall, so that cross-ventilation can be obtained from the windows. Electric lighting is installed throughout, also a system of electric bells communicating from the central hall to the classrooms. This work has been executed by Mr. W. D. Willson, of Croydon. The builders are Messrs. Wm. Smith & Sons, of Croydon, whose contract sum amounted to 12,218*l*. Under a separate contract, amounting to 645*l*., the Bennet Furnishing Company, of London, have supplied the furniture, which is executed in Canadian oak. Mr. H. R. Fenn was clerk of works. The architect is Mr. H. Carter Pegg.

BRISTOL FINE ARTS ACADEMY.

A scheme is under consideration for the enlargement and interior reconstruction of the building of the Bristol Fine Arts Academy, from plans made by the late Mr. F. Darc Bryan. It is rather a pity that the building could not be replaced by an entirely new one, for it is a commonplace structure; but Mr. Bryan's designs, to judge from some small illustrations in the *Bristol Times*, seem calculated to produce a good and effective interior, and he has provided a new central entrance and staircase in a one-storied front block projected in front of the existing building, and treated on the roof as an open-air terrace.

CHURCH HALL, MONIFIETH.

A new hall has been opened in High-street, Monifieth, under the auspices of the South U.F. Church congregation. The architects were Messrs. Maclaren, Sons, & Soutar, Dundee, and the contractors as follows:—Mason, Alex. Ramsay, Monifieth; joiner, John B. Hay, Monifieth; plumber, Peter Edmonds, Monifieth; slater, W. S. Wilson, Monifieth; plasterer, John Doig, Forfar; glazier, G. G. Kirk, Dundee; painter, Maver & Winton, Monifieth; heating apparatus, David Keay, Dundee; railing and gates, Alex. Anderson, Monifieth; patent glazing, W. H. Heywood, Huddersfield; seating, Bennet Furnishing Company, Glasgow; tiling, G. H. Nicoll, Dundee; furnishings, T. Justice & Sons, Dundee.

TECHNICAL INSTITUTE, LOUGHBOROUGH.

The Loughborough Technical Institute has been considerably enlarged and improved. The old building has been adapted to form a lecture-room, classroom, and staffroom, the old entrance being retained. The new portion of the buildings, occupying, roughly, three times the area of the old premises, consists, on the ground floor, of chemical and physical laboratories, and two large classrooms divided by a folding partition. There are also cloakrooms and lavatories, porter's room, balance and store rooms. A corridor 10 ft. wide extends the whole length of the building on both floors. On the first floor are a large domestic science room, with scullery, recess, and larder, and in the art department a life-room and three classrooms, two of which are divided by a sliding partition. There are also storerooms and a room with a glass roof for specimen plants. The general contractors were Messrs. T. Barker & Sons, and the architects Messrs. Barrowcliff & Allcock.

PUBLIC HALL, METHLICK, N.B.

A public hall has been built in this village at a cost of 2,000*l*. The building was erected from one of three designs submitted to the trustees by the architect, Mr. James Cobban, Haddo House. The contractors were:—Mason, Messrs. Paterson & Marshall, Udny; carpenters, Messrs. Edwards & Rae, Dyce; slater, Mr. W. S. Ewen, Millbrex; plasterers and tilers, Messrs. J. Bannochie & Sons, Aberdeen; plumbing and heating work, Messrs. J. Laing & Sons, Inverurie; painters, Messrs. George Donald & Sons, Aberdeen; lighting, The Bruce Petrol Air Gas Company, Glasgow; water supply, Messrs. J. Laing & Sons, Inverurie; seating and furnishing, Messrs. James Allan & Co., Aberdeen.

PARISH HALL, REVESBY, LINCS.

A parish hall has been erected in this village. The building was designed by Mr. Allen, of Panton, and the contractors were Messrs. Lettice, of Bolingbroke.

VILLAGE INSTITUTE, BOLTON ABBEY.

A new institute has been presented by the Duke of Devonshire to the inhabitants of this village. The building was designed by Mr. Sherbrooke, of Chesterfield.

READING AND RECREATION ROOMS, BURGHILL, HEREFORD.

New reading and recreation rooms have been erected in the parish of Burghill. The premises have been designed by Mr. Bettington, and the contracts have been executed by Mr. Charles Cook, both of Hereford.

CLUB PREMISES, HALIFAX.

A residence known as Hope Hall, in Clare-road, Halifax, has been converted into premises for the Albany Club. Messrs. Glendinning & Hanson, architects, prepared the plans for the alterations needed, and the various works have been carried out by the following:—Masonry, Messrs. Bower Brothers; joinery, Messrs. Fielding & Bottomley; painting and decorating, Mr. J. H. Ackroyd; furnishings, Messrs. Moss Brothers; ironmongery, Messrs. Thackrah & Sons; and plumbing, Mr. W. Ward.

ENLARGEMENT OF A TEMPERANCE HALL, DUBLIN.

An extension has been made to the Father Mathew Memorial Hall, in Church-street, Dublin. The additions provide for a stage, dressing-rooms, storage-rooms, new gallery exits, lantern and cinematograph operating chamber, and refreshment-room improvements. The building contract was entrusted to Messrs. W. Connolly & Son; the painting and decoration was carried out by Mr. P. J. Duffy; the lighting by the Ampere Electrical Company; and the fibrous plaster work by Mr. J. Ryan, all of Dublin. The work was carried out from designs of Mr. Anthony Scott.

ALMSHOUSES, NOTTINGHAM.

In connexion with the Wilkinson Smith bequest for the provision of almshouses, ten cottages are at present in course of erection on a site adjacent to the Mansfield-road. The cottages occupy an area of nearly an acre. In each house is a parlour 11 ft. by 10 ft., a kitchen 12 ft. by 11 ft., a scullery 8 ft. 3 in. by 6 ft. 6in., a lobby entrance with staircase leading out, two bedrooms, bathroom, coal-house, larder, and lavatory. Mr. Robert Evans, the architect, is responsible for the plans. The cost per cottage (excluding work in connexion with the grounds) is estimated not to exceed 300*l*. Messrs. Henry Vickers & Son are the builders.

SKATING-RINK, WARRINGTON.

A skating-rink has been opened in Winmarleigh-street, Warrington. The new building has a maple floor measuring 155 ft. by 85 ft., and an alley of 118 ft. by 16 ft. for learners. A charming lounge, 70 ft. by 20 ft., with refreshment bar, tearooms, smokeroom, etc., are also provided. The architects were Messrs. Wright, Garnett, & Wright, and the work has been executed by the following:—Builder, Mr. D. Cooper; steel work, Messrs. Forshaw & Sons; heating, Messrs. S. & F. Acton; lighting, Mr. H. Bibby; decorating, Mr. F. J. Dell; and painting, Mr. Winstanley.

CENTRAL LIBRARY, BIRKENHEAD.

The new Carnegie Central Library, Birkenhead, has been completed and opened. The architects were Messrs. Sproat & Warwick. The newsroom will find room for 120 newspapers and periodicals. There is a special magazine-room for ladies. The book accommodation in the lending library is for 60,000 volumes, and indication space is reserved for 40,000 volumes. There is also provided a staff dining-room, and there are also committee-rooms. The reference library has accommodation for 50,000 volumes and tables for fifty-two readers. The children's department is situated in the basement, with a storage for 5,000 volumes.

WESLEYAN HALL, HULL.

The Wesleyans of Hull have erected a new hall on a site in Great Thornton-street. The building, fitted with 1,850 tip-up easy chairs, will provide total accommodation for 2,000 persons. The frontage to Great Thornton-street has been carried out in Ruabon red bricks and Ancaster stone. Internally, the whole of the staircase and corridors are fireproof, the walls being faced with glazed bricks. The premises are lighted by gas and electric light, and they are heated throughout on the low-pressure system. The buildings have been erected by Mr. G. H. Panton, builder, under the supervision of the architects, Messrs. Gelder & Kitchen.

INSTITUTE PREMISES, GARTH, MAESTEG.

A new workmen's hall and institute has been erected by the Garth Colliery workmen. On the ground floor is provided a large hall to accommodate about 500, with retiring-rooms, etc., as well as a large billiard-hall. On the first floor are a reading-room, library, clubroom, etc., and on the top floor rooms for the caretaker. It is built of local stone, faced with red pressed bricks and Grinshill stone dressings. The work has been carried out by Mr. W. Lewis, Maesteg, from plans prepared by and under the superintendence of Mr. W. Beddoe Rees, architect, Cardiff. The building cost 3,000*l*.

WORKHOUSE EXTENSION, GOVAN.

An addition has been made to Govan Combination Parish Poorhouse, Merryflatts. The extension, which has been built at a cost of about 10,000*l*., is a three-story building situated apart from the older portion of the poorhouse. Besides accommodation for about 250 inmates it consists of four day-rooms and a dining-hall. The architects were Messrs. J. Thomson & R. D. Sandilands, and the measurers Messrs. Shearer & Marr, Glasgow.

PUBLIC HALL, NEWCASTLE.

A public hall is being built in Northumberland-road, Newcastle, and is now approaching completion. The principal hall, which will be opened as a skating-rink, will be about 250 ft. in length, by 120 ft. in breadth, and will be made so as to be easily converted into a meeting place for concerts and other large gatherings. There will be seating accommodation for 6,000 people, and a balcony will seat another 1,000. A large café will adjoin the hall, with a balcony, and provision for an orchestra. Altogether the building will be capable of

Digitized by Google

accommodating some 10,000 people. There will be the usual retiring-rooms, smoking-rooms, and cloakrooms. Messrs. J. Parkinson & Sons, of London, Blackpool, and Newcastle, are the builders, and Mr. J. H. Morton, F.R.I.B.A., of Newcastle and South Shields, is the architect. The front has been carried out by Messrs. S. De Jong & Co., of London.

SAILORS' HOME, SOUTHAMPTON.

A new sailors' home has been built in Oxford-street, Southampton. The work has altogether involved an expenditure of about 10,000*l*. Mr. A. F. Gutteridge, architect, prepared the plans.

ART HALL, EDINBURGH.

An art hall has been erected at the Daniel Stewart's College in Queensferry-road, Edinburgh. The design of the new building was prepared by Mr. Washington Browne, R.S.A., architect, and the cost has been about 2,600*l*.

HALL, CAPUTH, N.B.

A hall is being built on a site on the Hill of Caputh, Glendelvine. The work is being carried out under the supervision of Mr. F. Simpson, architect, Stirling, and executed by the following:—Mason and brick work, Mr. James Ross, Perth; joiners, Messrs. David Kydd & Sons, Spittalfield; slater, Mr. Peter Steel, Dunfermline; plasterer, Mr. James Grant, Alloa; plumber, Messrs. D. & D. Duff, Stirling; heating and lighting, Messrs. Mackenzie & Moncur, Edinburgh; painter, Mr. Hutchison, Alloa; glaziers, Messrs. Walls & Jamieson, Stirling; laying out of grounds and fencing, Messrs. John Buchannan, Spittalfield, and J. D. Allan & Sons, Culthill.

PUBLIC HALL, LUTHRIE.

A public hall has been erected in this village to designs prepared by Mr. David Storrar, architect, Cupar. The building covers a space of about 80 ft. by 25 ft., and will accommodate 300 persons. The mason work was entrusted to Mr. George Pearson, Newburgh. The roof, of English tiles, is by Mr. J. M'Intosh, Cupar, and the woodwork is being erected by Messrs. M'Call & Wishart, Newburgh. The other tradesmen are Mr. F. Batchelor, plasterer, and Messrs. A. Stewart & Son, plumbers, Cupar.

HOSPITAL ADDITION, MILTON, HANTS.

A servants' home is being built at the Portsmouth Municipal Infectious Diseases Hospital at Milton. The plans have been prepared under the direction of the Borough Engineer, Mr. P. Murch, and provide for a two-story block, with accommodation on the ground floor for a dining-room, sitting-room, scullery, bath-room, etc., and on the upper floor for ten bedrooms, a bathroom, etc. The rooms will be heated with hot water. Mr. Tanner, of Portsmouth, is the contractor, the contract price being 1,785*l*.

NEW BUILDINGS IN UPPER RENFREWSHIRE.

At a recent meeting of the Buildings Committee for the First or Upper District of the County of Renfrew, it was intimated that during the fortnight ending October 25 plans had been lodged for the erecting of the following buildings:—Double villa in Calderwood-road, Newlands, for Messrs. Robert Gilchrist & Son, 50, New-street, E., Glasgow; alterations on property at Rosebank-terrace, Cathcart, for Mr. John F. Adams, Rosebank-terrace, Cathcart; cottage in Glenpatrick-road, Elderslie, for Mr. Peter Roy, Glenpatrick-road, Elderslie; five double cottages in Eaglesham-road, Clarkston, for Mr. James Merry, 116, Smith-street, Govanhill; double villa in Roundhill-drive, Elderslie, for Mr. James Keanie, Dunconnell, Johnstone; alterations and additions to Blackland House, Paisley, for Mr. George Hamilton, Blackland, Paisley; store at Millholm Paper Mills, Cathcart, for Messrs. Wiggins, Teape, & Co., Ltd., Millholm, Cathcart. The valuation of the several linings was 6,170*l*., as compared with 31,380*l*. for the corresponding period of last year.

NEW BUILDINGS, ABERDEEN.

The Plans Committee of the Aberdeen Town Council has passed the plans of the following new buildings in Aberdeen:—Alterations in connexion with bakery on the east side of Berryden-road, for the Northern Co-operative Company, Ltd., per Messrs. Wilsons & Walker, architects; five dwelling-houses on the west side of Clifton-road, for Mr. Robert Ferrans, joiner; six dwelling-houses on the west side of Clifton-road, for Mr. Alexander Reid, stone-cutter; four dwelling-houses on the west side of Richmondhill-road, for Messrs. Bowie & Manson, builders, per Messrs. W. Henderson & Son, architects; alterations in connexion with premises on the south side of Ashvale-place, for Mr. William Matthew, builder; alterations and additions in connexion with Seabank Rescue Home, King-street, for the Directors, per Messrs. Kelly & Nicol, architects; shed on the south side of Virginia-street, for Mr. George Bisset, engineer.

Stained Glass & Decoration.

WINDOWS FOR LIVERPOOL CATHEDRAL.

On Saturday last we had the pleasure of viewing at the Whitefriars Glass Works portions of the painted windows made by Messrs. James Powell & Sons for the Lady Chapel of Liverpool Cathedral. The sketches and studies, we understand, were made by Mr. J. W. Brown under the supervision of Mr. J. Powell. The chapel contains fourteen windows, three three-light windows in the apse, and eleven two-light windows in the walls on either side of the apse. The chapel looking to the south, it is convenient to describe the position of the windows in this way. The scheme of the windows is that they should serve as a roll of the deeds of good women. The tracery of the apsidal windows contains three phases in the life of Eve—Eve Tempted, Eve in Adoration, and Eve as Mother of Mankind and First Housewife; the three lights of the central window illustrate the adoration of the Magi. From the base of the central light springs a tree, which spreads its branches through all the windows of the chapel, symbolising the root and the life of the Church. The lowest panels of the windows throughout contain the arms of their donors. In the right-hand window of the apse are represented St. Elizabeth, Anna the Prophetess, and Mary of Bethany; in the left-hand window Hannah, Ruth, and Sarah. The subjects of the two-light windows in the left-hand wall are as follows:—The first from the apse contains Queen Bertha of England and Queen Margaret of Scotland; the second, St. Bride of Ireland and St. Non of Wales; the third, St. Helena and St. Hilda; the fourth, St. Bega and St. Werburga (in the lower portions of this window, amongst the branches of the central tree, are represented masons and stonecarvers at work, this window and the next having been given by members of the Morrison family, builders of the Cathedral); the fifth, St. Frideswide and St. Osburga (below, amongst the branches, a bishop is represented receiving plans from the architect). In the right-hand wall the first window from the apse contains St. Margaret of Antioch and St. Etheldreda; the second, St. Agnes and St. Faith; the third, St. Catherine and St. Lucy; the fourth, St. Agatha and St. Prisca; the fifth, St. Perpetua and St. Cecilia; and the sixth, St. Anne and St. Mary Magdalene. The sills of the windows are 23 ft. above the floor level, and the lower panels will be partly veiled by a carved stone screen. The dimensions of the main lights are 24 ft. by 2 ft. 11 in. The windows are admirably designed, their colouring is harmonious and restrained, and will, we think, accord well with their future setting of red sandstone.

Sanitary and Engineering News.

QUAY EXTENSION, HARWICH.

The work of extending the Parkeston Quay is now approaching completion. The extension is 1,004 ft. in length, and, so far as traffic purposes are concerned, has a width of 129 ft. The quay itself is a ferro-concrete structure, standing upon ferro-concrete piles. The work has been constructed to the designs of Mr. John Wilson, M.Inst.C.E., Chief Engineer of the Great Eastern Railway Company, and Mr. A. E. Wilson, Chief Assistant Engineer, the actual form of concrete design adopted being Hennebique's patent. The contractors have been Messrs. A. Jackaman & Sons, of Slough, and who have been represented at Parkeston by their agent, Mr. A. H. Clarke. Messrs. Henley provided throughout all the electric cables, and Messrs. Booth Brothers, of Rodley, were the contractors for the cranes. Mr. John Wilson, the Engineer, has been represented on the works by Mr. A. C. Fellows, as resident engineer. The power-station contains five Davy Paxman's economic boilers, which are fed by Halls' feed-pumps through an economiser. There are three high-speed engines, made by Paxman, controlling the dynamos, and three hydraulic pumping sets, together with, of course, the two turbines already mentioned. The whole of the plant is provided with condensers, the necessary pumps being motor driven. Mr. H. W. Firth has been responsible for the whole of the electrical portion of the undertaking, and he has been represented at Parkeston by Mr. H. Brakes.

PROPOSED DEEP-WATER BERTH, ABERDEEN.

The question of providing a deep-water berth in the tidal harbour for the discharge of large ships that enter the port but cannot pass through the entrance to Victoria Dock at neap tides was recently considered by the Docks and Pilotage Committee of Aberdeen Harbour Board. Mr. R. Gordon Nicol, C.E., Harbour Engineer, recommended a site at Provost Matthew's Quay, estimated to cost 9,200*l*., but submitted nine alternative plans ranging in cost from 16,760*l*. to 80,400*l*. It was agreed to defer the matter till a report had been obtained as to the estimated cost of discharging vessels by lighters.

SHEFFIELD SEWAGE WORKS.

A section of the scheme for converting the present method of sewage purification at the Sheffield works to the bacteriological process has now been completed. The complete scheme includes the remodelling of the present works, and the construction of the following:—New outfall sewer and main valve-chamber, two new catch-pits and alterations to two existing catch-pits, nine new settling-tanks and the conversion of the existing tank area into eight additional tanks, deepening the two existing sludge wells and remodelling the pumping plant, sixty half-acre contact beds, 16 acres of storm beds, bridge and siphons across the River Don, roads, railways, etc. The estimated cost is 270,369*l*., exclusive of land and second contact beds (should the latter be required). The total cost of the land will be approximately 86,000*l*. The new works will be capable of dealing with a maximum rate of flow of 64½ million gallons per twenty-four hours. The old works were designed for only 10 million gallons. Twenty-four of the sixty contact beds are now completed in construction, and twelve are filled with clinker ready for working. The sum spent on the extension so far is about 100,000*l*. The scheme was designed by, and has been carried out under the supervision of, Mr. C. F. Wike, the City Engineer. Messrs. Logan & Hemingway are the contractors.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. E. H. Shorland & Brother, warming and ventilating engineers, have removed their works from Drake-street, Manchester, to the Manchester Stove Works, Failsworth, Manchester. Their telegraphic address and telephone number are now, respectively, "Shorland, Failsworth" and "No. 319 Failsworth, Manchester."——Messrs. Archibald Smith & Stevens, electric and hydraulic lift manufacturers, of London, have converted their business into a limited company under the title of "Smith, Major, & Stevens, Ltd." The previous owners, Messrs. C. G. Major, E. C. Stevens, and P. H. Stevens, together with Mr. P. C. Major, become directors, with Mr. C. G. Major as chairman.

FRESCO DECORATION IN THE TOWN HALL, LIVERPOOL.

It appears that the Committee for organising the Liverpool pageant of 1907 found themselves left with a balance in hand, and wisely determined to expend it in a permanent piece of artistic decoration which would at the same time serve as a record of the Festival. With this end they commissioned a London artist, Mr. Amschewitz, to paint four frescos in the entrance hall of the Town Hall. These are now completed, and will shortly be placed in position. The subjects are—"Liverpool a Centre of Commerce"; "The Granting by King John of the Charter of Incorporation to Liverpool"; "Industry and Peace"; and "Education and Progress." It appears that a competition was instituted in the first instance among the local artists who had worked on the pageant; it seems a pity that this should have come to nothing, but it is presumed that the results were not found sufficiently satisfactoy.

THE BRITISH FIRE PREVENTION COMMITTEE.

The work of the British Fire Prevention Committee for the session that has just commenced includes the preparation and issue of Reports in respect to a number of doors and roller shutters that have been recently tested by the Committee, and will be embodied in five Reports. Two reports are also in preparation on fire extinguishers, including a petrol extinguisher. Regarding tests to be undertaken in the near future, these include a further concluding series of door tests (mainly relating to composite doors), and the matter of roofing materials will also be shortly having the attention of the Committee.

AN OLD WELL AT RICHMOND.

While setting back a footpath in the middle of the town at Richmond, workmen have unearthed a Tudor spring which is believed to have formed part of the water supply which Henry VII. provided to feed the Old Palace.

Digitized by Google

In the survey of the palace ordered by Parliament in 1649, it is stated that there were then belonging to Richmond Court two leaden cisterns fed by three pipes of lead, one of which came from a conduit head in Richmond Town Fields called the red conduit. Cusp, an old historian of Richmond, definitely places the site of the red conduit head at the spot where the well has now been found, and the discovery of an old lead pipe projecting into the chamber seems to put the matter beyond doubt. By the chamber, which is being left open for the inspection of experts, is a heavy stone doorway, by the side of which are the remains of a hinge and a bolthole.—*Times.*

OPEN SPACES AND RECREATION-GROUNDS.

The Royal Agricultural Society have sold, at a price of 5,000*l.*, 10 acres of Park Royal, Willesden, to the medical schools of Middlesex and St. Mary's Hospitals as an athletic and recreation ground.—Mr. W. Randall, an alderman of the borough council, has presented to the Hemel Hempstead Town Council 7 acres of land for preservation as a public park.—Under the directions and supervision of Colonel Sexby, Chief Officer of the Parks Department, London County Council, a golf course, nearly three and a half miles in circuit, has been made, at an outlay of some 500*l.*, in an undulating track of what until four or five years ago was arable land of Hainault Forest; the surface altitudes range from 135 ft. to 312 ft., and the hazards are, for the present, formed of the natural soil.

NEW HEATING AND VENTILATING SCHEME AT ST. PAUL'S.

A faculty has now been granted to the Dean and Chapter of St. Paul's Cathedral whereby a portion of a vault in the south-east corner of the churchyard may be used in connexion with the new heating and ventilating scheme of the building. For a long time it has been felt that the existing arrangements were unsatisfactory. The heat has been supplied by a number of old-fashioned stoves burning coke, but the circulation of the warmed air left much to be desired. The Dean and Chapter, therefore, decided a few months ago to instal an entirely new system of heating and ventilation by a combination of hot air and hot water, which is now being introduced under the supervision of Mr. E. J. Harding, the clerk of the works. On the north-west side of the Cathedral, outside the walls, a chamber is being constructed below ground, where the boiler for the hot water and the engine for the hot-air plant will be placed. A similar chamber will be constructed in a portion of the old vault on the south-east side of the Cathedral, for which the faculty already referred to was obtained. In ordinary circumstances the fresh air will be drawn in from the outside, warmed, and then passed into the Cathedral, but when the weather is too cold the inlets will be closed, and the air obtained from the interior of the building. For the distribution of the hot air and hot water a circulating pipe has been run from the outside chambers all round the crypt, by which the air in the latter apartment will be heated to the required temperature. To do this it was found necessary to pierce the wall of the Cathedral below ground, and in doing so Mr. Harding discovered many relics of the old walls, showing that Wren had removed their outer casing of stone, and simply left their core of chalk standing where it was. It was impossible to preserve these ancient fragments, but before their destruction they were photographed and accurately measured. The hot air will pass from the crypt to the interior of the Cathedral through a series of thirty-three gratings in the floor, of which fifteen have been specially constructed for the new system. The hot-water pipes will be carried to a high level in the interior of the building, and made to communicate with a series of radiators fixed on the cornice at the back of the gilded railings. Another series will be placed at the back, on the wall over the nave aisles, for the purpose of preventing a down draught. By the combination of these two currents—a steady current of hot air from the crypt and another current of air warmed by hot water from above—it is hoped to secure an equable temperature of 58 deg. throughout the Cathedral. The new system is expected to be in operation early in the New Year.

DERBY ARCHITECTS' SOCIETY AND THE LOCAL EDUCATION COMMITTEE.

A special meeting of the Derby Education Committee was recently held to consider a question that had been raised in connexion with the plans for the new schools on the Osmaston-road. The Chairman, Dr. Bemrose, explained that the Committee had decided to advertise for plans, but they had received a communication from the Derby Architects' Society pointing out that the form they had decided to advertise in was not in accordance with the rules of the Society. In consequence of this, the Committee came to the conclusion that it would be better not to advertise in the way they had decided upon, but to adopt a different course. If, said the Chairman, they had followed the recommendation of the Architects' Society they, as a Committee, would not make the awards at all. The architects desired that an assessor should be appointed from the Royal Institute of British Architects, and if that were done the Committee would have no say whatever in the matter. This the Committee were not prepared to accede to, and they recommended that the Education Committee rescind a resolution, passed by the Sites and Building Sub-Committee on October 11, and approved by the Education Committee on October 25. This resolution had empowered the Sub-Committee to invite local architects to submit plans for the proposed school in competition. The Sub-Committee further suggested that the Education Committee be recommended to empower the Sites and Building Sub-Committee to appoint an architect to prepare plans for the proposed new school on the Osmaston-road.—Both these suggestions were subsequently agreed to.

QUALIFIED PLUMBERS BY EXAMINATION.

At King's College, London, on the 6th inst., a number of master and operative plumbers attended for practical and theoretical examination for the purpose of registration under the National Registration of Plumbers. The practical examination consisted of tests in lead bossing, also bending and wiping large and small joints as required for good-class domestic sanitary plumbing. In the theoretical examination questions were put to the candidates dealing with subjects of domestic sanitation generally, ventilation, and the connexion of water services to domestic dwellings and public institutions. The examiners appointed by the London Council were Messrs. John Knight, J. Johnson (master plumbers), G. H. Manser and W. Smeaton (operative plumbers). Candidates attended from all parts of London, as well as from several provincial towns, including Loughborough, Slough, Stevenage, and Whetstone. Nine candidates succeeded in passing the examination, and were nominated to the General Council for Registration under the National Registration of Plumbers, and admission to the register.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.

At a meeting of the Glasgow and West of Scotland Technical College Architectural Craftsmen's Society, Mr. James Flett, President, in the chair, Professor Charles Gourlay delivered a lecture entitled "The Building of a House." Beginning by defining building construction as the general sum of all the building crafts controlled as regards design by the master mind of the architect, the Professor proceeded to treat his subject on the basis of this definition. He pointed out how fundamentally necessary it was that the student should study at least one entire building to enable him to appreciate the many varied processes which are involved in the construction of building. To emphasise this view he then showed a series of slides giving complete working drawings for a country house, in which as many different constructional details had been included as possible, while maintaining the unity of the design as a whole. In conclusion, he urged the importance of all architectural craftsmen pursuing a general course of this nature in building construction.

Law Reports.

WITHDRAWING A NOTICE TO TREAT: ACTION AGAINST THE WOOLWICH BOROUGH COUNCIL.

IN the Court of Appeal, before the Master of the Rolls and Lords Justices Moulton and Farwell, on the 8th inst., the case of Wild and others *v.* the Woolwich Borough Council was heard, on the plaintiffs' appeal from a decision of Mr. Justice Eve.

It appeared that the plaintiffs were, as trustees of a will of a testator who died in 1810, entitled to certain house property in Woolwich. Before 1904 the defendants had decided to widen a street called Artillery-place, Woolwich, and for that purpose approached the plaintiffs with a view to acquiring the necessary property, but it was found that the plaintiffs were trustees without a power of sale. On May 10, 1906, notice to treat was served upon the plaintiffs for the purchase of the necessary property required for widening the street. Plaintiffs afterwards abandoned the idea of complying with the notice to treat as it involved the transfer of a part only of the property, leaving a strip which would be useless. Plaintiffs therefore intimated that they would take steps to prevent the defendants from acting upon the notice. Plaintiffs also pointed out that they were merely reversioners subject to leases with many years to run. Defendants stated, on being asked, that they did not intend to serve the tenants with the notice. On October 9, 1907, defendants served the plaintiffs with a fresh notice for the purchase of the whole of the property mentioned in the May notice. To the latter notice the plaintiffs objected, upon the ground that it included property wholly unnecessary for widening the street, and they gave notice that they would apply for an injunction to restrain the defendants from acting upon it unless it was varied. Mr. Justice Eve held that the service of a notice to treat by a local authority under the compulsory powers of Michael Angelo Taylor's Act, in order to acquire property for the purpose of widening a street, did for some purposes create the relationship of vendor and purchaser between the parties, but the landlord must either treat the notice as a contract to purchase the lands as a whole or repudiate it. In other words, he could not accept it in part and repudiate it in part. His lordship accordingly held that there was no ground for saying that the defendants were liable in damages, and dismissed the action with costs. Hence the present appeal of the plaintiffs.

At the conclusion of the arguments of counsel their lordships held that the appellants had entirely failed to make out any claim for compensation, and dismissed the appeal with costs.

Mr. Macmorran, K.C., Mr. Jessel, K.C., and Mr. Quin appeared for the appellants; and Mr. C. A. Russell, K.C., Mr. P. O. Lawrence, K.C., and Mr. Courthorpe-Munroe for the respondent Council.

RIGHT TO MAKE TUNNEL UNDER RAILWAY.

THE case of the South-Eastern Railway Company *v.* Associated Portland Cement Company came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Moulton and Farwell, on the 5th inst., on the appeal of the plaintiff company from a judgment of Mr. Justice Swinfen Eady, in the Chancery Division.

This was an action by the plaintiffs for an injunction to restrain the defendants from making any tunnel, archway, or excavation under their branch line running from London to Gravesend. Defendants were the assignees of a lease granted by a Mr. W. M. Calcraft in 1884 of certain land (through which the plaintiffs' railway ran) at Northfleet, in Kent, with the right of working the chalk under the land. The lease contained a proviso that during the continuance of the term the rights and privileges of the lessor under an agreement made in 1847 between the plaintiffs and Mr. J. H. Calcraft, the lessor's predecessor in title, should be vested in the lessees. By the agreement it was provided that the railway company should make a level crossing, and that Mr. J. H. Calcraft or his assigns should be entitled to make a tunnel or archway under the branch railway, then in contemplation, where it would pass through the land which the railway company required to purchase, provided that the excavation did not interfere with the railway, and that the work was done under the direction of and to the satisfaction of the railway company's engineer. The conveyance of the land required by the railway company was dated in December, 1847, and by it the right to make the tunnel was excepted, and reserved to J. H. Calcraft, his heirs, appointees, and assigns. Mr. J. H. Calcraft died in 1880, and under his will Mr. W. M. Calcraft became owner of the land through which the railway had been made, and part of it formed the subject of the lease of 1884. Defendants having worked out the chalk to the north of the railway, proposed to make a tunnel in accordance with the right reserved, but the railway company objected, and brought the present action to restrain them doing so. Mr. Justice Swinfen Eady held that the defendants had a legal right to make the tunnel, and dismissed the action with costs. Hence the present appeal of the railway company.

Mr. Micklem, K.C., and Mr. P. F. Wheeler appeared for the appellants: and Mr. Macnaghten, K.C., and Mr. MacSwinney for the respondents.

Their lordships, without calling upon counsel for the respondents, held that the decision of the learned judge was perfectly right, and dismissed the appeal with costs.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xv.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

* NOVEMBER 19.—**Yorkshire.**—SECONDARY SCHOOL.—The North Riding of Yorkshire C.C. invite designs of a proposed secondary school for girls. See advertisement in this issue for further particulars.

NOVEMBER 24.—**Bury.**—LAYING-OUT GARDEN CITY SUBURB.—The Bury Housing and Town-Planning Association offer three prizes for a design for laying-out a garden city suburb. For further particulars see advertisement in our issue of October 30.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

NOVEMBER 30.—**Workington.**—SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. For further particulars see advertisement in our issue of October 30.

DECEMBER 1.—**Bangor.**—LAYING-OUT A PARK.—The U.D.C. of Bangor (Co. Down) invite a scheme for the laying-out of a public park, 20 acres in extent, on ground acquired by them within their District. A premium of 30*l.*, to include all expenses, will be paid to the person whose scheme may be selected. Mr. J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.

DECEMBER 1.—**Tralee.**—PROPOSED CARNEGIE LIBRARY AND TECHNICAL SCHOOL.—The U.D.C. propose erecting this building, at a cost not exceeding 4,500*l.*, and invite competitive designs for same, according to "Instructions and Conditions," copies of which may be had by intending competitors on application to the Town Clerk, Tralee. Prizes of 20*l.* and 10*l.* to be awarded to the designs placed first and second by the assessor.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See October 2 and 23; also advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1.—**Oldham.**—PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 15.—**Blyth.**—SCHOOL.—Blyth U.D.C. Education Committee invite tenders for the erection of proposed new schools near Morpeth-road, Blyth. The plans, etc., can be seen at the Education Offices, Bridge-street, Blyth. Bills of quantities, etc., can be had on payment of a deposit of 2*l.* 2s.

NOVEMBER 15.—**Medomsley.**—HALL.—For new hall and other alterations at Medomsley branch, for the Annfield Plain Industrial Co-operative Society, Ltd. Drawings, etc., may be seen, and forms of tender obtained, at the office of Mr. Geo. Thos. Wilson, architect, 22, Durham-road, Blackhill.

NOVEMBER 15.—**Skelmanthorpe.**—LODGE, ETC.—Erection of a lodge and entrance gates, Commercial-road, Skelmanthorpe. Plans may be seen, and bills of quantities obtained at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

NOVEMBER 16.—**Barnby Moor.**—HOUSE.—Erection of a new house at Barnby Moor, near Retford, for Mr. J. Spencer. Names to Mr. G. A. Wilson, architect, Hartshead-chambers, Sheffield.

NOVEMBER 16.—**Strabane (Ireland).**—IMPROVEMENTS.—For certain improvements to the Workhouse Infirmary, for the Guardians, in accordance with plans, etc., which may be seen at the Clerk's Office.

NOVEMBER 17.—**Barrow-in-Furness.**—ALTERATIONS.—Builder's, joiner's, plumber's, and other work required in certain alterations to the store-rooms, adjoining the receiving wards, at the Workhouse, Roose. Plans, etc., may be inspected, and bills of quantities obtained, at the office of the architect, Mr. H. T. Fowler, A.R.I.B.A., Cornwallis-street.

NOVEMBER 17.—**Fermoy.**—LABOURERS' DWELLINGS.—The Fermoy U.D.C. invite tenders for the erection of six labourers' dwellings at Wolfe Tone Park, Fermoy, together with the construction of footpaths, fences, etc., also the laying of sewerage and water supply. Plans, etc., prepared by Mr. D. J. Buckley, C.E., M.R.I.A.I., Cork, may be examined and copied at the office of the Urban Council or of the architect. Forms of tender may be obtained from the Clerk or the Engineer. A deposit of 20*l.* must accompany each tender.

NOVEMBER 17.—**Lanchester.**—CONVERTING.—For the conversion of lodging-house at Lanchester into two houses, for the Guardians. Drawings, etc., may be seen, and forms of tender may be obtained, at the office of Mr. G. T. Wilson, architect, 22, Durham-road, Blackhill.

NOVEMBER 17.—**Winchester.**—SHOPS.—Erection of three shops in Jewry-street, Winchester, for the Winchester Corn Exchange Company. Plans, etc., may be seen, and quantities obtained, at the offices of Mr. J. Ashton Sawyer, Chartered Surveyor, 59, High-street, Winchester.

NOVEMBER 18.—**Hull.**—SCHOOL.—The Education Committee invite tenders for the erection of a school in Sidmouth-street. Drawings, etc., may be seen at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull, and quantities obtained, upon a deposit of 2*l.* 2s. Remittances to be made payable to the City Treasurer.

NOVEMBER 18.—**Leeds.**—DIVISIONAL POLICE-STATION, MILLGARTH-STREET.—The Watch Committee invite tenders for the whole or any portion of the work required in connexion with additions and alterations to the above-named building. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the offices of the architect, Mr. Archibald Neill, F.R.I.B.A., 38, Park-row. A deposit of 1*l.* 1s. will be required.

NOVEMBER 18.—**Loughborough.**—ALTERATIONS.—For alterations at the Hickling's School, Ashby-road, for the Education Committee. Plans may be seen, and schedule of quantities obtained, at the offices of Messrs. Barrowcliff & Allcock, architects, Town Hall-chambers, upon deposit of 1*l.* 1s.

* NOVEMBER 18.—**Romford.**—BOILER-HOUSE, ETC.—The Guardians of the Romford Union invite tenders for new boiler-house and Lancashire boiler with Galloway tubes at Workhouse, Romford. See advertisement in this issue for further particulars.

NOVEMBER 19.—**Heywood.**—HOUSES.—Erection of twenty houses in Mount-street and Newbold-street, Heywood. Plans, etc., may be seen, and quantities obtained, at offices of Messrs. Sutcliffe & Sutcliffe, architects, Todmorden.

NOVEMBER 19.—**Newbury.**—COTTAGES.—Tenders are invited from builders in business within seven miles of Newbury Bridge for the erection of ten cottages for the Newbury T.C. Plans, etc., may be seen at office of Mr. S. J. L. Vincent, A.M.Inst.C.E., Borough Surveyor.

NOVEMBER 20.—**Dores.**—ALTERATIONS, ETC.—Mason, carpenter, slater, plumber, plasterer, and painter works of additions, alterations, and improvements to be made to the Manse and Church of Dores; also for several hundred yards of tile drains in glebe. Plans, etc., with Mr. Thos. Munro, architect, 62, Academy-street, Inverness.

NOVEMBER 20.—**Plymouth.**—STABLING.—Erection of stabling for about thirty horses in Plymouth. Plans and specifications can be inspected on application to Messrs. Truscott & Sons, Octagon-mews, Plymouth.

* NOVEMBER 20.—**Sussex.**—SCHOOLS, ETC.—The East Sussex Education Committee invite tenders for (1) new school, etc., at Willingdon; (2) new school, etc., at Heathfield; (3) alterations to school at Newhaven. See advertisement in this issue for further particulars.

NOVEMBER 20.—**Workington.**—EXTENSION OF METER HOUSE.—For extension of the meter house at the Stainburn Reservoir, for the Corporation. Plans, etc., may be seen at the office of Mr. H. B. Williams, Borough Engineer and Surveyor, Town Hall, Workington.

NOVEMBER 22.—**Abertillery.**—SWIMMING BATH.—The construction of a large swimming bath, boiler-house, and other buildings for the Committee of the Powell's Tillery Workmen's Institute, Abertillery. Plans may be seen with the Secretary, Mr. C. W. Spalding, Powell's Tillery Institute, Abertillery, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff, where bills of quantities may be obtained.

NOVEMBER 22.—**Capel Bangor.**—REROOFING.—For reroofing and making alterations to Capel Bangor Church, near Aberystwyth. Plans, etc., may be obtained on application to Mr. G. T. Bassett, A.R.I.B.A., architect and surveyor, Aberystwyth.

NOVEMBER 22.—**Manchester.**—ADDITIONS.—The Paving, etc., Committee invite tenders for alterations and additions to messrooms, sheds, etc., at the Pond-street Highways Yard. Drawings may be seen, and specification, etc., obtained, at the office of the City Architect, Town Hall, upon payment of 1*l.* 1s. All cheques or postal orders are to be made payable to the order of the Corporation of Manchester.

NOVEMBER 22.—**Stanley, Co. Durham.**—NEW COUNCIL OFFICES, ETC.—The Stanley U.D.C. invite tenders for the erection of new offices in Front-street, Stanley. Bills of quantities, etc., may be obtained from, and plans and specifications seen at, the office of Mr. John Geo. Ridley, Clerk to the Council, Stanley, R.S.O., Co. Durham, or the architect for the work (Mr. John W. Wilson, No. 3, Coleshill-street, Sutton Coldfield, Warwicks.), on payment of the sum of 2*l.* 2s.

NOVEMBER 22.—**Wick.**—MANSE.—The Deacons' Court invite tenders for the respective trades for proposed U.F. Manse at Wick. Copies of schedules, etc., on application to Mr. Wm. Sutherland, Ashley House, Wick. The drawings may also be seen there.

NOVEMBER 23-DECEMBER 1.—**Pontypridd.**—IRON BUILDINGS.—Pontypridd Guardians invite designs and tenders for the erection of iron buildings on a site in Court House-street, Pontypridd. A block plan of the site and of the size of the suggested buildings may be seen at office of Mr. Wm. Sprckett, Clerk, Union Offices, Pontypridd.

NOVEMBER 24.—**Inverness.**—MASON AND CARPENTER WORK, TRAMWAY SCHEME.—Inverness T.C. invite tenders for mason and carpenter work. Plans may be seen, and specification, etc., obtained, at the office of the Burgh Surveyor.

NOVEMBER 24.—**Sevenoaks.**—BATHROOMS, ETC.—The Guardians invite tenders for constructing bath-rooms and extra water-closets at the Union Workhouse, situated at Ide Hill, Sundridge, near Sevenoaks. Plans, etc., can be seen, and forms of tender obtained, at the office of the architect, Mr. Ernest Pawley, 86, High-street, Sevenoaks.

NOVEMBER 25.—**Moy.**—ADDITIONS TO HOTEL.—Additions to Maghery Hotel, Moy, Co. Tyrone, for Mrs. Cott, proprietress. Plans, etc., can be obtained at office of Mr. Charles Macalister, architect, Whitehall-buildings, Belfast, or from Mrs. Corr.

NOVEMBER 25.—**Rainhill.**—COTTAGES.—The Committee of Visitors of Lancashire Asylums Board, County Asylum, Rainhill, invite tenders for the erection of six cottages at this Asylum. The drawings may be inspected, and all information obtained, at the Engineer's office. Bills of quantities can be obtained on application to Mr. Jas. Gornall, Clerk and Steward, Clerk's office, Rainhill Asylum, on payment of 2*l.* 2s. (in cash) deposit.

NOVEMBER 26.—**Prestwich.**—SCHOOL.—The Lancashire Education Committee invite tenders for the erection of a new elementary school at Prestwich, near Manchester, to accommodate 548 scholars. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l.*

NOVEMBER 29.—**Royal Leamington Spa.**—GREENHOUSE.—The T.C. invite tenders for (1) the excavation, concrete, and brickwork required for the erection of a greenhouse, 100 ft. by 12 ft.; and (2) the joiners', glaziers', and painters' work needed for the completion of the same. Drawings, etc., may be seen at the office of the Borough Engineer at the Town Hall.

* NOVEMBER 29.—**Winchmore Hill.**—WARD BLOCK, ETC.—The Enfield and Edmonton Joint Hospital Board invite tenders for erection of an additional ward block, an isolation block, and extensions to administration block at the Isolation Hospital, World's End. See advertisement in this issue for further particulars.

NOVEMBER 30.—**Erdington.**—LAVATORIES, ETC.—Erdington U.D.C. Highways and Buildings, Tramways and Parks Committees invite tenders for the erection of the following buildings, viz.:—Public lavatories, Orphanage-road; public lavatories, Woodend-road; tramways waiting-rooms and lavatories at Chester-road; open-air swimming baths, boathouse, landing stage, etc., small bridge

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

spanning stream, and shelters, at the new Reservoir Park. Drawings, etc., may be seen, and copies of bills of quantities, etc., obtained, upon application to Mr. Herbert H. Humphries, Engineer and Surveyor, the Council House, Erdington. Contractors will be required to deposit a sum of 5*l.* with the Council's Accountant Clerk.

DECEMBER 1.—**Edinburgh.**—GALLERIES.—The Commissioners of H.M. Works and Public Buildings invite tenders for the structural work, Royal Scottish Academy (new galleries). Drawings, etc., may be seen on application to the Principal Architect, H.M. Office of Works, Parliament-square, Edinburgh. Bills of quantities and forms of tender may be obtained at the same address on payment of 1*l.* 1s.

DECEMBER 4.—**Galway.**—SCHOOL.—Building and furnishing a new national school, according to the plans and specifications of the Board of Works. Plans, etc., may be seen at the office of Mr. Tighe, Board of Works Engineer, Galway, or at the Parochial House, Kiltulla, Athenry.

DECEMBER 6.—**Kirkburton.**—DRYING HORSES.—The Storthes Hall Asylum Sub-committee invite tenders for installing twenty-seven additional drying horses in the laundry at the Storthes Hall Asylum, Kirkburton, near Huddersfield. Specifications, etc., can be obtained on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

✱ DECEMBER 6.—**Salford.**—ANNEXE EXTENSION.—The Salford Corporation invite tenders for a new annexe extension and sundry alterations to Town Hall and Health Offices in Bexley-square, Salford. See advertisement in this issue for further particulars.

✱ NO DATE.—**Mill Hill.**—VILLAS.—Tenders are invited for the erection of two pairs of villas at Mill Hill. See advertisement in this issue for further particulars.

NO DATE.—**Swinnow, Bramley.**—HOUSES AND SHOPS.—Tenders (all or any trades) for building houses and shops at Swinnow, Bramley. Quantities furnished. Apply Patchett, architect, 65, Highfield-road, Bramley.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 15.—**Flexford.**—BRIDGE.—The R.D.C. of Lymington invite tenders for the building of a ferro-concrete bridge over the stream at Flexford, between the Parishes of Sway and Hordle. Particulars to be obtained of Mr. S. Crittall, Surveyor, Sway.

NOVEMBER 16.—**London.**—CROSSINGS, ETC.—The Secretary of State for India in Council invites tenders for crossings and switches. The conditions of contract may be obtained on application to the Director-General of Stores, India Office, Whitehall, S.W.

NOVEMBER 17.—**Eccles.**—HEATING APPARATUS.—The Corporation invite tenders for the supply and fixing of the heating apparatus required at Beech-street Council School, now in course of erection. Drawings may be inspected, and further particulars obtained, at the office of the architect, Mr. Henry Lord, 42, Deansgate, Manchester, and a copy of the conditions, etc., may be obtained from Mr. Edwin Parkes, Town Clerk, Town Hall, Eccles, on payment of 10s.

NOVEMBER 19.—**Manchester.**—RISING MAIN.—Manchester Corporation Electricity Committee invite tenders for laying a 10-in. diameter rising main from the pumping station at Clayton Vale to the Stuart-street generating station. Forms of tender, etc., may be obtained on application to Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester, on payment of a fee of 2*l.* 2s. Drawings, etc., may be inspected at the offices of the engineers, Messrs. C. S. Allott & Son, 46, Brown-street, Manchester.

NOVEMBER 19.—**Warwick.**—SINKING A WELL.—Sinking and lining a borehole about 800 ft. in depth, together with test pumping and other works. Specifications, etc., may be obtained from Mr. J. C. Melliss, M.Inst.C.E., civil engineer, 264, Gresham House, London, E.C., upon the payment of 1*l.* 1s.

NOVEMBER 20.—**Birmingham.**—TELEPHONE INSTALLATION.—The Guardians invite tenders for the maintenance of their private telephone installation at the Birmingham Workhouse, Dudley-road, for a period of twelve months. Further information can be obtained on application to the Master of the Workhouse, Dudley-road.

NOVEMBER 23.—**Edinburgh.**—ELECTRICAL INSTALLATION.—Edinburgh Corporation invite tenders for the electrical installation at M'Leod-street Police-station. The specification, etc., can be obtained at the office of Mr. Frank A. Newington, Engineer, Electricity Supply Station, Dewar-place, Edinburgh, on payment of a deposit of 1*l.* 1s.

NOVEMBER 23.—**Leeds.**—ELECTRIC LIGHTING.—Installing and lighting throughout the Kingston Unity Friendly Society's Hall, Union-street, Leeds, with electric fans in various parts. Mr. A. Wright, Secretary, Property Committee, K.U. Hall, Leeds.

NOVEMBER 23.—**London.**—GIRDERS.—Great Western Railway Directors invite tenders for the supply of about 200 tons of steel bridge girders and other iron and steel work of British manufacture. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer, Paddington Station, London.

✱ NOVEMBER 23.—**London, W.**—IRON STAIRCASE.—The Guardians of Paddington invite tenders for iron fire-escape staircase at their Workhouse, Harrow-road, W. See advertisement in this issue for further particulars.

✱ NOVEMBER 23.—**Plymouth.**—SHELTERS.—The Corporation of Plymouth invite designs and tenders for supply, delivery, and fixing of No. 4 ornamental shelters in the Pleasure-grounds. See advertisement in this issue for further particulars.

NOVEMBER 24.—**Inverness.**—TRAMWAY SCHEME.—The Inverness T.C. invite tenders for the supplying and laying of about 1,667 yds. of permanent way. Plans may be seen, and specification, etc., obtained, at the office of Mr. T. H. Scott, C.E., Burgh Surveyor, on payment of the sum of 1*l.* 1s.

NOVEMBER 24.—**Lenham.**—HEATING.—Kent Education Committee invite tenders for the improvement of the heating apparatus required to be carried out at Lenham Council School. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. F. Day, Lenham.

DECEMBER 1.—**North Dublin.**—ELECTRIC LIGHTING.—The North Dublin Board of Guardians invite tenders for the wiring and fittings for electric lighting of the Workhouse buildings, nursing sisters' residence, and North City dispensaries. Plans, etc., may be inspected at the office, North Brunswick-street, Dublin, by appointment, or copies of either may be obtained from the consulting engineer, Mr. Louis J. Lawless, A.I.E.E., 27, Castlewood-avenue, Rathmines, on payment of the cost of production.

✱ DECEMBER 1.—**Pontypridd.**—IRON BUILDINGS.—The Guardians of the Pontypridd Union invite designs and tenders for erection of iron buildings on a site in Court House-street, Pontypridd. See advertisement in this issue for further particulars.

NO DATE.—**Glynneath.**—DRIFTS.—Tenders are invited for driving a pair of across measures drifts, dipping 10 in. per yard. Length of drifts, 350-400 yds. Further particulars on application to the Abercregwm Estate and Collieries Office, Glynneath.

NO DATE.—**Kippax.**—VENTILATION.—Ventilation of an infants' classroom at the Kippax Provided School. Specification and quantities will be supplied on application. Mr. Robert J. Smith, Education Offices, Garforth, near Leeds.

NO DATE.—**Llanarth Council School.**—HEATING.—Estimates are invited for the installation of a low-pressure hot-water heating apparatus at the school. Plan, etc., can be seen at the office of Mr. G. Dickens-Lewis, County Architect.

MISCELLANEOUS.

NOVEMBER 15.—**Finchley.**—IRON FENCING.—The Finchley U.D.C. invite tenders for the supply, delivery, and erection in the Regent's Park-road of about 780 yds. run of 4 ft. 6 in. unclimbable wrought-iron fencing. Drawing, etc., may be seen, and form of tender obtained, on application to the Council's Engineer and Surveyor, Council Offices, Church End, Finchley, N.

NOVEMBER 17.—**Oldham.**—BOWLING GREEN.—Oldham Parks Committee invite tenders for the construction of bowling green at Alexandra Park. Particulars may be obtained at Borough Surveyors' Office.

NOVEMBER 20.—**Bridgend.**—FIRE-EXTINGUISHING APPARATUS.—For fire-extinguishing apparatus at the Workhouse Infirmary, for the Guardians of Bridgend and Cowbridge Union. Plan, etc., may be seen, and particulars obtained at office of Mr. P. J. Thomas, architect, Bridgend.

NOVEMBER 24.—**Wakefield.**—DESKS.—The West Riding Education Committee invite tenders for the supply of dual desks for infants for a period of twelve months. Full particulars may be obtained on application to Mr. J. W. Horne, Education Department (Elementary Branch), County Hall, Wakefield.

NOVEMBER 26.—**Erdington.**—FENCING, ETC.—Erdington U.D.C. Parks and Allotments Committees invite tenders for the provision and erection of unclimbable wrought-iron fencing and gates at the Goosemoor-lane Allotments and the New Reservoir-park. Copies of specification, etc., may be obtained upon application to Mr. Herbert H. Humphries, Engineer and Surveyor, Council House, Erdington.

DECEMBER 1.—**West Hartlepool.**—SCAVENGING, SEATON CAREW DISTRICT.—The Corporation invite tenders for the supply of good horses and carts, with suitable drivers, for the collection and disposal of the whole of the house refuse from the Seaton Carew District. Specification can be seen, and form of tender obtained, upon application at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings.

DECEMBER 4.—**Winterton.**—SCAVENGING.—Winterton U.D.C. invite tenders for the weekly scavenging of 230 pan closets in the above district for a period of one year. Mr. W. Holgate Cross, Clerk, Winterton.

NO DATE.—**Hessle.**—HAULAGE.—Tender wanted, haulage 200,000 bricks, Hessle to Bridlington.—Eckles, North Bridge, Hull.

NO DATE.—**Leeds.**—HAULAGE.—Price wanted for hauling 600 tons bricks. Address E 165, the *Yorkshire Post*, Leeds.

NO DATE.—**Roydon.**—GUTTERING, ETC.—Repairs, fix guttering pipes, etc., to Roydon Town Houses. Full particulars can be obtained from Mr. H. Twaite; or Overseers, Roydon P.C., Roydon, King's Lynn.

NO DATE.—**Wallsend.**—CARRYING DUST.—Carrying 200 tons of flue dust out to sea. For particulars apply by letter to the Newcastle-upon-Tyne Electric Supply Company, Ltd., Carville Power Station, Wallsend.

PAINTING, etc.

NOVEMBER 17.—**Manchester.**—PAINTING.—The Guardians of the Poor of the Township of Manchester invite tenders for painting, etc., at their offices in New Bridge-street, Manchester. Specifications may be obtained at the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester, upon payment of a deposit of 10s. 6d.

NOVEMBER 18.—**West Derby.**—POINTING ETC., MILL-ROAD INFIRMARY.—The Guardians invite tenders for painting, etc., the buildings of the Administrative Block and the Nurses' Home at the Infirmary. Specification may be seen at the office of the Steward, on the premises.

NOVEMBER 25.—**Leeds.**—PAINTING.—Painting the interior and exterior of the Public Baths at Union-street, Holbeck, and Kirkstall-road. The specification may be seen, and forms of tender obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings.

✱ NOVEMBER 30.—**Leyton.**—CLEANING, PAINTING, REPAIRS, ETC.—The Leyton U.D.C. invite tenders for cleansing, painting, and repairs at two schools and other works to be executed during the Christmas vacation. See advertisement in this issue for further particulars.

ROADS, SANITARY, AND WATER WORKS.

✱ NOVEMBER 15.—**Beckenham.**—MAKING-UP STREETS, ETC.—The Beckenham U.D.C. invite tenders for making up various private streets in their district. See advertisement in this issue for further particulars.

NOVEMBER 15.—**Blackburn.**—STREET WORKS.—The Highway Committee invite tenders for excavating, forming, and paving streets. Plans, etc., may be seen, and all information obtained, on application at office of Mr. William Stubbs, A.M.Inst.C.E., Borough and Water Engineer, Municipal Offices, Blackburn.

NOVEMBER 15.—**Fulbourn Asylum, Cambridge.**—DRAINAGE.—Tenders are invited by the Committee for new drainage scheme. Bills of quantities, etc., may be obtained from the architect, Mr. A. P. MacAlister, F.R.I.B.A., 20, St. Andrew's-street, Cambridge, on payment of a deposit of 1*l.* 1s.

NOVEMBER 15.—**Leeds.**—PAVING, ETC.—Leeds Highways Committee invite tenders for paving and flagging of private streets. Drawings may be seen at the City Engineer's Office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

NOVEMBER 15.—**Logierieve.**—WATER SUPPLY.—Estimates are wanted for the carrying out of the work in connexion with a new water supply at Logierieve (Gordon's College Lands: Estate of Orchardtown). Mr. Thos. Fotheringham, Factor, Office, Gordon's College.

NOVEMBER 15.—**Northwich.**—PAVING.—The plans, etc., lie at the Council Offices, Northwich, for the inspection of all persons desirous of tendering for about 2,140 super. yds. of sett paving in Witton-street, Northwich. Mr. J. Arthur Cowley, Clerk of the Council, Council Offices, Northwich.

NOVEMBER 15.—**Spennymoor.**—MAKING-UP.—The Spennymoor U.D.C. invite tenders for the making of back Coulson-street, Spennymoor. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. C. R. Spencer, Surveyor to the Council, Silver-street, Spennymoor.

NOVEMBER 16.—**Aldershot.**—MAKING-UP.—Aldershot U.D.C. invite tenders for the making-up of a part of St. Joseph's-road. Plans, etc., may be seen, and full particulars obtained, on application to Mr. Fred C. Uren, A.M.Inst.C.E., Surveyor to the Council.

NOVEMBER 16.—**Filey.**—WATER MAINS.—Filey U.D.C. Water and Gas Committee invite tenders for the excavation of a trench for a water main about 4,450 lin. yds. in length, extending from the reservoirs at Hunmanby to the town of Filey, and for other work. Specifications can be seen at the office of the Council, Queen-street, Filey, and particulars obtained from Mr. Henry Tobey, Engineer, Malton, Yorks.

NOVEMBER 16.—**Filey.**—WATER MAINS.—Filey U.D.C. Water and Gas Committee invite tenders for the supply of about 4,400 yds. of 8-in. cast-iron water mains, etc. Specification may be inspected at the offices of the Council, Filey, or a copy will be forwarded by Mr. Henry Tobey, Engineer, Malton, Yorkshire, on receipt of 4s. 6d. (not returnable).

NOVEMBER 16.—**Glastonbury.**—WATER MAIN.—For 80 yds. of 6-in. cast-iron main, constructing brick inlet well, and other works, at the Edgarley Reservoir, for the Corporation. Copies of plan, etc., can be obtained at the office of Mr. George Alves, Borough Surveyor, Glastonbury, on payment of 1*l.* 1s.

✱ NOVEMBER 16.—**London, E.C.**—STONE PAVING.—The Streets Committee of the Corporation of London invite tenders for repairs and maintenance of all works of stone paving in the carriageways and footways of the City. See advertisement in this issue for further particulars.

NOVEMBER 16.—**Wallingford.**—SEWAGE WORKS.—The R.D.C. of Wallingford invite tenders for the work required in connexion with the extension of the sewage farm, including the construction of a concrete carrier, together with valves, etc. Plan, etc., may be seen, and copies of the specification, etc., may be obtained, at office of Mr. G. F. Slade, Clerk to the R.D.C. of Wallingford, 7, St. Martin's-street, Wallingford, Berks, upon the deposit of 1*l.* 1s.

NOVEMBER 17.—**Bury.**—CULVERTS.—The Corporation of Bury invite tenders for the construction of about 50 yds. of stone and brick and concrete culverts at Goodlad-street and Walshaw-road. Drawings may be seen, and specifications, etc., obtained upon application to Mr. Arthur W. Bradley, A.M.Inst.C.E., Borough Engineer and Surveyor, Bank-street, Bury.

NOVEMBER 17.—**Horwich.**—STREET WORKS.—Horwich U.D.C. invite tenders for the paving, sewering, levelling, flagging, etc., of several streets in the Beehive District in accordance with plans, etc., prepared by the Surveyor, Mr. Thos. Green, which may be inspected at offices of Mr. Peter Taberner, Clerk to the Council, Council Offices, Horwich.

NOVEMBER 17.—**Kingswood.**—SEWERAGE WORKS.—Kingswood U.D.C. invite tenders for the laying of about 120 yds. of 9-in. sanitary pipe sewers, with manholes and ventilators, near the Reformatory-path. Also, for about 362 yds. of 9-in. sanitary pipe sewers, with manholes and ventilators, on Holly Hill-road, in two separate contracts. Plans, etc., may be seen at the Council's Office, Kingswood, by applying to the Surveyor, Mr. W. D. Bell.

NOVEMBER 17.—**Swinton.**—MAKING-UP.—For making-up of Albert-street and part of Walker-street, for the U.D.C. The plans, etc., may be seen, and forms of tender, etc., obtained from Mr. Robert Fowler, C.E., Engineer and Surveyor, Council Offices Swinton, near Rotherham, upon payment of a deposit of 10s. for each street.

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 17.—**Wrexham.**—ROAD.—For construction of an approach road to Gresford new Cemetery, for the R.D.C. Plans, etc., may be seen at the office of the Engineer, Mr. J. Price Evans, Argyle-chambers, Wrexham.

NOVEMBER 18.—**Leeds.**—SEWERAGE WORKS.—The Sewerage Committee invite tenders for sewerage works. Drawings may be seen, and forms of tender, etc., may be obtained, on application to Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds, on payment of a deposit of 3*l.* 3s.

NOVEMBER 22.—**Northwood.**—STREET WORK.—Ruislip-Northwood U.D.C. invite tenders for the making-up of the private street known as Carew-road, Northwood. Plans may be seen, and specification, etc., obtained, from Mr. W. Louis Carr, the Council's Surveyor, at Council Offices, Northwood, Middlesex.

NOVEMBER 22.—**Sirhowy.**—SEWERS.—Mynyddislwyn U.D.C. invite tenders for the construction of the subsidiary sewers in the Sirhowy Valley portion of their district. Plans may be seen, and bills of quantities, etc., obtained from the Engineer, Mr. Harold Seymour, M.I.Mun.E., at the Council Offices, Tredegar Junction, on payment of 2*l.* 2s.

* NOVEMBER 22.—**Wandsworth.**—ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving new streets. See advertisement in this issue for further particulars.

NOVEMBER 23.—**Grimsby.**—SEWERAGE WORKS.—For about 1,900 yds. of 9 in. by 6 in. stoneware and cast-iron pipe sewers, with manholes, etc., together with sewage disposal works, for the R.D.C. Drawings, etc., may be seen, and bills of quantities obtained, at the office of the Surveyor, Mr. Albert Hobson, 198, Legsby-avenue, Grimsby, on payment of 2*l.* 2s.

* NOVEMBER 24.—**Hammersmith, W.**—ROAD-MAKING.—The Hammersmith B.C. invite tenders for making-up and paving Dunraven-road (section 3). See advertisement in this issue for further particulars.

NOVEMBER 25.—**Sunderland.**—TRAMWAY TRACK.—The Corporation of Sunderland invite tenders for (1) foundations and track (about 853 lin. yds.); (2) paving work. The specification, etc., can be obtained on application to the joint engineers, Mr. John W. Moncur, A.M.Inst.C.E., Borough Engineer, Town Hall, and Mr. Archibald R. Dayson, M.Inst.E.E., Tramways General Manager and Engineer, Tramways Offices, on payment of a deposit of 1*l.* 1s. for each specification.

NOVEMBER 29.—**Grange-over-Sands.**—MAKING-UP.—Grange-over-Sands U.D.C. invite tenders for the making-up of Fernhill-road, in accordance with the plans, etc., prepared by their Surveyor. Forms of tender can be obtained, and the plans, etc., inspected, at the Council Offices, Grange-over-Sands.

NOVEMBER 30.—**Market Harborough.**—SEWAGE DISPOSAL.—The Market Harborough U.D.C. invite tenders for extensions to their sewage disposal works. Plans may be seen, and copies of general conditions, etc., may be obtained, at the Council Offices on payment of 5*l.* 5s.

STONES, MATERIAL, AND STORES.

NOVEMBER 15.—**Prestwich.**—SETTS.—The U.D.C. of Prestwich invite tenders for the supply of 380 tons of granite setts, 5 in. by 4 in. Mr. Lewis A. Orford, Law Clerk to the Council, Council Offices, Prestwich, near Manchester.

NOVEMBER 15.—**Woodstock.**—HARTSHILL, CLEEHILL, LEICESTERSHIRE GRANITE, AND ROWLEY REGIS OR OTHER HARD STONE.—The R.D.C. of Woodstock invite tenders for the supply of stone. Forms of tender can be obtained on application at office of Mr. A. G. Higgs, Clerk to the District Council, Woodstock.

NOVEMBER 16.—**Chorley.**—FIRECLAY GOODS.—The Corporation invite tenders for the supply and delivery at their Gasworks of fireclay goods required during the year 1910. Specification, etc., may be obtained from Mr. J. W. Allin, Gas Engineer.

NOVEMBER 16.—**Lambeth.**—GRANITE.—The Guardians of the Poor of the Parish of Lambeth invite tenders for the supply of 200 tons of waste and broken pieces of Jersey or Guernsey granite for breaking, to be delivered at their stone yard, in Wincott-street, Kennington-road, S.E. Mr. James L. Goldspink, Clerk, Guardians' Board-room and Offices, Brook-street, Kennington, S.E.

NOVEMBER 17.—**Hollingbourn.**—GAS MAINS.—Hollingbourn R.D.C. invite tenders for 4 tons of 6-in. cast-iron coated gas mains, to be delivered at Hollingbourn Station. Mr. H. J. Bracher, Clerk, 33, Earl-street, Maidstone.

NOVEMBER 17.—**Manchester.**—GOODS.—The Cleansing Committee of the Manchester Corporation invite tenders for twelve months' supplies. Specifications may be obtained from Mr. R. Williamson, Superintendent of the Cleansing Department, Town Hall, Manchester.

NOVEMBER 18.—**Deal.**—GRANITE.—The Corporation of Deal invite tenders for the supply of Guernsey granite. Specification and form of tender to be had from Mr. Thos. C. Golder, Borough Engineer and Surveyor, 23, Queen-street, Deal.

NOVEMBER 18.—**Wandsworth.**—200 TONS OF GUERNSEY GRANITE SPALLS.—The Guardians invite tenders for the supply of 200 tons of Guernsey granite spalls, to be delivered at the Workhouse, Garratt-lane, Wandsworth. Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

NOVEMBER 20.—**Handsworth.**—GOODS, ETC.—The U.D.C. invite tenders for supplying goods and materials during the year ending December 31, 1910. Conditions of contract and specification may be seen, and forms of tender obtained, on application to the Surveyor, at the Council House, Handsworth.

NOVEMBER 22.—**Hull.**—MATERIALS.—The Corporation invite tenders for scavenging and watering, cartage, iron and steel, castings, cement, etc. Forms of tender, etc., may be obtained at the City Engineer's Office.

* NOVEMBER 22.—**London, etc.**—STORES AND MATERIALS.—The Port of London Authority invite tenders for supplies of materials and stores. See advertisement in this issue for further particulars.

NOVEMBER 23.—**West Hartlepool.**—ROAD MATERIALS AND SEWER PIPES.—The Corporation invite tenders for the supply of Yorkshire and concrete kerbstone and flags, scoriæ and whinstone channel blocks and paving setts; hand, machine, and unbroken whinstone; pitch, tar, and lime. Specifications, etc., can be obtained at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings.

NOVEMBER 23.—**West Hartlepool.**—YEARLY STORES.—The Corporation invite tenders for the supply of goods and materials. Specifications, etc., can be obtained at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings, and samples of stores seen at the Corporation Depôt.

NOVEMBER 24.—**Birmingham.**—ROAD MATERIAL.—Warwickshire C.C. invite tenders for the supply of road material (broken and unbroken), delivered at the various railway stations and wharves in the county. Forms to be obtained from the County Surveyor, 6, Waterloo-street, Birmingham.

NOVEMBER 24.—**Erdington.**—CONCRETE FLAGS.—Erdington U.D.C. Highways and Buildings Committee invite tenders for the supply of 15,500 sq. yds., or thereabouts, of concrete flags. Copies of specification, etc., may be obtained upon application to Mr. Herbert H. Humphries, Engineer and Surveyor, Council House, Erdington.

NOVEMBER 24.—**Erdington.**—STONE.—Erdington U.D.C. Highways and Buildings Committee invite tenders for the supply of broken and unbroken stone. Copies of the specification, etc., may be obtained upon application to Mr. Herbert H. Humphries, Surveyor to the Council, Council House, Erdington.

NOVEMBER 25.—**Chatham.**—ANNUAL CONTRACTS.—The T.C. invite tenders for the supply of goods and materials during the year. Specifications, etc., can be obtained, and samples seen, on application at the Borough Surveyor's Office, Town Hall, Chatham.

NOVEMBER 25.—**Wakefield.**—STORES.—The Wakefield and District Light Railway Company invite tenders for the supply of stores. Schedules may be obtained from the Central Offices, Belle Isle, Wakefield. A charge of 1s. (which is not returnable) is made for each schedule, in duplicate, and a remittance covering the charge for schedules required must be sent with each application.

NOVEMBER 25.—**York.**—STORES.—North-Eastern Railway Directors invite tenders for the supply during the six or twelve months of articles. Specification, etc., may be obtained on application to Mr. E. H. Clark, Stores Superintendent, Gateshead.

NOVEMBER 25.—**York.**—STORES.—North-Eastern Railway Directors invite tenders for telegraph stores. Forms of tender may be obtained on application to Mr. C. H. Ellison, the Company's Telegraph Superintendent, York.

NOVEMBER 27.—**Hampton Wick.**—GRANITE.—The U.D.C. invite tenders for the supply of about 200 yds. of granite, to be delivered by barge alongside the Hampton Wick Wharf as required by the Surveyor. No special form.

NOVEMBER 29.—**Dublin.**—STORES.—The Dublin United Tramways Company (1896), Ltd., invite tenders for the supply of general stores. Forms of tender (price 2s. each), conditions, etc., can be obtained, and patterns seen, at the Secretary's office, 9, Upper Sackville-street, from November 1 to 13

NOVEMBER 30.—**Enniskillen.**—STORES.—Sligo, Leitrim, and Northern Counties Railway Company invite tenders for the supply of goods required for the year 1910. Forms can be had from Mr. John Duff, Secretary, Company's Office, Enniskillen.

DECEMBER 1.—**Dublin.**—STORES, ETC.—The Directors of the City of Dublin Steam Packet Company invite tenders for the supply of brass and copper work, paints, timber, etc., for twelve months. Specifications can be seen at the Company's Office, 9, Regent-road, Liverpool.

DECEMBER 8.—**Dublin.**—ARTICLES.—The Dublin Port and Docks Board invite proposals to supply articles from January 1 next to December 31. Forms of proposal may be had at office of Mr. N. Proud, Secretary, Port and Docks Office, Westmoreland-street, Dublin.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
•CORRESPONDENCE AND GENERAL CLERK	Hackney Borough Council	130*l.* per annum	Nov. 22
•ARCHITECT FOR ELEMENT. AND SECONDARY SCHOOLS	West Riding C.C.	350*l.*	Nov. 25

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
•EFFECTS OF MANSION, OLD PARK, ENFIELD—On the Premises	Knight, Frank, & Rutley	Nov. 16, etc.
•NEW WOODWORKING MACHINERY, HAYES, MIDDLESEX—On the Premises	Fuller, Horsey, Sons, & Cassell	Nov. 25
•STEAM MOTOR WAGONS, BROMLEY-BY-BOW, E.—On the Premises	Fuller, Horsey, Sons, & Cassell	do.
•BUILDING SITES, LANDS, AND HOUSES, SELSEY-ON-SEA—Anchor Hotel, Chichester	Wyatt & Son	Dec. 1
•BUILDING SITE, TOTTENHAM COURT-ROAD—At the Mart	H. E. Foster & Cranfield	do.
•FAMILY MANSION, HOME FARM, AND BUILDING SITES, ANGLESEY—At the Mart	J. A. Lumley & Dowell	Dec. 7
•FREEHOLD BUILDING LAND, BEXHILL-ON-SEA—Granville Hotel, Bexhill-on-Sea	S. Walker & Son	Dec. 15

Patents.

APPLICATIONS PUBLISHED.*

20,753 of 1908.—Arthur Greenwood: Indicators for use in connexion with lavatories, bathrooms, and the like.

21,367 of 1908.—William Webb and Warnie Waldo Hildreth: Wrenches.

21,500 of 1908.—Herbert Plum: Saw-sharpening machines.

21,588 of 1908.—Henry Ismay Moralee Ross. System of double ventilation.

21,593 of 1908.—William Wright Vincent: Lacquering or otherwise coating surfaces.

22,018 of 1908.—Jean Kunz: Mechanical hammers.

23,251 of 1908.—Albert Brooker: Window-sash fastener.

26,886 of 1908.—William Sutherland Chisholm: Devices for punching tubes and the like.

204 of 1909.—Thomas Wesley Jenks: Reinforcing bars for concrete structures.

918 of 1909.—Lewis James Nurse Gorton: Casement windows.

4,074 of 1909.—Harold Brindley Lancaster and Robert Taylor: Wooden seats for water-closets.

4,737 of 1909.—Fletcher, Russell, & Co., Ltd., and Alexander Neil: Kitchen ranges.

5,679 of 1909.—George Henry Pedlar: Metallic roofing shingles.

5,762 of 1909.—Mark Cowley: Lock staple.

7,414 of 1909.—Niels Marius Mogensen: Pipe wrenches.

16,711 of 1909.—William Herbert Percy: Reinforced concrete piles.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

Digitized by Google

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 20.—By WOODS & Co. (at Northampton).

Northampton.—Kettering-rd., freehold business premises	£1,200
71, St. Giles-st., f.	1,085
30, Margaret-st., f.	195
76 and 78, Somerset-st., f.	315
61, Adelaide-st. (s.), f.	200
18, Cambridge-st., f.	165
107, Stanhope-rd., f.	175
67 and 69, Oliver-st., f.	410

October 27.—By PHILIP E. HILL (at Newport).

Blaina, Mon.—Griffiths Brothers Brewery, with 41 freehold and leasehold hotels and public-houses, cottages, etc. (in lots)	181,910

October 28.—By WALLER & KING (at Southampton).

Bitterne, Hants.—Commercial-st., Belgrave and two cottages, f.	355
Sholing, Hants.—Two cottages, f.	120
Hedge End, Hants.—Butts-rd., five cottages, f.	475
Hamble, Hants.—Two cottages, f.	200

October 30.—By G. B. HILLIARD & SON (at Colchester).

East Bergholt, Suffolk.—Church Gate-walk, two houses, f., y.r. 39*l.*	635
Stratford St. Mary, Suffolk.—Upper-st., house and two cottages, f.	370

November 1.—By WATERER & SONS.

Byfleet, Surrey.—Church-la., two cottages, store, stabling, and 5 a. 1 r. 21 p., c., y.r. 70*l.*	1,175
Addlestone, Surrey.—Lincombe, f., y.r. 70*l.*	1,020
Marylebone.—16, Allsop-st., u.t. 12 yrs., g.r. 8*l.*, y.r. 35*l.*	135

November 2.—By C. W. DAVIES & SON.

Islington.—4, Sudeley-st., u.t. 17 yrs., g.r. 5*l.*, e.r. 36*l.*	120

By DUNCAN & KIMPTON.

Ilford.—1 to 10, Horns-rd., f., w.r. 131*l.* 12s. 8d.	1,430
Marks Gate, Essex.—1, 2, and 3, Lawrence-cottages, f., w.r. 38*l.* 4s.	400
Dagenham, Essex.—1, 2, and 3, Crown-st., f., w.r. 30*l.* 11s.	400

By LEOPOLD FARMER & SONS.

St. John's Wood.—12, Mortimer-cres., u.t. 41 yrs., g.r. 15*l.*, p.	800

By FORTESCUE & CO.

Leytonstone.—495 and 497, High-rd. (s.), f., y.r. 80*l.*	850
Plaistow.—18, 20, and 22, Terrace-rd., f., w.r. 96*l.* 4s.	860

By KIDWELL & SON (at Chatham).

Chatham.—Henry-st., f.g. rents 12*l.* 12s., reversion in 26 yrs.	495
Halling.—Main-rd., freehold house, w.r. 15*l.* 12s.	116
Snodland.—5, Malling-rd. (s.), f., y.r. 20*l.*	335

By CHAPMAN & MARTIN (at Lewes).

Lewes, Sussex.—8, 10, and 12, Sun-st., f., w.r. 37*l.* 14s.	550
Southover, Sussex.—37, High-st., f.	195

November 3.—By H. DONALDSON & SONS.

Dalston.—34 and 38, Suffolk-rd., u.t. 36 yrs., g.r. 6*l.* 15s., w.r. 72*l.* 16s.	260

By SALTER, REX, & Co.

City.—66, Ludgate-hill, f.g.r. 200*l.*, reversion in 59 yrs.	6,600

By E. & S. SMITH.

Clerkenwell.—34 and 35, Baker-st., u.t. 12 yrs., g.r. 12*l.* 12s., y.r. 85*l.*	300

November 4.—By DRYSDALE, NURSE, & Co.

Stamford Hill.—23, Cadoxton-av., f., w.r. 37*l.* 14s.	370

By WILLIAM WESTON.

Notting Hill.—74, Wornington-rd., u.t. 64½ yrs., g.r. 7*l.* 10s., y.r. 38*l.*	310
98, Lancaster-rd., u.t. 54 yrs., g.r. 10*l.*, y.r. 48*l.*	350
237, Portobello rd. (s.), u.t. 51¾ yrs., g.r. 10*l.*, y.r. 48*l.*	220
Marylebone.—36, Bendall-st. (s.), u.t. 53¾ yrs., g.r. 20*l.*, y.r. 50*l.*	330
Ealing.—32, Windsor-rd., u.t. 53 yrs., g.r. 7*l.* 7s., y.r. 45*l.*	320

By BEARD & SON.

Notting Hill.—7, 37, and 39, Cambridge-gdns., u.t. 54 yrs., g.r. 35*l.*, gross rental 292*l.*	1,190
68, Cornwall-road, f., gross rental 90*l.*	600
307, Ladbroke-gr., u.t. 58 yrs., g.r. 10*l.*, gross rental 76*l.* 14s.	275
47, Kensington Park-rd. (s.), u.t. 53 yrs., g.r. 8*l.*, gross rental 52*l.*	240
Bayswater.—7, Colville-ter., u.t. 51 yrs., g.r. 16*l.*, gross rental 122*l.* 6s.	390

By JENKINS, SONS, & WEBSTER (at New Cross).

Deptford.—49 to 75 (odd), Oscar-st., u.t. 28 yrs., g.r. 11*l.*, w.r. 294*l.*	2,145
8 to 11 and 12A, Atkinson-st., u.t. 35 yrs., g.r. 15*l.* 9s., w.r. 196*l.* 4s.	1,600

November 5.—By FISHER, STANHOPE, & Co.

Islington.—34, Elmore-st., u.t. 43 yrs., g.r. 6*l.* 6s., y.r. 36*l.*	250

By E. & R. SOLOMONS.

Shepherd's Bush.—9, Melrose-gdns, u.t. 67 yrs., g.r. 6*l.*, e.r. 45*l.*	325

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 7 0	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 5 0	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Best Dipped Salt Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" loss than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
Scappled random blocks	3 0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. dep.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 0 0	15 10 0
Deals: best 3 by 9	13 10 0	14 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	
2 in. by 4 in. and 2 in. by 6 in.	9 10 0	10 10 0
2 in. by 4½ in. and 2 in. by 5 in.	9 0 0	10 0 0
Foreign Sawn Boards—1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"

	At per load of 50 ft.	
Fir timber: best middling Danzig or Memel (average specification)	5 0 0	5 10 0
Seconds	4 10 0	5 0 0
Small timber (8 in. to 10 in.)	3 17 6	4 0 0
Small timber (6 in. to 8 in.)	3 5 0	3 10 0
Swedish balks	2 12 6	3 0 0
Pitch-pine timber (30 ft. average)	4 10 0	5 5 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 10 0	25 10 0
3 in. by 9 in.	22 10 0	23 10 0
Battens 2½ in. and 3 in. by 7 in.	17 0 0	18 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0	20 0 0
3 in. by 9 in.	18 0 0	19 10 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	15 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	14 0 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 10 0	22 10 0
Do. 3 in. by 9 in.	18 10 0	19 10 0
Battens	14 0 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	17 10 0
Do. 3 in. by 9 in.	15 0 0	16 0 0
Battens	11 10 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 10 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
White Sea and Petersburg—First white deals, 3 in. by 11 in.	15 0 0	16 0 0
" " 3 in. by 9 in.	14 0 0	14 10 0
Battens	11 10 0	12 10 0
Second white deals, 3 in. by 11 in.	14 0 0	15 0 0
" " 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 10 0	11 0 0
Pitch-pine: deals	19 0 0	21 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	33 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak logs—Large, per ft. cube	0 3 0	0 3 9
Small " "	0 2 6	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	0 0 9½
¼ in. do. do	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 10	0 1 1
Selected, Figury, per ft. super. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	0 1 0
Teak per load	18 0 0	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0

Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow matched and boaded or V-jointed brds.	0 11 0	0 13 6

Digitized by Google

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	Per square. £ s. d.	£ s. d.
Prepared Flooring, etc. (*continued*)		
1 in. by 7 in. " "	0 14 0 ...	0 18 0
1 in. by 7 in. white " "	0 10 0 ...	0 11 6
1 in. by 7 in. " "	0 12 9 ...	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0 ...	7 10 0
Compound Girders, ordinary sections	9 0 0 ...	10 0 0
Steel Compound Stanchions	11 0 0 ...	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0 ...	10 0 0
Fitch Plates	9 0 0 ...	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0 ...	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0 ...	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0 ...	9 5 0
Staffordshire "Marked Bars"	10 10 0 ...	—
Mild Steel Bars	8 15 0 ...	9 5 0
Hoop Iron, basis price	9 5 0	9 10 0
" " Galvanised	17 0 0 ...	—

(*And upwards, according to size and gauge.*)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0 ...	—
" " 24 g.	10 15 0 ...	—
" " 26 g.	12 5 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0 ...	—
Ordinary sizes to 22 g. and 24 g.	15 10 0 ...	—
" " 26 g.	16 10 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0 ...	—
" " 22 g. and 24 g.	18 10 0 ...	—
" " 26 g.	20 0 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0 ...	—
" " 22 g. and 24 g.	14 15 0 ...	—
" " 26 g.	16 5 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0 ...	—
" " " 26 g.	15 0 0 ...	—
Cut Nails, 3 in. to 6 in.	10 10 0 ...	11 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 10 0 ...	—
Pipe in coils	17 0 0 ...	—
Soil pipe	20 0 0 ...	—
Compo pipe	20 0 0 ...	—
ZINC—Sheet—		
Vielle Montagne	27 15 0 ...	—
Silesian	27 10 0 ...	—
COPPER—		
Strong sheet per lb.	0 1 0 ...	—
Thin " "	0 1 1 ...	—
Copper nails "	0 0 10 ...	—
Copper wire "	0 0 10 ...	—
BRASS—		
Strong Sheet "	0 0 11 ...	—
Thin "	0 1 0 ...	—
TIN—English Ingots "	0 1 4 ...	—
SOLDER—Plumbers' "	0 0 6½ ...	—
Tinmen's "	0 0 9 ...	—
Blowpipe "	0 0 11 ...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft.	delivered.
" fourths	1½d. "	"
21 oz. thirds	3d. "	"
" fourths	2½d. "	"
26 oz. thirds	4d. "	"
" fourths	3d. "	"
32 oz. thirds	4½d "	"
" fourths	4½d. "	"
Fluted Sheet, 15 oz.	3½d. "	"
" 21 oz.	4½d. "	"

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft.	delivered.
⅛ "	2½d. "	"
¼ "	2½d. "	"
Figured, Oxford Rolled and Oceanic "Glass, white	3½d. "	"
⅛ " " tinted	5d. "	"

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 7
" " in barrels	"	0 2 8
" " in drums	"	0 2 11
Boiled " in barrels	"	0 2 11
" " in drums	"	0 3 2
Turpentine in barrels	"	0 3 5
" in drums	"	0 3 7
Genuine Ground English White Lead	per ton	20 0 0
Red Lead, Dry	"	19 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 a.m. on *Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted*. † Denotes *provisionally accepted*.**

BODMIN.—For erecting East Cornwall Hospital, Rhind-street. Mr. Morley B. Collins, architect, Clinton-road, Redruth:—

Trelvane & Son	£3,130	W. C. Hodge	£2,475
C. F. Ham	2,735	Stanbury	2,449
R. Grose	2,700	Brown Bros.	2,443
Lapthorne & Co.	2,598	W. E. Bennett, Bodmin*	2,225
Brown & Son	2,545		

BOURNEMOUTH.—For laying about 230 squares of 1-in grooved and tongued desiccated teak decking with metal heading joints, for the Town Council. Mr. F. W. Lacey, M.Inst.C.E., Borough Engineer, Municipal Offices, Bournemouth:—

Bowman & Sons, London and Bournemouth* £1,090

COBHAM.—For erecting a steam roller house, for the Strood Rural District Council. Mr. L. Randerson, District Surveyor, Meopham, Gravesend:—

G. Gates & Son, Frindsbury, Rochester* .. £225

CROSBY.—For erecting a dwelling-house, shop, and business premises. Mr. W. H. Buttrick, architect, Scunthorpe:—

Burnett	£1,025	Smith Bros.	£759
W. Pallister	930	J. E. Buttrick	758
H. G. Thompson	825	D. Quilliel*	675

[All of Scunthorpe.]

GERRARD'S CROSS.—For erection of a house at Gerrard's Cross, Bucks:—

Musselwhite & Sapp	£1,836	G. Bollom	£1,074
H. Brown	1,829	Mattock & Parsons, 165, Grays' Inn-road, W.C.*	1,671
J. Bailey	1,819		
Y. J. Lovell & Son	1,787		
J. Mead	1,730		

LLANDAFF.—For street improvement works in Whitchurch-road, Gabalfa, for Llandaff and Dinas Powis Rural District Council. Mr. J. Holden, A.M.Inst.C.E., Engineer, 20, Park-place, Cardiff:—

C. Davies	£663 8 6	E. Rees, The Elms, Whitchurch*	£591 1 8
T. R. Williams	632 7 5		

LONDON.—For the paving and sewer, etc., works in connexion with the widening of Belvedere-road between Westminster Bridge-road and Guildford-street, for the London County Council:—

S. Kavanagh & Co.	£4,764 5 3
W. H. Wheeler & Co., Ltd.	4,619 2 7
F. & H. F. Higgs	4,476 0 0
Price & Reeves	4,393 15 3
H. Woodham & Sons	4,168 10 8
W. Muirhead & Co.	4,168 6 2
C. Ford	3 758 1 4
J. Mowlem & Co., Ltd.	3,717 7 9
D. R. Paterson, Ltd., Camden Town, N.W.*	3,283 2 7

[The Chief Engineer's estimate, comparable with the above tenders, is £3,967 8s.]

LONDON.—For new school, Haverstock Hill, St. Pancras, W., for the London County Council:—

W. Moss & Sons	£13,294 10 6
L. H. & R. Roberts	12,789 0 0
C. F. Kearley	12,769 0 0
J. & M. Patrick	12,672 0 0
T. D. Leng	12,654 0 0
Patman & Fotheringham, Ltd.	12,051 0 0
G. Godson & Sons	12,039 0 0
Treasure & Son, Ltd.	12,030 0 0
E. Triggs	12,343 0 0
McCormick & Sons, Ltd., Northampton-street, Essex-road;	11,842 0 0

‡ Recommended for acceptance.

[The estimate of the Architect (Education), comparable with the tenders, is £12,678.]

LONDON.—For the erection on the "Acland" site, St. Pancras, N., of handicraft, metal work, and laundry centres, for the London County Council:—

Marchant & Hirst	£3,464	C. R. Price	£2,777
Stapleton & Sons	3,168	Stevens & Sons	2,761
Brand, Pettit, & Co.	3,166	C. F. Kearley	2,757
G. S. S. Williams & Son	3,091	Treasure & Son, Ltd.	2,696
J. Willmott & Sons	2,942	McCormick & Sons, Ltd., Northampton-street, Essex-road*	2,669
Patman & Fotheringham, Ltd.	2,807		

[The estimate of the Architect (Education), comparable with the tenders, is £2,747.]

CHISWICK.—For making-up Park-road (Sections I. and II.), for the Urban District Council:—

	Park-road (Section I.). Croft.	Excelsior.	Atlas.	Council's.	Park-road (Section II.). Croft.	Excelsior.	Atlas.	Council's.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. Adams	1,189 0 0	1,189 0 0	1,172 0 0	1,172 0 0	1,544 0 0	1,544 0 0	1,520 0 0	1,520 0 0
F. G. Brummell, Willesden	993 12 7*	982 18 10	982 18 10	979 7 7	1,325 11 11*	1,311 0 0	1,311 0 0	1,308 3 3
T. Free & Sons, Ltd.	1,305 0 0	1,297 17 6	1,297 17 6	1,297 17 6	1,740 0 0	1,730 5 8	1,730 5 8	1,730 5 8
S. Lane & Co.	1,180 0 0	1,171 0 0	1,161 0 0	—	1,623 0 0	1,613 0 0	1,613 0 0	—
J. Mowlem & Co., Ltd.	1,133 0 0	1,126 0 0	1,133 0 0	1,122 0 0	1,449 0 0	1,440 0 0	1,449 0 0	1,435 0 0
W. Muirhead & Co.	1,197 0 1	1,175 18 7	1,182 19 1	1,175 18 7	1,768 12 2	1,739 9 2	1,746 8 6	1,739 9 2
G. Wimpey & Co.	1,124 0 0	1,117 0 0	1,117 0 0	1,114 0 0	1,435 0 0	1,425 0 0	1,425 0 0	1,421 0 0
H. Woodham & Sons	1,269 0 0	1,269 0 0	1,263 0 0	1,252 0 0	1,721 0 0	1,721 0 0	1,714 0 0	1,699 0 0

CHISWICK.—For making-up Hazledene-road and Grove Park Station-road, for the Urban District Council:—

	Hazledene-road. Croft.	Excelsior.	Atlas.	Council's.	Grove Park Station-road. Croft.	Excelsior.	Atlas.	Council's.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. Adams	853 0 0	853 0 0	834 0 0	834 0 0	668 0 0	668 0 0	633 0 0	633 0 0
F. G. Brummell, Willesden	741 11 11	720 3 5	720 3 5	716 7 3	547 17 8	544 12 8	544 12 8	543 11 0*
Clements, Knowling, & Co., Brentford	697 0 0	730 0 0	730 0 0	675 0 0*	—	—	—	—
T. Free & Sons, Ltd.	870 0 0	870 0 0	870 0 0	870 0 0	720 0 0	717 16 8	717 16 8	717 16 8
H. J. Greenham	719 0 0	751 0 0	751 0 0	695 0 0	—	—	—	—
S. Lane & Co.	—	—	—	790 0 0	594 0 0	594 0 0	594 0 0	—
J. Mowlem & Co., Ltd.	824 0 0	820 0 0	828 0 0	816 0 0	587 0 0	585 0 0	587 0 0	584 0 0
W. Muirhead & Co.	969 6 2	947 9 2	955 1 6	947 9 2	714 3 8	708 9 8	710 1 8	708 0 8
G. Wimpey & Co.	831 0 0	823 0 0	823 0 0	820 0 0	605 0 0	602 10 0	602 10 0	601 10 0
H. Woodham & Sons	975 0 0	976 0 0	969 0 0	957 0 0	659 17 6	659 17 6	658 5 0	655 0 0

Digitized by Google

LONDON.—For converting the ground floor of the premises into a shop, No. 24, Mare-street (Mare-street and Upper Clapton-road improvement), for the London County Council:—

G. Butters	£250	Johnson, Saul, & Co.	£155
Clarke & Bracey	235	Barrett & Power, Hackney, N.E.*	131
J. Jarvis & Sons	205		

[The estimate of the Council's Valuer, comparable with the above tenders, is £128 10s.]

LONDON.—For repairs to premises, Standish-road and St. Peter's-road, Hammersmith, Western district, for the Metropolitan Water Board:—

Newson & Hawkins	£226 10 0	Bull & Esdaile	£201 0 0
Beeson Bros.	220 13 6	W. Chapman & Sons	189 1 0
Turtle & Appleton	220 1 0	J. Maitland & Sons*	187 10 0
C. Johnson	201 10 0		

LONDON.—For the erection of the superstructure of school buildings to accommodate 857 children, at Storey-street, North Woolwich, for East Ham Education Committee. Mr. R. L. Curtis, Architect, 11 and 12, Finsbury-square, E.C.:—

F. J. Coxhead, Bulwer-road, Leytonstone* £9,882

LONDON.—For the pile foundations required in the erection of school buildings at Storey-street, North Woolwich, for East Ham Education Committee. Mr. R. L. Curtis, Architect, 11 and 12, Finsbury-square, E.C.:—

J. & W. Stewart, Caxton House, Westminster* £1,320

NEWCASTLE-ON-TYNE.—For St. Barnabas Parochial Building. Mr. A. B. Plummer, F.R.I.B.A., Diocesan Architect, Newcastle:—

J. Craven, Westgate-road, Newcastle* £1,684 12 6

ORSETT.—For alterations and additions to Orsett Workhouse, for the Orsett Board of Guardians. Mr. Christopher M. Shiner, A.R.I.B.A., architect, 10, John-street, Adelphi, W.C., and Gate House, Grays, Essex:—

Hibberd & Sons	£6,318	G. Brown	£5,339
Wall & Co.	5,686	Hammond	5,198
T. Bruty	5,621	Archer	5,085
W. Potter	5,514	H. J. Carter	4,913
Sheffield	5,397	Brown Bros.	4,776
Myal & Upson	5,380		

PINNER.—For the erection of four houses, Eastcote-road, Pinner. Mr. J. E. Henderson, architect, Pinner:—

Milsom & Booth, Pinner* £1,380

PORTSMOUTH.—For pulling down old buildings and erecting a new garage and workshop, and repairs to workshops, etc., for Messrs. Linington Bros., Ltd. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

J. Crockerell, Portsmouth* £686

PORTSMOUTH.—For alterations, Duke Connaught Beerhouse, Portsmouth. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

M. F. Corke, Portsmouth* £680

PORTSMOUTH.—For road-making, Copnor, Portsmouth. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

F. Privett, Portsmouth* £497

PORTSMOUTH.—For house at Drayton, near Portsmouth. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

H. Munday, Havant* £486

ROCHFORD.—For alterations and additions to "Eastwood House," Rochford, Essex, for Mr. Jesse Sawyer. Mr. Laurence T. Weaser, architect and surveyor, 132, High-street, Southend-on-Sea:—

E. Leaney	£1,128	S. Norden, Rochford*	£720
J. Bane	798		

RUGBY.—For headquarters for Howitzer Battery, Rugby. Mr. J. H. Liddington, architect and surveyor, Ketton-chambers, Regent-street, Rugby:—

Linnell & Son	£2,672	J. Hollowell	£2,480
J. Parnell & Son	2,655	C. Cockerell*	2,480
Foster & Dicksee, Ltd.	2,620		

[All of Rugby.]

SOUTHWICK.—For making-up private streets (Southdown-road and road east side of green), for the Urban District Council. Mr. G. W. Warr, Surveyor, Town Hall, Southwick:—

Bostel Bros., Ltd.	£876 18 8	W. Swales	£604 10 9
W. H. Holman & Co.	729 2 4	J. C. Trueman, Ltd.	585 0 0
Peerless, Dennis, & Co.	693 0 0	W. A. McKellar	547 0 0
G. Gillam	681 14 0	J. Parsons & Sons, Churchroad, Hove*	524 0 0
E. H. King	666 4 8		
Woolgar Bros.	665 13 0		

STIFFORD.—For repairs to roofs, spire, and internal work to Stifford Church. Mr. Christopher M. Shiner, A.R.I.B.A., architect, 10, John-street, Adelphi, W.C., and the Gate House, Grays, Essex:—

T. Bruty	£203 10	H. J. Carter	£126 9
J. Hammond & Sons	172 0		

SURBITON.—For private street improvement works at Lenelby-road and Tolworth Park-road, for the Urban District Council. Mr. H. T. Mather, Engineer and Surveyor, Council Offices, Ewell-road, Surbiton:—

Tolworth Park-road.

T. Free & Sons, Ltd.	£1,428 1 2
S. Kavanagh & Co., Surbiton*	1,294 7 8

Lenelby-road.

T. Free & Sons, Ltd.	2,070 1 10
S. Kavanagh & Co., Surbiton*	1,970 9 6

TIDEFORD.—For 134 yds. of stoneware sewer pipes at Tideford St. Germans, and 650 yds. of water pipes at Tideford, for St. Germans Rural District Council. Mr. J. A. Andrews, Surveyor, Southville, Saltash:—

T. Shaddock, 26, Furzehill-road, Plymouth* £197 9

WANSTEAD.—For laying sewer and drains, and for paving, etc., in connexion with "The Elms" improvement, High-street, for the Urban District Council. Mr. C. Herbert Bressey, Surveyor, Council Offices, Wanstead, N.E.:—

	Woodford-road, Kerb, etc.	"The Elms" Improvement.
T. Adams	£324 12 11	£684 6 0
G. J. Anderson	302 0 1	610 13 6
G. Bell & Sons	306 1 1	544 15 7
F. G. Coxhead	386 0 0	557 0 0
W. & C. French, Buckhurst Hill	*278 0 0	*510 0 0
O. T. Gibbons	303 18 8	628 0 5
B. W. Glenney	293 13 2	775 19 11
W. Griffiths & Co.	293 4 9	549 5 6
D. T. Jackson	333 12 4	681 9 4
J. Jackson	288 5 10	498 3 1
W. Manders	300 2 9	586 15 8
Mowlem & Co.	304 0 0	547 0 0
E. Parry & Co.	316 9 1	599 8 1
Parsons & Parsons	282 7 4	528 10 3
P. R. Paul	324 14 5	539 13 7
S. Porter	280 9 9	562 15 2
S. Hanson	292 0 0	619 0 0
Wilson Border Co.	316 1 3	606 11 4

WEST NORWOOD.—For the erection of a home in Wolfington-road, for the Committee of the Jews' Hospital and Orphan Asylum. Messrs. Joseph & Smithem, architects. Quantities by Mr. Chas. W. Latter, 53, Doughty-street, W.C.:—

Trollope & Colls	£7,839	Holliday & Greenwood	£6,977
Cubitt & Co.	7,667	W. Moss & Sons, Ltd.	6,850
Hudson Bros.	7,359	W. Lawrence	6,842
Higgs & Hill, Ltd.	7,184	F. G. Minter*	6,700
J. Greenwood, Ltd.	7,137		
G. E. Wallis & Sons, Ltd.	7,132		

Ham Hill Stone.
Doulting Stone.
Portland Stone.
The Ham Hill and Doulting Stone Co., Limited
(Incorporating the Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.).
Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

GRICE & CO., Ltd., STONE MERCHANTS,
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

OGILVIE & CO., Telephone: DALSTON 138. Many years connected with the late firm of W. H. LASCELLES & CO., LTD., of Bunhill Row.
Amhurst Works, **DALSTON LANE, N.E.**
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE.

JOINERY,
Of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.,
ESTIMATES ON APPLICATION.
COLNE BANK WORKS,
COLCHESTER.
Telephone: 0126. Telegrams: "Orfeur, Colchester."
LONDON OFFICE: 161, COMMERCIAL STREET.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company,
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

J. J. ETRIDGE, Jr.
LTD.,
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor,
Oakeley-Portmadoc.
BEST WORK ONLY.
Hand-made Broseley Tiles in Three Shades.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

"Drop Dry" Glazing
ECONOMICAL, EFFECTIVE. THE PERFECT SELF-SUSTAINING BAR.
Copper & Zinc Roofing.
The most Efficient and Economical System in the Kingdom.
Designs and Estimates Free on Application.
Telegraphic Address: "COURTEOUS, LONDON."
F. BRABY & CO., LTD.
Telephone: North 2100 (3 lines).
Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.
Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, FALKIRK.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3485. NOVEMBER 20, 1909.

Contents.

PAGE

METZ 543
NOTES 545
THE ROYAL INSTITUTE OF BRITISH ARCHITECTS .. 547
EGYPT EXPLORATION FUND 550
THE SOCIETY OF ARCHITECTS 550
LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.. 553
THE QUANTITY SURVEYORS' ASSOCIATION 553
ARCHITECTS' TECHNICAL BUREAU..... 555
MEETINGS 556

ILLUSTRATIONS:—
ELTHAM PARISH HALL: PREMIATED DESIGN.... 556
HULL TRAINING COLLEGE 557

NOTES FROM FRANCE 557
PICTURE EXHIBITIONS..... 557
THE LONDON COUNTY COUNCIL 557
APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1908 558
ARCHITECTURAL SOCIETIES..... 559
ENGINEERING SOCIETIES..... 559
THE ROYAL SANITARY INSTITUTE 559
COMPETITION NEWS..... 560

CORRESPONDENCE:—
THE BIRKENHEAD BUILDING MISHAP 560
"HOUSE DRAINAGE" 560
THE INTERCEPTING TRAP 561
DRY ROT AND PUGGING..... 561
RESIN IN WOODWORK..... 561

TRADE CATALOGUES..... 561
LONDON AND DISTRICT BOROUGH COUNCILS 561
PROJECTED NEW BUILDINGS IN THE PROVINCES .. 562
TRIBUNAL OF APPEAL..... 562
LONDON COUNTY COUNCIL EDUCATION COMMITTEE 563
HENNEBIQUE FERRO-CONCRETE 563
MASTER BUILDERS' ASSOCIATIONS, ETC..... 563
OBITUARY 563
GENERAL BUILDING NEWS..... 564
SANITARY AND ENGINEERING NEWS 565
MISCELLANEOUS 565
STAINED GLASS AND DECORATION 567

LAW REPORTS:—
ACTION BY A BUILDER 567
STREATHAM BUILDING DISPUTE 567

PATENTS 567
SOME RECENT SALES 567
PRICES CURRENT..... 567
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN .. 568
TENDERS 571

SUPPLEMENT:—
REVIEWS OF BOOKS.
A. Marquand's "Greek Architecture"; A. Michaelis's "A Century of Archæological Discoveries"; C. H. Sherrill's "Stained-Glass Tours in England"; J. and E. Pennell's "French Cathedrals"; W. M. Sinclair's "Memorials of St. Paul's Cathedral"; F. W. Raynes's "Domestic Sanitary Engineering and Plumbing"; A. Herring-Shaw's "Domestic Sanitation and Plumbing," Part I.; M. Esdale's "How Property is Valued"; A. C. Freeman's "Small Estate Management"; C. F. Mitchell's "Building Construction"; H. Chatley's "The Force of the Wind."
MAGAZINES AND REVIEWS.

Illustrations.

SELECTED DESIGN FOR PROPOSED PARISH HALL, ELTHAM. MESSRS. MOSCROP-YOUNG & GLANFIELD, AND MR. PERCY J. WALDRAM, F.S.I., ARCHITECTS.

SELECTED DESIGN FOR NEW TRAINING COLLEGE, HULL: MESSRS. CROUCH, BUTLER, & SAVAGE, ARCHITECTS.

Illustrations in Text.

PAGE

METZ. FROM A DRAWING BY MR. J. TAVENOR-PERRY 544
LACQUERED CABINET IN THE HOLME-LACY COLLECTION 546
PARISH HALL, ELTHAM 550

Metz.

ALTHOUGH far from being a hill city, the great mass of its cathedral, with the lofty buildings surrounding it, standing as they do on the rising ground of the peninsular at the junction of the Moselle and Seille, give to Metz an appearance of height, especially when viewed from the river banks, which many a city, though set upon a hill, certainly lacks. The position of the place at the confluence of these rivers and on their numerous backwaters, which flow in deep channels amongst its streets, and the fact that it has been hemmed in between fortifications through all historical times, in limiting the available area for the buildings, has tended to give them a compensating height, and thus added to the illusion.

Roman Metz, under the name of Divodurum, must have been a place of much importance; and, although no such considerable remains of classic times have been found here as in some other cities of ancient Gaul, the ruins of the great aqueduct are sufficient to attest its early prominence. This aqueduct, which brought in the water of the Gorse, a stream which runs through the too-famous village of Gravelotte, was carried across the valley of the Moselle by arches standing some 50 ft. high, of which many still remain, to a storing reservoir, and then distributed through subterranean channels cut in the solid rock, so large that a man can stand upright in them—a work only to be compared to the emissaria of the Lakes of Nemi and Albano. In 452 Attila and his Huns overran the country round, and are said to have destroyed the city; but under the Merovingians it became the capital of Austrasia, and the residence of many of the Kings of that much-tangled dynasty.

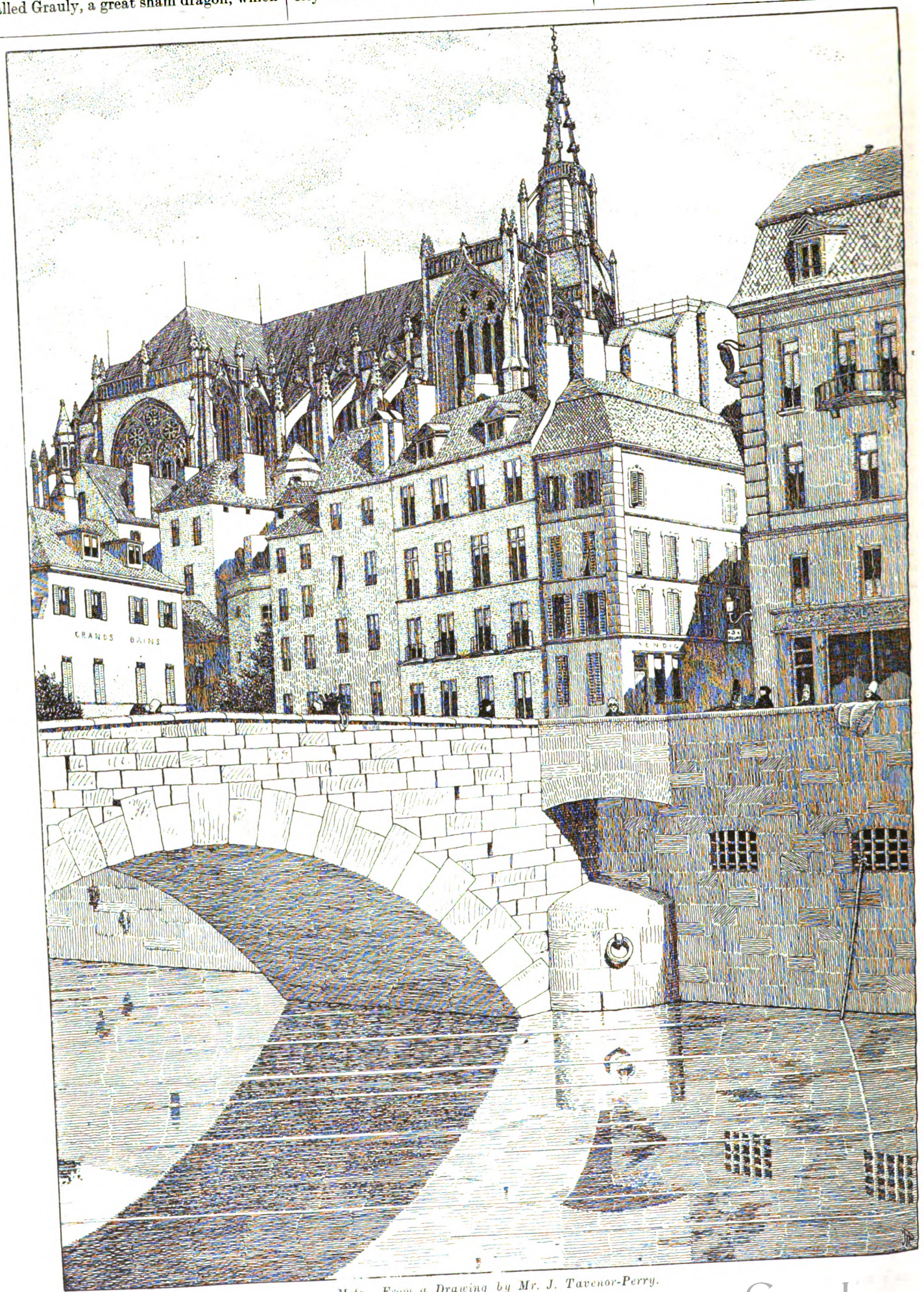
In the Rue du Chèvremont is a lofty square building, part of which rises to the height of a tower, figured in De Caumont's "Architecture Civile et Militaire," which tradition asserts was the royal palace; and though it must have undergone many alterations since those days, even Professor Freeman acknowledged that the legend might possibly be true. All through mediæval times Metz retained its importance as the chief city of the Duchy of Lorraine, as one of the "Three Bishoprics," and, above all, as a Free Imperial City; but though in 1444 it was vainly besieged by Charles VII., it was eventually captured by the French in 1552. The next year the Emperor Charles V. attempted to regain it, and it underwent a prolonged siege, but it was not until October 27, 1870, that it was surrendered by Marshal Bazaine, and was once more incorporated in the German Empire.

Whether due to the area of the city being much encumbered with ancient buildings, or to some other cause not now obvious, the correct orientation of the churches has been very much disregarded in Metz. The cathedral points a little to the north of north-east, and S. Vincent, the next important church, a little south of south-east, while the other churches seem very carelessly placed. The cathedral shows no work of high antiquity, though partly built on the site of an older church, known as Notre Dame de la Ronde; and the earliest portion is the nave, which may belong to the former half of the XIVth century, but was not completed until 1392; an inscription preserved in the north aisle records the death in 1400 of Pierre Perrat, an architect engaged upon the works. The choir, which is mainly late XVth century, was not consecrated until 1546; while the magnificent stained glass which fills its enormous windows, manufactured at Strasburg, belongs wholly to the XVIth century. The west front is of an incongruous character, having been added in the XVIIIth century; but the principal portals of the church are placed on the north and south of the nave, three bays back from the front, and over them are built two low square towers, which together have the appearance of a western transept. One of these towers formed the town-belfry, and contains the great bourdon, cast in the XVIth century, rejoicing in the singular name for a bell of La Muette; and the south tower is surmounted by a late spire of a German character, which rises to a height of 387 ft.

The cathedral suffered in no way from the siege of 1870, as the Germans did not send a shot into the town, but in 1877 much damage was done by a fire, and the roof burnt off, though this has since been partially repaired. Although the church is extremely lofty, being 141 ft. high, while Beauvais is only 150 ft., the piers and arcades are kept low, and the upper stages of the triforium and clearstory are worked into one design, and so open that the enclosure is little more than a wall of glass, producing a magnificent effect where the ancient glazing remains perfect. The tombs and much else inside the church were destroyed at the Revolution, but a great many

Digitized by Google

treasures are preserved in the sacristy, among which is an embroidered cope, incorrectly assumed to have once belonged to Charlemagne, and the curious monster called Grauly, a great sham dragon, which used to parade the town and to play in processions the parts of the Terasque of Terascon and the Gog and Magog of London. Of the many churches of the city that of S. Vincent, founded in 1248, is the most important; but outside the walls, and now included in the works of the old Citadel, was a Commandry of the Knights Templars, the refectory of which remains complete, and is decorated



Metz. From a Drawing by Mr. J. Tavenor-Perry.

Digitized by Google

with the fine wall-paintings reproduced by Viollet-le-Duc; and one of the picturesque mediæval gates, the Deutches-Thor, remains fairly perfect embedded in the later fortifications by Vauban.

NOTES.

The Canal Problem.

In a paper written for the International Railway Congress, Mr. G. R. Jebb, M.Inst. C.E., the engineer to the Shropshire Union Railways and Canal Company and the Birmingham Canal Navigations, discusses the influence of waterways on railways in Great Britain and India. The author considers that, with the exception of the Birmingham Canal, the inland waterways of England are not of material assistance to railway companies as feeders of traffic. That, no doubt, is a perfectly correct view, and, if our canal system were entirely remodelled and endowed with the best system of haulage, the result would be increased competition with rather than aid to railways. In fact, most of the witnesses who have advocated canal reform before the Royal Commission regard the improvement of inland navigation as desirable either for the purpose of competing with railway traffic or for cutting down railway rates. Although a canal engineer, Mr. Jebb does not seem to be an enthusiastic believer in the remunerative prospects attaching to canal reform. That the rehabilitation of inland navigation throughout the country on a thoroughly modern basis would be widely appreciated, we can well believe. Whether the necessary funds could be found without a State guarantee is quite another matter.

St. Paul's Bridge.

By a substantial majority the City Court of Common Council have approved the construction of the new bridge between Southwark and the northern side of the Thames, and the remodelling of Southwark Bridge, the total expenditure involved being not far short of two millions. Some ratepayers in the wards affected by the Southwark Bridge scheme asked the Court to delay the construction of the new bridge until the effect of widening and otherwise improving Southwark Bridge had been ascertained. This proposal was fully discussed, and the Court wisely decided against it, as being contrary to the interests of the City. Experience shows that business tends to gravitate more and more towards the West End owing to improved means of communication in that part of the metropolis. Hence it is hoped that St. Paul's Bridge will bring more customers into the City, besides constituting a much-needed link between north and south London. Moreover, the growth of traffic is an important factor for consideration—a point brought home by the fact that since the Tower Bridge was opened the number of vehicles passing over that structure and London Bridge is 15,000 a day greater than the previous daily average.

British School at Rome.

The annual meeting of the British School at Rome was held on Tuesday at the rooms of the Society of Antiquaries, Sir Wm. Richmond in the chair. The Report, which was printed and in the hands of the members, was taken as read, and its adoption was moved by Sir W. Richmond at the close of a very pleasantly written and interesting address, in which, after speaking of the immense change which 100 years had made in our knowledge of Egypt, he referred to Italy as a country in which there was an immense and almost unworked field for future archæological investigation—a view of the subject which is not perhaps in general fully realised; for though we know so much of the aspect of the architectural monuments of Italy, there has not been, comparatively speaking, much of serious archæological investigation of things, as one may say, beneath the surface; and the extension of the British School at Rome and of its list of students may lead to the acquirement of much new knowledge. The British School at Rome must be considered in its infancy as yet, and the Report gave a good account of the work that had been done by the present small band of students, while the drawings on the walls showed a good deal of illustrative work in the delineation of Roman and Renaissance buildings and decoration, by Messrs. H. Parr, L. Preston, and W. Walcot. We confess, however, that we could not quite see the relevancy of the paper read by Mr. Yeames on Montaigne; the fact that Montaigne visited Rome and showed a good deal of interest in what he saw there hardly brings a sketch of his life within the proper scope of the British School at Rome, and we should recommend that on another occasion the paper read should be on some subject more directly connected with the objects of the School.

A New Map of the World.

Under the presidency of Colonel S. C. N. Grant, R.E., Director-General of the Ordnance Survey, as Chairman, a congress has just been opened at the Foreign Office of delegates of the British and certain foreign governments to consider the possibility and expediency of making a fresh map of the world. The proposed scale is 1 : 1,000,000, or nearly 16 miles to 1 in. It is hoped to arrive at some uniform set of symbols and conventional signs for adoption by all nations. Some recommendations formulated by the Committee constituted in London in 1895 are advocated in the name of the International Congress. They comprise (*a*) polyconic projection upon each sheet independently on the middle meridian, the limiting meridians being scribed at intervals of 6° reckoned from the meridian of Greenwich and the limiting parallels at intervals of 4° from the equator, and each sheet showing an area of 4° in latitude and 6° in longitude; (*b*) a kilometre scale, with a scale in miles, if desired, on each sheet; (*c*) brown contour-lines, complemented, it may be, with colour tints, at vertical intervals of 200 metres, or multiples or parts of 200 metres, from sea-level; (*d*) the distinguishing of roads and tracts suitable for vehicles from those which are not suitable; and (*e*) Latin characters for the lettering, and in different forms for natural and artificial features, but to meet cases in which Latin letters are not used the sheets to be produced in two editions for national and international purposes.

Tenders and "Direct Labour."

Our attention has been drawn to the action of the Poplar Borough Council as reported in a local paper in respect to certain tenders invited by them for the erection of a mortuary and *post mortem* room. According to this report twelve building firms sent in tenders, but the Council decided to entrust the work to the Borough Surveyor to carry it out by direct labour. The estimate prepared by the Borough Surveyor showed that one or more of the tenders were thoroughly reasonable if not lower than his estimated expenditure, and one or two members of the Council appear to have had considerable doubt whether, were direct labour to be employed, the estimate could be adhered to. This appears only to be another instance of the difficulties private firms have to contend with in dealing with local authorities. Firms may be put to the trouble and expense of tendering for work ostensibly put out to contract, only to find that the work is not to be put out at all; and, as one member of the Council pertinently observed, if contractors are led to believe that tenders are only invited for the purpose of checking the estimates placed before local authorities by their officials, they will naturally cease to tender for this class of work.

Inaugural Address for Electrical Engineers.

Dr. Kapp, the President of the Institution of Electrical Engineers, gave his inaugural address last week. He passed in review the industrial progress that had been made in electrical engineering during the last ten years, and pointed out the changes that had been made in the design of electrical apparatus. The modern practice is to use very large generators and to drive them by turbines. The manufacturers are prepared to build machines, which have an output of more than 20,000 horse-power, and generate electricity at 15,000 volts. These large machines are particularly useful in the electro-chemical industries, especially those for "fixing" atmospheric hydrogen with the object of producing a fertiliser to replace Chili saltpetre. Electric arc furnaces are used by the Norwegian Nitrogen Company, and their yearly output is 20,000 tons of nitrate of lime. By 1911 it is expected that the production will have increased to 100,000 tons. The process is entirely electrical. No fuel of any kind is used. The heat required for steam raising and other purposes is obtained as a waste product from the electrical furnaces. Dr. Kapp gave some interesting particulars of the applications of electricity to stimulate the growth of plants. Until Sir Oliver Lodge took up the problem of utilising Lemström's discovery that the electrification of the atmosphere immediately above growing crops had very appreciable effects both on the height to which they grew and the weight of the ears produced very little progress had been made. In Lodge's arrangement a network of galvanised iron wires is stretched over the field to be treated, and is suspended

Digitized by Google

at a height of 18 ft. from the ground by means of wooden poles with oil insulators. About one post per acre is required. The network is positively electrified to between 60,000 and 100,000 volts by means of an induction coil and a dynamo driven by a small hot-air engine. The power required is very small, but under the treatment the increase in the yield per acre is about 30 per cent. The system is in use on several farms in this country, and on six in Germany, so convincing data should soon be available. In conclusion, Dr. Kapp pointed out how the introduction of electricity into our great industries could be accelerated by reading papers at the local sections, which would be of interest to the particular industries in the neighbourhood.

Mural Decorations for Liverpool Town Hall.

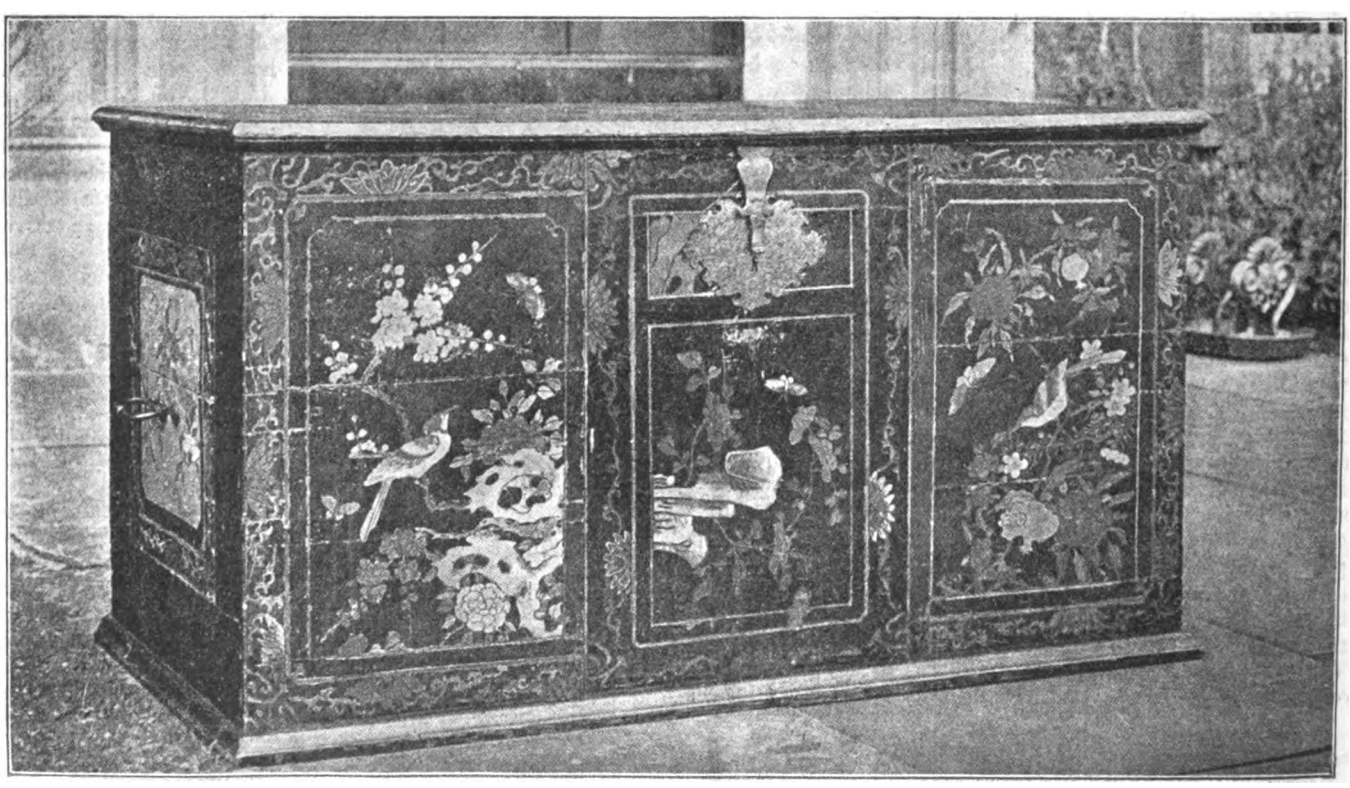
THE Liverpool Pageant of 1907 left the Committee who organised it with a considerable balance in hand. This balance they determined to expend in a permanent commemoration of the festival, which should take the form of four mural paintings in the vestibule of the Town Hall. A competition among local artists was instituted with apparently unsatisfactory results, and the commission was finally placed in the hands of Mr. J. H. Amschewitz. It is, we believe, his first commission since leaving the Academy Schools, where, in 1905, he gained the prize for a "Design for the Decoration of a Public Building." In a brief account last week we spoke of these paintings as Frescos; but this we find is incorrect. Mr. Amschewitz has painted his compositions on canvas, in the manner now generally adopted in France for wall-paintings. They are to be placed in lunettes, about 14 ft. above the floor level, a position which demanded a bold treatment. "Liverpool as a Centre of Commerce" is a dignified and pleasing conception. In the centre is a figure symbolical of Liverpool. Two groups on either hand typify the trade and industries of the port. The background is formed by the sea, on which float Elizabethan ships. Modern opinion is hostile to the introduction of steamships in a decorative design, yet the cogwheel has been admitted into the studio, since, and perhaps before, the Albert Memorial was designed, as a symbol of the industrial arts. This inconsistency is repeated in the present instance, and will be, we suppose, many times again. There are some fine passages of colour, notably in the group on the right. "King John Granting the Charter of Incorporation" is conceived in the right historical spirit, and does not remind us of either Sir John Gilbert or Maclise. Fortified walls compose the background of this eminently civic picture. "Education and Progress" and "Industry and Peace" are the remaining subjects, treated in a similarly excellent manner. We think that the citizens of Liverpool will have no cause to regret their employment of Mr. Amschewitz, who has executed the paintings in a spirit commensurate with the dignity of their future surroundings and position.

Hogarth's House, Chiswick.

COLONEL SHIPWAY has presented the title to this house, in Hogarth-lane, to the Middlesex County Council with a view to its preservation in trust for the public. He purchased the property at auction for 1,500*l.* eight years ago to save it from being pulled down. He employed Mr. F. W. Pell to repair the fabric as a museum illustrative of Hogarth's work and life. There are drawings of the house in the *Builder* of February 8, 1890, and June 22, 1901. It has three floors and an attic story, and was built in the early XVIIIth century of red stock bricks with rubbed brick dressings; in the north front are a central wooden oriel and a boldly moulded eaves-course. Hogarth bought the house as a country residence during the closing years of his life, after his return from Calais. He bequeathed the property to his widow, who demised it to her relative Mrs. Mary Lewis with remainder by appointment under Mrs. Hogarth's will. The house was occupied, 1814-26, by the Rev. H. F. Cary, translator of Dante, and latterly by the Typographic Etching Company for their works. It is said that the two leaden urns on the gate-posts were a gift to Hogarth from Garrick.

Holme Lacy, Herefordshire.

THE story of this estate, which extends over 5,600 acres, in the Wye Valley district between Ross and Hereford, goes back to a remote period. The heiress of the De Lacys brought it in marriage to the house of Scudamore, who lived there nearly five hundred years. Sir James Scudamore, Spenser's friend and patron, was the original of Sir Scudamore of the "Faërie Queene." His son John, our ambassador to France, was created Viscount Scudamore and Baron Dromore in 1628. After the death of Frances Scudamore, who married, 1771, the Duke of Norfolk, the property devolved upon Sir Edwyn Scudamore-Stanhope, Bart., a Captain in the Royal Navy, whose son, Sir Henry, succeeded, 1883, as ninth Earl of Chesterfield. The mansion was rebuilt, mostly of red sandstone in a semi-classic style, by the third and last Viscount Scudamore, Pope's friend, who died in 1716. Lord Chesterfield, who, we gather, recently disposed of the house with much of the land, will offer for sale in January next the valuable effects collected at Holme Lacy. There are an over-mantel and other carvings, by Grinling Gibbons; family portraits attributed to Vandyck, Hudson, Lely, and Ramsay; some French furniture of *temp.* Louis XIV., and English of the XVIIth—XVIIIth



Lacquered Cabinet in the Holme-Lacy Collection.

Digitized by Google

centuries, with a remarkable cabinet by Chippendale in the Chinese manner; and fine examples of Burgundian tapestry.

The Birkenhead Building Mishap.

WE print on page 560 a letter from Mr. Fraser, the architect for the Birkenhead building which collapsed, to which we are bound to draw special attention. Mr. Fraser gives a perfectly reasonable and straightforward account of his own procedure; he is not an expert in ferro-concrete (very few architects at present are), and he employed a concrete specialist and a contractor whom the specialist recommended. We do not see, on his own showing, that he could have done more, and we apologise to him for an implied charge against him which appears not to be in the least justified by the facts which he has, at our request, put before us. We might add that the last paragraph of our former note, from the words "If an architect is himself an expert," were not really intended as a personal reference, but as a general reflection on the position of the architect in regard to ferro-concrete work. However, we have done Mr. Fraser an injustice, and we express our regret for it.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE usual fortnightly meeting of the Royal Institute of British Architects was held on Monday at No. 9, Conduit-street, W., under the chairmanship of Mr. E. George (President).

Mr. H. T. Hare announced the decease of Mr. T. Worthington, Past-President of the Manchester Society of Architects. Mr. Worthington's connexion with the Institute dated as far back as 1846, when he was awarded the silver medal of the Institute for an essay on the history and manufacture of bricks. He was elected a Fellow in 1865, and served as Vice-President from 1885 to 1889. Retiring from practice, he was placed on the list of retired Fellows in 1907.

Mr. Slater proposed, Mr. E. T. Hall seconded, and Mr. Burnett supported a resolution to the effect that a letter of condolence be sent to the family of the deceased member, and this was carried.

Mr. Collcutt's Portrait.

The President proceeded to unveil a portrait of Mr. Thomas Collcutt, the late President. He alluded to the high qualities which were united in Mr. Collcutt, who, he said, was a thorough man of affairs and a consummate artist. Mr. Collcutt was to be congratulated on being handed down to posterity by the work of Mr. Cope.

Mr. J. Slater also referred to the work of Mr. Cope, and said they would all agree that the portrait would be a most charming addition to the gallery which adorned the walls of the room.

Planning and Laying-out of Public Places.

In the absence of Mr. H. Inigo Triggs through illness, a paper by him on this subject was read by the Secretary.

Referring at the outset of his paper to present conditions, Mr. Triggs observed that the advent of the newspaper had abolished the principal reason for which the mediæval public place existed—namely, to hear and discuss the news of the day and listen to the public proclamation. A demand had arisen for new types of public places, for traffic places that should effectively receive and distribute streams of vehicles with safety to pedestrians; for monumental and garden places; for places useful at the same time for military parades, exhibitions, or sporting purposes, sanded or turfed and surrounded by trees, such as the Champ de Mars.

Aviation was making rapid strides: the necessity for trial grounds and alighting places will soon make itself felt; and the day might be not far distant when Hyde Park itself would furnish the site for a new form of place, the aviation place, with gigantic sheds able to accommodate a fleet of dirigibles.

Considering some of the more important points to be learnt from a study of town planning in the past, one of the first lessons was the value of grouping buildings round definite and fitting centres. Sir Christopher Wren strongly emphasised the importance of this in making his plan for the rebuilding of London.

In classic cities the Agora and the Forum invariably formed fitting centres for the grouping of the principal public buildings, and in mediæval towns we always find the public places dominated by some great church or public building.

In replanning Paris Baron Haussmann and his successors fully realised that more depended upon the placing of structures than upon the structures themselves, for a noble building amongst mean and ugly surroundings was worthless in any scheme of town planning. Public buildings, standing as they do for the whole community, should represent its highest ideals.

The principal civic centre should naturally be occupied by Government or municipal buildings. But as a city grew the necessity would arise for the creation of many subsidiary centres or focal points connected by thoroughfares and scattered about as dictated by the topography. In London we too often lost sight of the importance of enclosure to a public place. Hyde Park Corner, for example, would be much finer if the five broad roads that enter it could be arranged to converge towards a large semi-circular architectural place. In Piccadilly and Oxford Circus, the sense of enclosure was entirely lost by the large proportion of circumference given up to the street openings. Sitte and other writers had insisted on the importance of preserving and even creating an irregularity in public places, although anything like a studied irregularity was hardly likely to be a success.

The public places of a modern city might be considered from three aspects—traffic, business, and ornament. In England the possibilities of treating traffic places as a means of properly intercepting and distributing traffic currents had not yet been fully realised. The second class business places included those various types of place whose principal object was to facilitate the transaction of business. Ornamental places included all those laid out solely with the object of adding beauty to the surroundings without any regard to traffic. Architectural places include those which are designed to set off the surrounding architecture to its best advantage. The ideal form of town plan was the one in which the smallest number of traffic places occurred. For practical reasons it was desirable that the various lines of traffic should not intersect one another at one point, and where this was likely to be the case this point should be chosen for a pavement or grass plot. A favourite form of traffic place in modern continental cities was the *round-point* or circus, upon which the thoroughfares converged like the spokes of a wheel. It had been much used where new quarters had to be united to old ones by thoroughfares, and its fullest development had been reached in such examples as the Place de l'Etoile and the Place de la Nation in Paris. An interesting feature of the Place de l'Etoile was the outside ring of side streets, designed to relieve the traffic and to give additional access to the large blocks of buildings surrounding the place. Where the *round-point* is of so large diameter, as in this case, it is a convenient form for the traffic place, but where the diameter is smaller, and insufficient to allow for the secondary relieving street, the form could hardly be recommended. It was was often impossible to avoid four or five streets converging. Where this happened, instead of directing them towards a central point, it was better to form an oblong or an elliptical place, both of which forms were preferable for dividing the circulation of traffic. The Place de la République, Paris, was a good example of an oblong traffic place: about 325 yds. by 130 yds. between the buildings, with seven main thoroughfares entering, three at one end, two at the other, and one at each of the long sides. The whole of the centre of the place is occupied by a broad promenade with a fine central monument, two fountains, and double rows of trees. Where it was essential to restrict the area that could be devoted to such a place, a plan upon an oval form might well be adopted. The half circle was another suitable form for a traffic place, particularly where traffic coming from one direction has to be spread out, as at the principal entrances to towns, railway stations, bridge approaches, etc. The Piazza del Popolo, Rome, was a good example of this treatment, with an additional charm due to the clever handling of the surrounding architecture.

The type of business place, which on the Continent was known as the garage place, generally planned in front of railway stations, was almost unknown in this country. The railway station was the main entrance to the city, and as such it had taken the place of the old city gates. In America the Railway Corporations were realising that it paid to make station surroundings attractive, and many of the large European cities, like Hanover, Turin, Basle, and Milan, had laid out their garage places in a strikingly beautiful way, in order that the first impression of strangers arriving by rail might be a favourable one. Those who knew the station place at Milan, or the wonderful way in which the trams were planned to circulate in the fine square before the cathedral in the same city, would realise how important this point was.

As to types of architectural place, the Place de la Concorde, Paris, was a good example of a place partly surrounded by buildings. It was planned at the crossing of two important axial lines, north and south from the Madeleine to the Chambre des Députés, and east and west from the Tuileries to the Arc de Triomphe. Though smaller in area than the largest Berlin and Vienna places, it was one of the finest examples of a monumental place in the world.

Public squares that are entirely surrounded and enclosed by buildings were likened by Stübben to the salons of a town, just as the streets might be compared with the passages. Such squares did not require a long street vista to set them off properly; it was better that they should rely for their effect entirely upon their own architecture. Regularity of form was by no means essential, and, indeed, was often very difficult to discern; thus, in St. Mark's Place, at Venice, we saw how deceptive such a plan might be when put on paper, for to the majority of observers it would be impossible to detect that the length of the two shorter ends was not identical.

The oblong form was that most generally used for an architectural place, and an agreeable proportion between the long and short sides was one to three. The square form was also pleasing, especially if the streets entered at the four corners. The Place Vendôme, Belgrave Square, and the Amalieborg Platz, Copenhagen, illustrated the effect of placing the four corner buildings at an angle of 45°. In the Place Vendôme the centres of the long sides are emphasised by slight projections, which serve to break up the monotony of the skyline. A fault in the planning of this square was the danger to pedestrians of having to cross a wide area of roadway, unless they cared to walk all round the footways. This arrangement was inevitable where the centre of such a square is occupied, as here, by a monument.

The idea of an architectural square of uniform buildings probably originated in Paris, where the Place Royale was laid out

Digitized by Google

by Henri V. in the early years of the XVIIth century. It was an exact square of 152 yds., and the surrounding architecture and arcades still retained much of their original character. From France the idea of the Place Royale was soon imitated in London, where, about 1620, a Commission was appointed by the Crown to "plant and reduce to uniformity Lincoln's Inn Fields as it shall be drawn by way of map or ground plot by Inigo Jones." Like the place Royale, the square was surrounded by private houses, forming one continuous façade, broken only in the centre and at the angles by buildings rising slightly above the rest. A few years later the idea was imitated in a grander form in the piazza of Covent Garden, where an arcade was carried along the whole of the north and east side; the church completed the west side, and the south was enclosed by trees. The idea, once started, soon grew into favour, and towards the end of the XVIIIth century an increasing demand for dwelling houses of a more stately character resulted in many large London estates being dealt with as a whole. The usual plan was to form a large open square, to plant trees and shrubs therein, and to design the houses with a view to their architectural symmetry.

In regard to places laid out for purposes of ornamentation, there was this great difference between a garden place and the other types of public place. The latter, traversed in all directions by currents of traffic, might be as dusty and noisy as the street itself; but the garden place was essentially a place of repose and a retreat from dust-laden streets, and should be treated as such.

To make any attempt at landscape gardening in a town square bounded on all sides by solid blocks of buildings seemed hardly likely to be a success. The treatment of such a square should be in architectural and formal manner. An idea worth considering was shown in the treillage screen surrounding the Beethoven Platz, Vienna. In this case treillage had been used to enclose the place until the limes had sufficient time to grow up; the treillage would then be removed, and the trees form a kind of green cloister round the place.

Forecourt places were particularly valuable as a means of exhibiting the architecture of an important public building to its best advantage. It was inadvisable that important buildings should be erected in a line with the frontages of the other buildings in the street; if it is possible to set them back somewhat, an air of greater importance was imparted, and at the same time they gained considerably by being seen in a more favourable perspective. The finest and most monumental place of this kind in the world was that which Bernini planned in front of St. Peter's. The place consists of three parts: the Piazza Rusticucci, surrounded by hotels and shops; the large oval piazza, 370 yds. by 260 yds.; and beyond that a forecourt with steps leading to the principal entrance. It was originally the intention of Sir Christopher Wren to surround St. Paul's Cathedral by a colonnade similar to Bernini's treatment of St. Peter's. Another example of a forecourt place, though planned on a more humble scale, was the Place de la Trinité, Paris. As at St. Peter's, it showed the good result of raising the monumental building well above the surrounding ground level. In this case a double ramp encloses a small oval garden and ascends to the *porte cochère* of the church. The immense courtyards in front of the palaces of Versailles and Caserta were examples of approaches planned upon a vast scale. The former consists of three separate courts: the inner courtyard, or *Cour de Marbre*, enclosed by the wings of the palace; the outer courtyard, or *Cour Royale*; and the third fan-shape courtyard, or *Place d'Armes*, for great public reviews and displays. The effect of the approach was however marred by the lowness of the palace buildings and the lack of an imposing central feature.

Places which are partly built upon frequently occurred in cities where triangular and irregular sites had been created by intersecting thoroughfares, and were suitable for the erection of such buildings as churches, museums, and picture galleries, whose character demanded an important open site on account of their architectural importance and of the necessity of obtaining light on all sides. The Place de l'Opéra and Place de la Madeleine, Paris, and the Gensdarmen Markt, Berlin, were good examples of ornamental places, though varying considerably in their character. The first was planned upon a lozenge-shaped site overlooking the Place de l'Opéra, and terminating a superb vista from the Place du Théâtre Français along the Avenue de l'Opéra. The entire scheme was perhaps the greatest result of Haussmann's remodelling, and architecturally one of the finest examples of town-planning in Europe.

In conclusion, Mr. Triggs expressed his gratitude to the Institute for, three years ago, having conferred on him the Godwin Bursary, by which means he was enabled to study the planning of public places in Paris, Berlin, Munich, and Vienna. Fine as these might be, Londoners could boast that London stands unrivalled amongst European cities in possessing the largest number of public open spaces in proportion to her acreage and also to the number of her citizens. Having this splendid series of public open spaces, might we not justly reproach ourselves as architects with the poor use that had been made of them?

Mr. H. V. Lanchester, in proposing a vote of thanks to the author of the paper, said reference had been made to the axiom that more depended on the placing of important structures than on the structures themselves. That might be regarded as true under the system adopted in the formal scale of civic design, but he believed the opposite to be true when they came to look on design from the point of view of the informal system. He had been reading some articles on the informal method of civic design, although perhaps it was hardly fair to call it an informal method, for it arose from the adoption of the natural lines of traffic and the obvious utilities of the primitive city. There they saw that those cities, which apparently originally were laid out accidentally, acquired a charm which was very often denied to those which had been laid out with the most studied art. In such a case it did not seem to him that more depended on the placing of the structures than on the structures themselves, but the beauty of those cities depended on the design of the structure absolutely, as adapted and artistically considered with regard to the accident of its position. That would give some clue to the reconciling of the differences of the standpoints of the two schools. They saw in one case the school which said, "Let us have buildings absolutely adapted to the position, however curious or irregular the position may be; let us, as architects, study its irregularities and out of them secure all the charm obtainable." The other school said, "Let us study the positions of our buildings, and if the buildings are reasonably good, then they will tell of themselves." He regretted not having seen on the screen some illustrations of Mr. Triggs's intentions with regard to the semicircular place at Hyde Park Corner, for at present it was not clear to him what the intention was. As to the garage place opposite railway stations, in England they were inclined to adopt a different system with a circulating arrangement of public vehicles proceeding from one end of the station to the other, but the place still applied to the common vehicular traffic of omnibuses. They were working on a slipshod basis with regard to the circulation of vehicles through railway stations, and a good deal might be done to make the circulation more easy and natural. As to the division of the types of place, it always appeared to him that the importance of a forecourt place was a difficult thing for the northern mind to understand. It had no doubt grown from a feeling in the south that there should be a graduation in the act of passing from the outside air to the interior of a building, and the plan of the building and its surroundings was not a distinct thing as they were apt to think in the north. They found in all the important buildings of the Classical periods that they were connected by loggia which broke the suddenness of the transition from bright sunlight into the comparative gloom of the interior of the building. In their own clime they did not feel the same need for this. Starting from the earliest periods of Egypt, Greece, and Rome, the Renaissance gives us the forecourt of the church, which is certainly of great value, especially in the south. Of course, one always recognised its architectural importance.

Mr. Paul Waterhouse, in seconding the motion, said he felt that the whole question of the planning of "places" was one which, so far as it had any practical bearing, must be intimately wrapped up with the general principles of town planning. Sometimes he felt they were in danger when talking of the general principles of town planning of forgetting that these so-called general principles were in reality very much divided into classes. One realised, to begin with, that the needs of large cities were very different from the needs of small cities. In the small city a single centre was a desirable, convenient, and beautiful thing, but in large cities a single centre was obviously impossible and undesirable, and could not be handled beautifully or advantageously. Then they had to consider that part of the efforts of the town-planner were necessarily directed to remodelling, and the rest of his energies would be devoted to the planning of new cities if he had the chance. It might be said that the chance of entirely planning a large city was an impossible one, but it was borne in upon them as a matter of practical importance, for the reason that if any man had the luck to be asked to remodel a large city such as London the only way he could do so was to begin by setting before himself on one hand the existing state of things and present needs of the City, and, on the other hand, his ideal vision of what he would do with a city of the size on the site. He supposed no more horrible nightmare could possibly come to a distinguished architect than to dream that he was authorised by the Government to redesign without any restrictions the capital of the British Empire, and to have a free hand to choose any site he liked for that purpose. Such a problem from the very withdrawal of restrictions would become so great a burden that the consolation of a large honorarium would go nowhere to relieve him. Fortunately all those problems had to be attacked through obstacles, but their real grievance was that they had no chance to attack them, and they did not see how the remodelling even of London was to come within the range of practical politics. They heard once a great deal about the Traffic Commission, but now they heard nothing. The Commission, however, did an enormous work in bringing together data, and got to the very foundation of the difficulties of the traffic problem of London. In their Report the whole of the traffic difficulties were systematised, analysed, divided, and set out in such a way that they could know the traffic difficulties of every part of London, and the Commission concluded its labours in a practical way by showing how streets could be made so that traffic might get from place to place with far greater ease than at present. All that was needed was that the schemes should be nurtured and doctored architecturally. He had had the opportunity of showing before that Institute one of the many ways in which the lines of route suggested could be brought into convenient alignment with some of the existing buildings of London, and he hoped the day would come when

Digitized by Google

some architect or body of architects would be engaged in helping in the formation of these new streets. Schemes for the remodelling of London should be hatched out from the beginning with the assistance of architects and carried through with the assistance of architects. He believed a great solution of the traffic difficulty was to be found in gyratory regulation. Vehicles coming to a point where several roads met should, instead of darting across the open space, be compelled always to turn to the left and go on until they came to the street they wanted to go into. There were two difficulties about it, one being that drivers would be compelled to keep to the near side or else they would be cut off from getting to the street they wished by other vehicles, and the second that the foot passenger would not get a chance of crossing. Such a scheme must therefore be accompanied by subways. He would also like to see a further application of the viaduct system (as at Holborn), for there were still several places in London where he believed it would be a success, although they must also have the safeguard of having some means of getting traffic from the low to the high level.

Mr. H. H. Statham said that reference had been made to towns where the street lines had been formed upon natural lines, but he would like to know what was meant by "natural lines." How did it come that the High-street of Oxford went in a sweeping curve? He supposed it was due to some little irregularity in the demarcations of property at the outset, and presumed it was this which had really given rise to what was called natural planning of streets in mediæval towns—they really began as lanes past someone's fields, which were of irregular shape. He did not see what the planning of modern towns had to do with natural planning, for a town was an artificial thing, and they had to consider and treat it as such. He noticed in recent plans for the improvement of modern cities there was a tendency towards the adoption of oblique and radiating lines of streets, or what he might call the gridiron plan with the radiating line. A great deal was to be said for the radiating principle of streets in regard to vista and effect, and also in respect of the shortening of distance from place to place; but, on the other hand, it had to be remembered, from the point of view of buildings, that it left a great many plots which were awkward to plan and treat architecturally. Although he was very fond of Paris, yet he thought the radiating line there had been carried rather too far, and that one got rather tired of it. A further objection was that unless a visitor knew the place very well, he got rather puzzled, for there were no right angles to guide him, and he began to forget where he was. It must, moreover, be admitted that the gridiron plan, where it offered very good building plots, made one go round two sides of the square to get from one place to another. As to forecourts, was not architectural effect the great reason for them? If they had a building worth looking at they put a sort of preface to it, and set it back from the road and gave space for people to admire it. In the case of railway-stations and places of the kind the forecourt was provided from the point of view of convenience, as that prevented the turning of a stream of cabs, when a train arrived, right into the street traffic; it gave time for the drivers to arrange themselves and see their way out. In London the great mistakes which had been made at several points were due to the exclusive consideration of streets without proper consideration of the points between them. That was the fatal mistake in the case of Hyde Park Corner, which he considered one of the greatest blunders of modern times. The Constitution-hill Arch ought never to have been moved, for it formed a parallel line with Apsley House, and was taken away and placed at an angle where it faced nothing and led to nothing. The same blunder had been made with the attempt to improve the Marble Arch. Mr. Speaight's original design had a certain dignity and showed a semicircular road round it, but it was thought by those responsible that the road shown was not the best for traffic; but now they found the arch left standing in the centre of a space, without being any use itself and without the appearance of any architectural scheme. In the case of such a triumphal arch as that in the Place de l'Etoile, he often wondered whether it was a correct thing to put up an immense arch which suggested the idea of a gateway, and use it simply as a thing to drive round. It always seemed to him that the traffic of the Champs d'Elysées should go through that arch. They found the market places of old towns which were irregular in size look very well, but that was no excuse for deliberate irregularity; and when they came to the planning of a square in a great town he was in favour of symmetry.

Mr. Hooper said that Mr. Statham had alluded to the difficult building sites which resulted from an irregular form such as a circus. The difficulty of planning any arrangement of site or schemes on on absolutely rectangular principle did in old cities result in a great many irregular forms, but the plan of the Piazza of St. Mark showed that a most dignified effect could be obtained without rectangular enclosure, as did also the courtyard of the Doges' Palace. If this matter could be always borne in mind by those in authority many difficulties might be overcome. Some of them would remember the time when Mr. Westgarth offered prizes at the Society of Arts for a scheme for remodelling London, and Mr. W. Woodward was amongst the successful competitors. Unfortunately Mr. Westgarth's death put an end to an earnest effort to improve London, and how much they lost they could hardly tell, for Mr. Westgarth had made up his mind to educate the public and to ask the architects to give their attention to the problem. Mr. Waterhouse also had given a paper which had brought the subject prominently before the profession and the authorities, and he felt that every time this question was discussed by the Institute they did something not only to educate the public, but also to educate themselves.

Mr. W. Woodward said he expected to have heard some reference to the last effort in London to get some magnificent display of architectural art accompanied with sculptural adornment. Mr. Statham had mentioned the Marble Arch, and he considered a more unfortunate result of architectural and other display could not be imagined. He had suggested to Mr. Speaight that the arch was at present isolated and had no *raison d'être*, and would be of more service if shifted back. The entrance to the avenue leading to the Queen Victoria monument could now be seen from Charing Cross, and he understood that the Government had determined that no more houses should be pulled down so as to open up the magnificent curve designed by Sir Aston Webb. Even if the houses were pulled down the improvement could not be considered complete unless Drummond's Bank was also pulled down and Whitehall widened at that end, as had been so often insisted upon by the Institute. He considered that a great blunder had been committed by placing the heavy masonry over the three arches, as it not only spoilt the effect of the improvement, but deprived Londoners of the opportunity of looking from Charing Cross through a fine vista to the monument of Queen Victoria. They were looking forward to Mr. Norman Shaw's design for Piccadilly-circus, and they were confident that it would be something fine. Mr. Shaw would give them an improvement on Nash's Quadrant, for, instead of leaving Air-street open, he would continue his architecture right round the quadrant.

The President said it was only fair to Sir Aston Webb to say he had done the best thing he could do. His building was cleverly planned to cover the ugly skew which came at that point, and if the street were carved through people would look at nothing but the halves of two houses. It could not be carved through to give a vista.

Mr. Speaight remarked that the impression one got at looking at the illustrations was how peaceful the places looked and how different they would be if in London. In London the few places they had got were spoilt by the fidgeting and annoying things which were left to appear in them. The speaker proceeded to refer to the existence of illuminated advertisements which were allowed to face the opening of the avenue of Sir Aston Webb, and the flower-tubs which were allowed in front of the Royal Exchange, which, he said, would have been prevented in other countries. He also alluded to the private action which had resulted in an illuminated sign in Trafalgar-square being removed and to the substitution of bays for geraniums in Parliament-square, which, he said, were things which ought not to be left for the individual to get remedied.

Mr. Raymond Unwin said he dissented from the view of Mr. Waterhouse that it was not possible to have a centre to every big city. It would not be possible to crowd everything into one centre, but it was possible to have one centre and supplementary centres as well, and if they were to give a sense of scale to their plans of towns it was largely by the use of places; not only individual places, but also groups of places which were charming features of many continental towns. The importance of scale between different parts in the making of the whole must be borne in mind not only in the planning of the centre of a town, but also in the planning of suburbs. If they made use of places in the case of suburbs and carried them down to such small areas as building estates, they would get more interest in the design and more sense of scale. The Place de la République in France had been mentioned as a good example of the treatment of multiple junctions and as being better than the round place. If there was any virtue in the round place it was that they got all the traffic in one direction, but as soon as they got an oval place they either had a cut across the middle which must upset the gyration, or, as in the Place de la République, they had to make detours to get round. The statement that gyration was only possible in a place of immense size needed reconsideration, for a comparatively small area was sufficient for any ordinary traffic. He noticed that the author, in his design for a railway-station, provided against the passenger having to step outside right into the stream of traffic. At the Gard du Nord in Brussels they went right into the traffic. In the case of garden-places some of those shown seemed rather frittered away in a pattern worked out, and those which were simply treated appeared the most successful. The garden in the square of the Royal Palace at Paris was well treated, as was also Lincoln's-inn-fields.

The motion was carried.

The President announced that the next meeting would be held on November 29, when an election of members would take place, and various questions would be brought before the meeting by Mr. W. Woodward, Mr. G. A. T. Middleton, and Mr. Ed. Greenop.

NEW ABERBEEG CHURCH.—The Bishop of Llandaff recently dedicated the Llanhilleth new parish church, which stands on an elevated site near the rectory. It is XVth century Gothic in style, and is built of local stone, with Doulting stone dressings. The roofs are all of open timbered construction, and the seating and choir stalls of Austrian oak. The chancel, transepts, and towers are completed, but at present only about one-third of the nave and side aisles. The edifice will accommodate about 300 worshippers at present, and 500 when completed, the cost being over 4,500*l*. Mr. E. T. Bevan, of Penarth, is the builder, and Mr. E. A. Johnson, of Abergavenny and Merthyr, the architect.

Digitized by Google

EGYPT EXPLORATION FUND.

THE annual meeting of the Egypt Exploration Fund was held on Friday, the 12th, at the rooms of the Royal Society; Lord Cromer presiding. Mr. Grueber, the Hon. Treasurer, read the financial Report for 1908-1909. The ordinary English subscriptions amounted to 1,105*l.* 10s. 2d., an increase of over 100*l.* on the preceding year; and those from America were 181*l.* 5s. 9d., an increase of over 50*l.* But the net results of expenditure and receipts showed that, in spite of all the care exercised by the Committee, they had exceeded their income by 91*l.* 15s. 2d. The accounts of the Archæological Survey showed a balance of 178*l.* 13s. 7d. With his accustomed liberality M. Naville had not drawn upon the Fund for any of the expenses which he incurred in connexion with his visit to Egypt last season. They owed M. Naville a great debt of gratitude, not only for this generous act, but also for the labour which he so lavishly bestows on the production of their annual memoir.

Lord Cromer delivered a short address, in which he referred to the difficulties arising from the conflicting interests of non-Egyptians in Egyptian questions. That even Egyptology could not escape from this taint was abundantly proved by the negotiations which took place in 1904. Dead Pharaohs were able to revenge themselves for what they would have considered the desecration of their tombs by casting the apple of international discord amongst those who disturbed their ancient solitary reign. But he demurred to the statement that the interests of Egyptology were sacrificed. Consider what had happened. At the instance of the French Government, an engagement was taken that the head of the Archæological Department in Egypt should always be a Frenchman. Was this an excessive demand on the part of the French? He could not think it was. The French were really the fathers of Egyptology.*

Mr. J. S. Cotton (the Hon. Secretary), in his address, alluded specially to the late President, Mr. Hilton Price, who died at Cannes on March 14. His father was a partner in the banking house of Messrs. Child & Co., which he himself entered at the age of eighteen, and of which at the time of his death he was the principal acting partner. But he early showed a bent for antiquarian research, and began by investigating the history of his own profession. But it was Egyptology that claimed perhaps the main share of his interest in later life, and he impartially supported every institution which was doing good work in Egypt. He acted as Honorary Treasurer to the Egyptian Research Account from its inception, and continued to act in the same capacity to the British School of Archæology in Egypt.

After a brief reference to some other deceased members, Mr. Cotton said that as regards the Egypt Exploration Fund proper, in 1907-8 they had no expedition; but they started some excavations again last winter on a concession at Abydos, under the direction of M. Naville, with the assistance of Mr. Ayrton and Mr. Loat. The work at Abydos itself consisted mainly in clearing and preparing ground for the coming season.

Whilst these excavations were proceeding, information was received through native sources that a pre-dynastic cemetery was being plundered at El-Mahasna, some eight miles north of Abydos. So soon as the necessary permission from the Egyptian Government had been procured, the camp was moved thither, and in the space of a month the cemetery yielded a large number of objects of the greatest interest, many of which were on view at their exhibition in July.

Referring to work that had been done by other Societies and workers in Egypt during the past season—

The Egyptian Service of Antiquities had expended its energies largely on the survey of Nubia, which was rendered necessary by the decision of the Government to raise the dam at Assouan. It was continued by Dr. Reisner, and carried southwards a little beyond Kalabsha. Then he resigned his position as director, which was taken over by Mr. Firth, who has since continued the survey to Koshtamna, sixty-five miles south of Shellâl, leaving about forty-five miles still to be surveyed. Signor Barsanti had carried on the work of repairing and strengthening the temples in the same region which had been so much neglected in the past, and were now threatened with destruction by drowning. Unhappily, archæologists who had been there recently did not give very favourable reports of the way in which the restorations had been carried out. At Karnack M. Legrain had been hard at work with his re-erection of the fallen columns in the hypostyle hall of the temple of Amon. It would soon be restored very nearly to the state in which it was in the time of Rameses II. Further north, at Saqqara, Mr. Quibell had devoted his season to uncovering the monastery of Apa Jeremias. A space of nearly four acres has been excavated, presenting a mass of irregular buildings, dating from about A.D. 520 until their final destruction, probably in the VIIIth or IXth century. The earlier architectural work was very fine, and was displayed in a large number of capitals and sculptured blocks of great beauty in themselves, and of importance in the history of art, as their material showed them to be of local workmanship. Two churches had been found; a small earlier one, in which the capitals were all of the Corinthian type, and a later and larger church the capitals of which approximated in type to the Byzantine style, as seen in St. Sophia and at Ravenna.

Among English expeditions, the most important work was done by Professor Flinders Petrie for the British School of Archæology in Egypt. He worked with success on two sites, first at Gourneh, on the west bank of Thebes. Later in the season he moved to Memphis, where he discovered the palace of Apries (the Pharaoh Hophra of the Bible), a building 400 ft. long by 200 ft. wide, with walls preserved from 10 ft. to 15 ft. high. The stone-lined halls, of which seven remain, were over 40 ft. long and half as wide. The brick halls were nearly as large, and the walls were about 15 ft. thick. A still larger court extended on the north side, in which lay capitals of columns which must have been about 50 ft. high. In spite of the difficulties with water, etc., the work at Memphis promised to yield results of the greatest importance for Egyptian history.

Mr. Naville, who was unable to be present owing to other engagements, sent the following short paper in regard to Abydos, which we print in full:—

"I should like to impress in a few words upon this audience the importance of the excavations at Abydos.

In settling at Abydos, at a place where we shall have to remain for several years, we make no new departure, we do not act differently from what we have done at Deir el bahari. We initiate no new method, we are following the principle which has now been adopted in Egypt by all really scientific explorers. More and more the erratic explorations are being abandoned. Scientific excavators do not change every year their sites. They settle in one place, and do not leave it before they know what there was in antiquity at the spot where they are working. They do not dig merely for filling museums or making private collections; they do not declare a site to be worthless because they have nothing to carry away from it. The clearing may solve important historical or artistic questions though no statues or objects may be found in it.

It was on this principle that we worked at Deir el bahari. A part of the great temple had already been excavated by Mariette before we began, nevertheless, the complete clearing has added much to our knowledge; for instance, it brought to light the great altar which was unique for a time. Several have been found since, but none so large, and in such a good state of preservation.

A considerable amount of information has been brought to us by the temple of the XIth dynasty, the discovery and clearing of which is entirely due to the Fund. Although the Hathor cow was bound to remain in Cairo, I believe the Fund has every reason to be satisfied with what has been done. It yielded a considerable number of fine objects, many of which may be seen in the galleries of the British Museum. Besides, Deir el bahari has now become one of the chief attractions of Thebes. It is a work which one may call complete, and it will remain as a lasting witness of what the Society has done.

After Deir el bahari I could not but recommend strongly Abydos to the Society. It is a large place, where there is work for years, and where a great variety of epochs is found. Everybody who is interested in Egypt has heard of the royal tombs at Omm el Gaab, which were discovered by the Frenchman Amélineau, and where Professor Petrie has worked afterwards. They are the oldest monuments of historic Egypt. Tombs have been found, their contents have been taken out, but the place has not been cleared. We have no general plan; we do not know how these buildings joined, which may give us important clues as to their succession, and that of the kings who occupied them. The complete clearing may give negative results, but it may throw much light on the much-discussed questions concerning the two first dynasties, the very dawn of Egyptian history. Egyptologists generally look at it in that view. But this work will not monopolise our efforts and our money. It may be carried on at the same time as the excavation of parts of the extensive cemetery, which we have no doubt will be productive of objects for museums.

Abydos is a place where every kind of antiquarian research may be made. There are monuments of a kind quite unique, which still lay buried in the sand. For instance, the long subterranean passage covered with religious inscriptions, named by Mr. Petrie the Osireion, and of which he cleared only one chamber, is now filled up again. We do not know yet the place which the Greek authors call the tomb of Osiris at Abydos. These researches are of the greatest interest; the money which they will cost will be repaid by the scientific results which we shall derive from them.

At the same time, Abydos is a huge cemetery, where Egyptians liked to be buried from the earliest times down to the Roman emperors; VIth, XIIth dynasties tombs, new empire, Ptolemies, every time is represented there. Much work has been done there already, but no systematic exploration from which there is much to expect. Last year our work was tentative; this year we know better what we have to do, and we earnestly hope that at the next meeting we shall be able to report to you interesting results, even if we have not succeeded in getting a very large collection of objects."

Dr. Hunt's address on the subject of the work of the Græco-Roman Branch was of considerable interest in itself, but was entirely occupied with the subject of *papyri* and of literary discoveries, which do not come within our province.

THE SOCIETY OF ARCHITECTS:

PRESIDENT'S ADDRESS.

A MEETING of the Society of Architects was held on the 11th inst. at Staple-inn buildings (South), Holborn, W.C., the President, Mr. G. Bond, J.P., in the chair.

The minutes of last meeting having been read and confirmed and some candidates for membership having been admitted,

Mr. T. R. Richards, Hon. Auditor, read the auditor's report for the past year, which showed a surplus of 26*l.* 9s. 11d., and an expenditure of over 2,000*l.* He said that the Society might congratulate itself upon the financial results for the year.

On the motion of Mr. Moscrop Young, seconded by Mr. Morgan, the adoption of the report was agreed to.

The President then read his opening address, in which, after touching upon matters chiefly connected with the working of the Society, he proceeded:—

"Now, gentlemen, I must refer to that hardy annual, Registration. Although it has not been possible to have our Bill read in Parliament during the past year, all supporters of that far-reaching measure

* It might be said that Napoléon was. It was he who took out with him the French archæologists as attached to an otherwise purely military expedition.—E.P.

Digitized by Google

may congratulate themselves upon the fact that it has now passed beyond the academic stage and entered the region of practical politics. This has been clearly demonstrated during the year by the large share of attention accorded to the subject at professional meetings and by the professional journals both at home and abroad. We are able to record the first legislative success in the cause of the registration of architects which has been achieved in the British Empire; and we offer our hearty congratulations to our Transvaal brethren upon the consummation of their desires in this direction.

Early in the session your Council forwarded to the South African branch of the Society a sum of 50*l.* as a donation towards the cost of promoting the Bill, which was duly introduced in the Transvaal Parliament in June and referred to a Select Committee; its second reading was only opposed by some three or four members, whose remarks with reference to its working demonstrated clearly that they had not understood its provisions, and it ultimately passed the third reading without opposition. A Bill having the same object in view is now being prepared for submission to the Parliament of New South Wales, and as it is receiving the practical support of a united profession we trust it will meet with similar success.

Three States in America, viz., California, Illinois, and New Jersey, already have statutory licence or registration, and that its general working is satisfactory is evidenced by the manner in which leading practitioners have expressed themselves with regard to it; the general opinion being that the public is benefited by the rising standard of professional training and technical knowledge, and that the proper practice of the architectural profession is just as essential to the public welfare and safety as that of any other profession.

Coming nearer home, let us consider what has been done here during the year.

It will be within the recollection of all that in April last the *Builder*, with a certain amount of success, secured a plebiscite on the question of registration, sending out some 5,500 stamped postcards for replies to definite questions. According to the first announcement, 2,484 were returned, showing that half the practising architects in the kingdom were either too apathetic or too uncertain about their own convictions to write one word on a stamped postcard; some qualified their replies; but the net result was that 2,113 direct votes were recorded in favour of registration, against 264 direct negatives, almost exactly eight to one in its favour. Subsequently ninety-nine further replies were received, divided again in about the same proportion, and this practically agrees with the result of a similar plebiscite instituted by your Council some six years ago.

In their attempt to secure the opinion of the profession the proprietors of the *Builder* sent out with the postcards 5,500 free copies containing a leading article with quotations from our Bill as last printed, with comments thereon.

With your permission I should like to consider this article in detail; firstly, because it contained arguments for and against the Registration Bill to guide the reader in the exercise of his vote; and, secondly, because the article with its quotation from the speech of Mr. E. T. Hall represented very fairly and fully the expressed opinions of all opponents of the measure with whom I have spoken, and was evidently intended to demonstrate the superiority of the policy advocated by the Institute. Therefore, in meeting this presentation of the subject (which I think was stated as impartially as we could reasonably expect from one whose general conclusions proved clearly that he was not in sympathy with either the Bill or its promoters) we may assume that we are dealing with some of the strongest points of our opponents.

Firstly, let us note the writer did not advance a single argument against the central principle of the Bill; but he made one very significant admission when he said—

"We recognise that while the reasons in favour of the measure are mainly practical ones the objections to it are mainly objections of sentiment."

And referring to the Clause which reads as follows:—

"An applicant for admission after the passing of this Act must not be less than twenty-one years of age, and must, except in cases hereinbefore and hereinafter mentioned, have served as apprentice for not less than three years with a registered practitioner, or practitioners, and have passed such examination or examinations as the General Council shall authorise."

the writer says:—

"That is the best provision in the Bill, and could have nothing but a good effect."

But that is our Bill; that is the principle for which we are fighting; every other word, every other line contained in the Bill is but subsidiary to the carrying out of that principle, and if the effect of its universal adoption could be nothing but good, I ask why it is so persistently opposed by those who profess to have the welfare of architecture so much at heart—by the very select band of architects which the leader-writer of the *Builder*, in a subsequent article, ventures to call the makers of English architecture of to-day?

Following the train of thought induced by a careful reading of his adverse arguments, we can readily recognise two of the sentimental objections both he and other opponents have to the measure; the first being that under its provisions certain powers and privileges would be handed over to the suggested General Council, which he and they think ought to be exclusively vested in the Council of the Royal Institute of British Architects; and the second, that Parliament, following its usual procedure with regard to the creation of monopolies, would protect the interests of all those persons who, though not possessing the usually recognised qualifications, shall be at the time deriving an income from the practice of some of the lower forms of work usually performed by an architect, with the result that in any Registration Bill which it is possible to pass through the House of Commons conditions would be imposed compelling recognition of the right of such persons to have their names registered in the same list with duly qualified architects, and thus lowering the prestige and status of the profession. In support of the position thus taken up he quotes Mr. Edwin T. Hall, Chairman of the Registration Committee of the Royal Institute of British Architects, who in a speech to that Committee said:—

"The object was to collect into the Royal Institute of British Architects all qualified architects, and then to apply to Parliament to give them a legal diploma and legal titles. When this had been brought about it was decided, and it was recommended, that in future admission should only be by a compulsory training upon lines to be settled by the Institute and by compulsory examinations. When this was done with all the accompanying publicity which of necessity would arise from it it was felt that those who were outside, the unqualified men, might be left alone; people might go to them just as they now go to medical quacks, but in no other sense would they be in the course of a few years a factor that need be taken into account. The advantages of this scheme were generally felt to be that instead of giving titles to unqualified men, and so to that extent lowering the immediate prestige and status of the profession for a time, they could proceed at once on an upward course."

The writer of the article considered this "a very reasonable and sensible position, and worth the serious consideration of the profession."

We may fairly assume that Mr. Hall's remarks may be taken as the concentrated essence of the opinions of all his supporters on the Committee, opinions arrived at after serious discussion, and that it was possible after any kind of discussion to arrive at and deliberately express such opinions only proves how by continually and doggedly looking at a subject from one point of view our mental vision may become contracted to such an extent that the perfectly obvious from other points is unseen and unrecognised. Of course, this may apply equally to ourselves.

But let us give the statement the consideration the writer suggests it deserves. "The object was to collect into the Institute all qualified architects." This implies, of course, that the Institute is the proper body to be entrusted with the solution of this serious problem, and I am sure all our sympathies would run in that direction if only the Institute would rise to the occasion and adopt some practical scheme of compulsory training and examinations *for all*.

Well, the object is to collect into the Institute all qualified architects, but how is it proposed to attain that object? We may assume that, at a moderate estimate, there are at least 3,500 practising architects in the kingdom who are not direct members of the Institute, the majority not being members of any society; and of this number, we may safely estimate, at least 500 possess qualifications and social status equal to those of the average fellow, many of them being men of long and honourable standing in the profession; and until quite recently such men had the opportunity of submitting themselves as candidates for the Fellowship Class, and after satisfying the Council they might (subject to the will of the junior members) have been duly elected members, with all the prestige and privileges of that class; but apparently these privileges were not a sufficient inducement—at any rate, the fact remains they have not joined, nor can they now join as Fellows. But the Institute has a broad-minded desire to admit all *bonâ-fide* architects within its communion. Yet, where the Fellowship Class proved an insufficient inducement they are to be collected into the Institute by being cordially invited to join a third-class rank—mere hangers-on, paying smaller fees, and having fewer privileges than the junior class. Because they did not take timely warning and rush in before the gates were closed they must henceforth be content to occupy a lowly position where they can be patronised by their juniors, and in many cases by their assistants. Is it possible to imagine a more absurd proposition? No self-respecting man could possibly join under such conditions unless he were compelled by statute, and as this is not proposed he will simply continue on his present lines, either as a respected member of some other society or as an unattached member of his profession.

So we may fairly conclude that as this large collection is going to be made *before* applying to Parliament for legal diploma and titles Parliament will not be troubled in the near future.

But let us for the moment assume that it is possible to collect all qualified architects under such conditions, and that subsequently the Institute shall be successful in its application to Parliament. What would then be the position? Future admission would only be by compulsory training and examinations, upon lines to be settled by the Institute. This we quite agree with, and the question naturally occurs to one—Why, if such training and tests are necessary to protect the status of the Institute and its members, they would not be equally beneficial if applied to the profession as a whole? One of the stock arguments of our opponents is that compulsory training and examinations will tend to stereotype art and kill individuality. But if these are essential parts of the policy of a body which places art before all other considerations how can the Council of that body argue with any degree of consistency that such principles when promoted by another body would be productive of evil?

Then we are told that "all those outside, the unqualified men, may be left alone." The idea being that few people would resort to them in future. Does not such an expression of opinion prove decisively that the gentleman who had the matter under consideration had not grasped, even in an elementary

Digitized by Google

manner, the conditions which many provincial architects have to face and about which they are complaining?

Even in a part of my own district it will be safe to assume that two-thirds of the buildings erected have been carried out without the intervention of a recognised architect. In one year alone, as arbitrator appointed by the Court, I had to deal with three distinct cases, the aggregate costs of the buildings being 2,100*l.*, where the plans and specifications had been prepared by writers in H.M. Dockyard, and although in each case the building owner suffered pecuniary loss, such warnings were disregarded by the public, and the same conditions continue unabated.

I recognise, of course, that difficulties would occur in dealing with such persons under our Bill as drafted, but not, I am sure, to the same extent. The concluding statement contained in the quotation from Mr. Hall's speech is:—

"The advantages of this scheme were generally felt to be that instead of giving titles to unqualified men, and so to that extent lowering the immediate prestige and status of the profession for a time, they could proceed at once on an upward course."

How is it possible to proceed at once on an upward course when it is proposed to leave unchecked the large army of parasites which is eating its way into our legitimate practice and compelling well-trained and qualified men who must practice to keep the wolf from the door, to drop their dignity, slip into the arena and fight that army on its own terms, accepting the reduced fees and degrading conditions now frequently imposed both by public bodies and private clients? What cares such an army about "the accompanying publicity which would of necessity arise" from the Institute's action? The only way to check its growth and prevent further aggression is by imposing statutory tests of qualification.

With regard to the sentimental objection of giving titles to the present unqualified men, what practical difference can it make to the position? Such men now assume the titles, and they are recognised and resorted to by the building public, and are at the same time included with R.A.'s, F.R.I.B.A.'s, and A.R.I.B.A.'s in the various professional lists and directories; in fact, it is the objectionable persons who generally figure most prominently in such lists, and whose names are also found in other directories and lists used by the public but tabooed by the profession. One case I know of where in a well-known and professionally recognised directory arranged in districts and in alphabetical order the first name in a certain place is that of a man who combines the practice of architecture with his business as a dealer in second-hand furniture; he occupies a double-fronted shop, the windows being filled with odds and ends of old furniture, and prominently on the centre of the glass, in china letters, I am able to read So-and-So, Architect and Surveyor. What can we possibly have worse than this in the immediate future, even under a thorough-going Registration Bill? Were such a Bill to pass to-morrow then the conditions existing to-day would be the very worst, for it is my honest conviction that not one in ten of these objectionable persons would apply for Registration. Thus the first list published under such an Act would be a very considerable improvement upon the lists now existing, and thenceforward further improvement would be effected gradually and continuously as a result of the removal of undesirables by the steady but persistent hand of time; compulsory tests preventing their further development.

Let me now summarise the arguments: we may then consider from a practical point of view how our position is affected by these later developments.

Firstly. Considering the Registration Bill, we are told with regard to the suggested composition of the General Council, "The principle of selection is very fair, and there is nothing to criticise in it."

Secondly. The clause dealing with compulsory training and examination of future candidates for admission to the ranks of the profession (and this I submit is the soul of the Bill) is pronounced to be "The best provision in the Bill, and could have nothing but a good effect."

Thirdly. No arguments were advanced against the general principles of the Bill, but only against some of its details, and these, I am sure, we are willing to reconsider if our central principle is accepted; much was made of suggested difficulties in its administration in the event (impossible according to the writer's prediction) of it becoming law.

Otherwise, we were told, "the reasons in favour of the measure are mainly practical ones, while the objections are mainly objections of sentiment."

With regard to the alternative suggested by the Registration Committee of the Royal Institute of British Architects, I would say it is based upon the assumption that it is not only possible, but extremely probable, that all qualified architects now outside the Institute will within one year join that body—join under conditions which imply that as undesirables they are as a class to be allowed to die out, and that they voluntarily acquiesce in this recognition of their inferiority, and are therefore willing and anxious to take advantage of the Institute's gracious permission allowing them to practice for the time being as members of a lower grade upon the distinct understanding that they shall have no effective voice in its management. When I remember that some of the most respected members of the profession do not at present belong to any professional organisation it seems incredible that there is now in existence a body of gentlemen whose sense of humour is so undeveloped as to be unable to realise the ludicrous nature of such a proposition.

As their further propositions are contingent upon the realisation of their wishes in regard to this I will not add to the remarks previously made in reference to them.

The present position therefore may be stated as follows:—The leading article we have been considering (with its quotations) was submitted to the readers of the *Builder* as some sort of guide to enable them to arrive at a decision upon the subject before voting. The result of the plebiscite was a vote of eight to one in favour of registration, one peculiar feature being that, notwithstanding the Council of the Institute's strenuous opposition to our measure, we find that the total number of negative votes received (although many were from non-Institute men) represent only about one-eighth of the Institute's membership. Under such circumstances one is apt to wonder whether the policy recommended for adoption by the Registration Committee of the Institute is one with which the general body of its own members is in sympathy.

In a letter to the *Builder* our Secretary, Mr. Butler, pointed out that a plebiscite had been taken both by the Society of Architects and the *Builder*, yielding very similar results, and suggested that the Council of the Royal Institute of British Architects should now organise one, not only of its own members, but of the profession generally, and subsequently act in accordance with the results obtained. By following this course I venture to say the Institute would practically and satisfactorily justify its claim to speak for the whole profession—a claim all of us would be glad to see amply justified. Any assistance we could render would be willingly placed at its service, as we are not only willing but anxious that this subject, which is of such vast importance to all practising architects, should be dealt with in a fair, just, and comprehensive manner by the senior body, for, after all is said, we only wish it to carry its own policy to a logical conclusion. Logic hitherto has not been a dominating factor in the framing of its policy; pure reasoning has had to contend at a great disadvantage with such incidentals as usage, sentiment, tradition, and, strongest of all, inertia. I submit that the advocates of the Registration Bill have the best and strongest arguments behind them, always stated fairly, honestly, and consistently, and should the Royal Institute of British Architects take advantage of its present great opportunities and endeavour to meet in an adequate manner the general wishes it will receive the practical support of a united profession, and incidentally add very materially to its own prestige and position."

Mr. F. Eedle, in moving a vote of thanks to the President for his address, said Mr. Bond had dealt very ably with the question of registration. He congratulated the Society upon its excellent position.

Mr. Ellis Marsland, who seconded, said he congratulated the Society upon the fact that soon they would be able to carry on their work with more decorum and with greater efficiency; but he would urge members of the Council not to hold their hand and be content with the new premises as they exist now, but to proceed at once with the erection of the proposed hall. There was no objection to a society like the Society of Architects being in debt to an extent, because there was always something to fight for and aim at, and with their subscription roll they could launch out and build the hall. The President's remarks as to registration were excellent. All things came to those who knew how to wait. It was curious to think of the attitude of the Institute towards the question in years gone by, when one saw that every year brought them nearer to the views of the Society, and he believed that in a short time they would adopt the views of the Society in their entirety—not perhaps the Society's Bill, but the principles involved in it. The differences between the two bodies really seemed to be absorbed. As to the wish of the Institute to get all qualified architects into its ranks before appealing to Parliament, the question was, who did they recognise as qualified architects? Who was to determine who were qualified to enter into what he would call a third-rate order of the Institute—men who were perhaps in excellent practice now, and with assistants in their offices who were Associates of the Institute? If these men were to join this third-rate order they would be underneath their own assistants. The position was absurd.

Mr. E. C. P. Monson said it was all very well for some well-known men of the Institute to say they did not want registration—they were well provided for. What was wanted was for the younger members of the Institute to take matters into their own hands and then they would be able to have what they wanted. It was a ridiculous position that builders, undertakers, auctioneers, furniture sellers, and others should be able to call themselves architects.

Mr. C. H. Mead, Hon. Librarian, said it would be possible to do more for the library of the Society when they had their new premises.

Mr. David Morgan, speaking as a provincial architect, said he thought that men in the provinces were looking more and more to the Society, especially the young men, and it would be well to encourage young men to compete for the travelling studentships.

Mr. G. A. Birkenhead having spoken, and the vote of thanks having been heartily agreed to,

The President, in reply, said he was sure that registration was an absolute necessity for the profession, from whatever point of view they looked at it. Practically a third of the work going about now was schemed for and engineered in all directions to get it out of the hands of responsible architects. There was no *esprit de corps*, and every man appeared to be thinking for himself, and so long as that state of things continued they would never be able to raise the status of the profession, to do which they must

Digitized by Google

have some scheme of compulsory examination for everyone to pass before they entered the profession. The Institute recognised this state of things in regard to itself, but they wanted that body to recognise it in regard to the profession generally; anything that was good for the Institute's own members must be good for the profession. He could not understand the inconsistency of the leaders of the profession at the present time. It was good to have a scheme of compulsory training and examination for all persons who desired to join them, but not, so it appeared, good to have that for the profession generally. That seemed to be absurd, and the only reason he could give was that the leaders were men with a great deal of work which it was impossible for undesirable members to scheme them out of; they were in a perfectly safe position; they did not appear anxious to stand well in the eyes of the general practitioner, nor did they seem to care how he fared, especially in the provinces, where anybody who could use a T-square and set-square and put a few lines on paper could call himself an architect and get recognised as an architect. It was no use getting all the qualified men into the Institute if the unqualified men were left to multiply outside, for the same state of things would continue unless something was done to prevent future unqualified men calling themselves architects. Unless this were done, anything else the Institute could do for the good of the profession would be futile.

The meeting then terminated.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY:

PRESIDENT'S ADDRESS.

THE following is the most important portion of the address delivered by the President, Mr. Robinson, at the opening meeting on the 11th, the general proceedings at which are briefly reported in another column:—

"The Town Planning Bill is still before Parliament and is receiving the usual buffeting about which invariably falls to the lot of controversial matters or legislation introducing new principles and ideas.

It is to be hoped, however, that the Bill will not be sacrificed to meet the exigencies of the political situation, because, whatever opinions there may be upon the methods of procedure and minor details, there is no doubt that the vital principle is good, and we, as architects, ought certainly to endorse it. Speaking on this matter last year I suggested that the local Advisory Committees proposed to be formed in connexion with town planning schemes might be useful not only in connexion with the immediate object in view, but that the scope of their work might well be extended to watching over the artistic amenities and evolution of our towns and cities in other directions.

This idea has taken a concrete form in New York, where, at the instance of the late President, Mr. Roosevelt (following a suggestion made by the American Institute of Architects of Washington), a Council of Fine Arts has been created, and directions have been issued that for the future, 'before any plans are formulated for Public buildings or grounds or for the location or erection of any statue,' the heads of executive departments, bureaus, and commissions must submit the matter to the Fine Arts Council and follow their advice, 'unless for good and sufficient reasons the President directs otherwise.' We have in such an action as this evidence, not only of the enterprise of our brethren across the seas, but of their growing appreciation of architectural art, and it is an example that we might copy with advantage.

Leeds, like many other cities, has grown in a haphazard fashion without any definite plan of development, and, as a result, we are suffering in all directions at the present day from this lack of foresight. We have dog-legged streets wandering about in an apparently aimless fashion and leading to nowhere in particular. We have our public buildings scattered about in all directions and cramped up on ill-considered sites. Our library and art-gallery in a back street and our latest acquisition, the statue of Queen Victoria is stranded on its pedestal in a desert of cobble pavement without any relation or connection with its surroundings. All this is due to the lack of a properly thought out comprehensive scheme in the beginning.

Civic art has even a commercial value quite apart from the influence it may have on the lives of the citizens. This fact is usually lost sight of by the man who is absorbed in business pursuits; he fails to realise that it pays to have beautiful streets and beautiful cities, but such is undoubtedly the case, and if Leeds is to become the shopping centre of the North, which is the ambition of our tradespeople, it is well that they should bear this in mind and do all in their power to render it attractive.

Then, again, had our cities been developed on town planning lines there would have been other and more tangible results which would appeal more directly to the average ratepayer. Enormous sums of money would have been saved which have been spent in street improvements and in undoing what has been done whilst profits might have been made from the acquisition of undeveloped land. In several German cities no rates are levied, because long ago they foresaw the direction of the growth of the suburbs, acquired land for new thoroughfares and bought cheap land, the rent of which now pays for the public services. If we were able to start *de novo* with the assistance of a Town Planning Bill and the advice of a Committee such as has been suggested, we might produce a very different Leeds from that which exists to-day, but our efforts are perforce restricted to making improvements as opportunities arise. Much good work has already been done in this direction. The centre of the city has undergone a considerable transformation of late years, and at the present time a great area of insanitary buildings is being demolished and the district remodelled under the guidance of one of our members, Councillor G. F. Bowman, who is Chairman of the Development Committee.

The work executed by our students shows a distinct advance year by year not only in draughtsmanship and grasp of constructive principles, but it shows evidence of independent thought, new ideas, and, above all, ambition. The future of our art is in the hands of youth, and youth without ambition is an empty vessel; it is therefore encouraging to see these signs of new developments and the setting up of new ideals. Whilst we must recognise that we cannot cut ourselves entirely adrift from tradition, that the study of old work must be our starting point, yet we must also remember that it is only a means to an end and not the end itself. Raking up the dry bones of the past will never produce a living structure, but we may draw upon the past so far as it will help us to solve the problems of the present, and enable us to devote our strength to scaling new heights of achievement.

The desire for distinction of some kind tempts one at times to leave the beaten paths and to enter on experiments in new and unfamiliar methods. Such a course demands courage, and inevitably leads to many risks and disappointments; but its tendency must be good, in that it implies a desire for progress; and it is possible that this spirit which permeates the rising generation of architects, combined with the introduction of modern conditions and methods of construction which demand something outside the traditional forms of expression, may be the means of carrying forward our art in a manner comparable in some degree with the most active periods of architectural evolution."

THE QUANTITY SURVEYORS' ASSOCIATION:

QUANTITIES AND THE QUANTITY SURVEYOR.

AN ordinary general meeting of the Quantity Surveyors' Association was held on Wednesday last week in Caxton Hall, Westminster, S.W., Mr. H. G. A. Chidgey, President, in the chair, when Mr. William Woodward, F.R.I.B.A., read a paper entitled "Quantities and the Quantity Surveyor from an Architect's Point of View."

The lecturer first endorsed the statement in a paper* by Mr. H. J. Leaning, read before the Surveyors' Institution, *i.e.* that "there are a number of powerful reasons why the architect should not supply quantities for his own works, perhaps the strongest being that it tends to subvert that impartial treatment of the building owner and the contractor which should be the architect's leading principle, and which (as experience shows) is often seriously impaired by his assuming the position of quantity surveyor," and he added to that the strong objection there was to architects employing men in their own offices at a salary to take out the quantities for works in hand. If men made up their minds to indulge in the joint practice of "architects and quantity surveyors," they should not be afraid to make the fact clear to clients and to contractors.

One subject in Mr. Leaning's paper opened the door to an important alteration in the method of taking out quantities, and if followed up would have led to the practical extinction of many quantity surveyors, and to the levelling down of the profession generally. The subject referred to was the "standardisation" of bills of quantities. Personally he could conceive nothing which could be more injurious to the profession—nothing more calculated to lower the educational status of surveyors than any such system.

The first question which naturally arose in considering the subject was, what should be the form of education of the quantity surveyor? And that was, he thought, answered by the examinations which constituted such an important factor in the really good work done by the Surveyors' Institution. This examination should, no doubt, be followed by pupilage in the office of a qualified surveyor and a course of practical work in the estimating department of a competing contractor. Prime cost, pricing of bills, measurings of variations, and the general knowledge gained in a builder's "yard" would, he thought, be found to be invaluable to the surveyor in the future practice of his profession.

They must not shut their eyes to the fact that a quantity surveyor occupied a very important position of trust. The architect relied upon him to include in his bills neither more nor less than was proper and fair; the builder relied upon him to do the same thing; and in the measurement and valuation of variations on the contract, the surveyor must not deviate from the obligations and duty which were cast upon him to see that the client was paying for nothing that he had not got, and that the builder had provided nothing that he had not been paid for. The architect, who knew perhaps very little of what had been taken in the "bills," looked to the surveyor to see that every omission had been accounted for, and the builder that every addition had found its place in the final accounts. Nobody would dream of going back to the old days of Smirke and Tite, when each builder tendering went to the architect's office, and each took out his own quantities then and there; and he did not know whether the old practice of one surveyor being appointed by the architect and one by the several builders tendering now prevailed, but there could be little doubt that surveyors as well as architects must keep

*"The Assimilation of the Practice of Quantity Surveyors." See the *Builder* for March 3, 1906.

themselves right up-to-date. The quantity surveyor's knowledge had to keep pace with the times in order to prepare a proper "bill" for the purpose of a modern tender. In some cases difficulties were met by the insertion in the bills of large provisional sums for specialists in this, that, or the other trade, and these provisional amounts formed at times a very large percentage of the contract sum, and the specialist's work a very large proportion of that undertaken by the general contractor. The longer he lived the more he was convinced that the less there was in a job of the "sub-contractors" and "specialists" the better it was for the job generally, and for the contractor in particular.

There was another matter connected with being "up-to-date," and that was the shortening of the bills. Clients now want their buildings erected and fit for occupation in about the same time as used to be expended in making the drawings and writing the specification.

Another question arose as to methods of preparing tenders in lieu of the complete bill before the tender was accepted, and the system adopted, he believed, to a large extent in Scotland, was to obtain tenders on a schedule of prices, the actual work being measured thereafter, on the job, and priced in accordance with the schedule. That no doubt was an expeditious mode of obtaining tenders, but he did not think it would work so well in London, where architects and clients want to know exactly what a job was going to cost before the tender was accepted. By this method, he believed, the custom was to prepare a blank bill of quantities representing as near as possible what work would be required in the particular job, and the builder put his prices to each item, the main absent part being the quantity of the work required. Then there was the method of obtaining tenders adopted by certain Government departments, viz., to issue schedules of works required, with prices attached, the builder tendering on so much percentage above or below the prices affixed by the Department.

As to the question whether or not quantities should be made part of the contract, there had never been a doubt in his mind as to the right system, and that was to make the quantities in every case part of the contract. He should not desire that through a mere clerical error his client obtained something for nothing, or that a builder succeeded in being paid for materials and labour which he never executed, simply because a clerk put down tons instead of hundredweights, or brought his brickwork into rods reduced before he had turned his 9-in. work into 14-in. work. It had been said by some surveyors quite qualified to judge that if the system he had advocated were universally adopted it would lead to slovenliness on the part of surveyors, but he did not think so. He believed that the respectable surveyor would be quite as careful in his work whether the quantities were or were not to be made part of the contract.

As to the legal responsibility of the quantity surveyor, he was not sure that in the case of an error on the surveyor's part either the builder or the client could sustain an action-at-law to recover the value of the error. He remembered that a case was decided many years ago as to the responsibility for payment of the quantity surveyor's fees, and that directly the contract was signed the responsibility for the fees shifted from the client to the contractor. On the point, however, of liability for payment for errors, he assumed that unless negligence could be proved against the surveyor it would be difficult to recover damages. And he thought this should be so; the idea of getting out of a surveyor, say, 500*l.* for an error on a job for which his total commission might be 50*l.* did not commend itself to him. If the surveyor had overstated his quantities the builder must give way, and if understated the client must give way; and of course the quantities being made part of the contract removed this question from practical consideration. One used to hear years ago of quantity surveyors paying sums of money to make good their errors, but there was always a certain vagueness about these payments, and he had not heard of any lately. He understood that in London County Council works, and perhaps in other Departments, quantity surveyors were made liable for errors, but he could not understand them accepting this liability unless in the case of real negligence, and he did not think the system should be adopted. Architects were only liable in the case of negligence, and he did not see why quantity surveyors should not be placed in the same category.

Another matter of interest to quantity surveyors was obtaining tenders without the employment of quantity surveyors. No doubt in small matters of alterations to a building a fully detailed bill of quantities was too elaborate a process, and drawings and specifications were quite sufficient to enable a proper estimate to be obtained, but he was afraid that in larger works the practice of asking builders to take out their own quantities was increasing. Some few years ago it was, he thought, agreed by the Master Builders' Association that they would not tender for works (except, he presumed, small and trifling works) unless the quantities were taken out, but any such agreement should be strictly adhered to by the whole of the Master Builders' Association, and whether this had been so adhered to or not he did not know, but he was afraid there had been strayers from the fold.

A large and increasing amount of work was being done by the various stores, and by large furnishing, decorative, and building firms, without the employment of independent architects and surveyors. These firms did not say so perhaps in so many words, but they pretty clearly indicated that by employing them direct all the architect's and surveyor's fees would be saved, and everything go along as happily as could be. He should venture the assertion that the innocent clients paid indirectly more than double or treble the amount of architect's and surveyor's fees.

Then, auctioneers were gradually making excursions into the domains of architects and surveyors. Most certainly some stop should be put upon these encroaching proclivities, and so far as architects were concerned, he and other members of the Royal Institute of British Architects intend to direct attention to the subject at an early date. It might seem undignified to intervene in such matters, but the point was, were they to sit quietly by and see their legitimate work taken away from them by illegitimate means?

He thought that where an architect employed the same quantity surveyor for all his work an abstract specification prepared by the architect was sufficient, and in that case the fully detailed specification should be written by the quantity surveyor, so that the specification and bills of quantities were in thorough agreement. But if there was a surveyor employed who was not well acquainted with the architect's particular style of work, then no doubt the detailed specification must be handed to the surveyor before he took out the quantities.

As to the charges of quantity surveyors, it was a subject for keen regret that surveyors had not kept up the standard of their professional charges in the same way as—on the whole—architects had. One heard now of surveyors undertaking to do work at a perfectly ridiculous rate of pay, particularly as regarded work for public bodies. Of course, if the case was one of a large asylum or of buildings of great area, with a fair amount of repetition, a comparatively small rate of percentage was understandable, but these absurd rates were not confined to these public buildings, and the Quantity Surveyors' Association and all kindred institutions should seriously consider whether some sort of agreement could not be arranged by which all duly qualified surveyors should adopt, and stick to, some recognised general scale of charges.

He thought the line should be drawn by quantity surveyors in sending out letters to clients about to build. He supposed there could be no real objection, if a surveyor heard of a job going, to his soliciting the work of the architect, but in a letter recently addressed to some clients of his by a firm of quantity surveyors offering their services, after stating that they did not know who the architect was, but that it was quite likely he was a gentleman of eminence with whom they were already acquainted, they used these words, viz.:—"It is quite usual nowadays for public authorities and for large firms to employ independent quantity surveyors instead of leaving the appointment in the hands of the architect, and we hope that we may be favoured with your confidence."

Now, this was a cut at the architect as well as at the surveyor who had been usually employed by the architect, and he thought the letter travelled beyond what one would reasonably consider as legitimate endeavour to get work.

Mr. S. Chatfeild Clarke, who proposed a vote of thanks to the lecturer, said the Association were endeavouring to get uniformity of measurement all over the country. He agreed with Mr. Woodward's theory about sub-contractors and specialists; they were always a nuisance on a job, and the only way to bring them into line at all was to get tenders for all sub-contracting items and pit two or three of them against each other, and one would then get a much lower and fairer price, and the sub-contractors were much more amenable to reason. He had found schedules very useful where a builder was in a great hurry for a man to put the basement in. If one wanted the best work one got it more certainly on a schedule than in competition and on quantities. As to quantities forming part of the contract, the only argument he had ever heard against that that seemed very valid was that if they formed part of the contract the quantity surveyors were relieved of their liabilities to a certain extent, and therefore the architect or the client would want further to cut down the already small fees. It was a matter which the builders had very much in their own hands. If builders in London and the south were sufficiently well organised they would no doubt be able to do what builders elsewhere did, *i.e.*, insist that the quantities form part of the contract. As to the legal position of the quantity surveyor, it appeared that unless he was grossly negligent he was liable to nobody. As to obtaining tenders for quantities, the Association had just had an interview with master builders from all over the country, and they passed some good resolutions which, they trusted, would have a good result. They were trying to do what they could to stop the practice of tendering for quantities. As to building firms and others cutting into the architect's and surveyor's professions, that was a matter that the members of the Institute of Architects would generally be able to stop by never asking those firms to tender for their works. He was in sympathy with Mr. Woodward's views about specifications, and he thought there was nothing nicer, if they knew an architect's work, than to have a few sheets of notes given to them and to work on them. With a long specification one could spend half a day looking through it for every little item.

Mr. S. A. Stanger seconded the vote of thanks, and said he did not think that Mr. Woodward would speak quite so much against standardisation if he realised what a help it was to a builder to have the quantities so taken up that he could readily and rapidly grasp the meaning. It seemed unfortunate if different surveyors should use different wording to express pretty much the same thing. He felt it was of the greatest importance for architects as well as quantity

Digitized by Google

surveyors to have as thorough a knowledge as possible of the legal position between the builder and the client. And it was of the greatest importance that quantity surveyors should know a lot about prices. He agreed with what had been said about specialists, but he did not know what to suggest in order to prevent them from coming in. And specialists got hold of the architect before the builder had secured the job. Judging from what Mr. Woodward had said, he felt convinced that architects would be only too pleased if the system of obtaining tenders without quantity surveyors were put an end to. One custom not alluded to by Mr. Woodward was that of the builders working on percentage of prime cost, and he thought that was a system that had scarcely anything to recommend it.

Mr. A. E. Harris said, as to labours on stone, he believed it was the custom now for builders not to price in those labours if they were taken. As to tendering under schedule of prices without quantities, it seemed to be absolutely necessary to ascertain, especially in public jobs, the cost beforehand, and he did not think that could be done unless the quantities were properly taken out and priced in by the builder. Another disadvantage of tendering under schedule of prices was that one did not get a fair basis for comparing the total amount of the different builders tendering, and it was difficult to settle which builder was the most favourable to the client. And in a schedule it was impossible to mention every item, and therefore at the end, in clearing up, one must leave open many a loophole for settling contentious business. As to auctioneers usurping the functions of architects and surveyors, he thought surveyors and architects ought to take some strong step to protect their interests.

Mr. H. H. Bartlett said that engineers had some very crude ideas in regard to quantities, and nobody hated going into detail more than engineers; architects were very much better. As to taking out labours, in many cases where he got mason's bills with the labour taken out it was not priced, and that, he thought, was because the estimators did not know how to price it. But really the only way of arriving at a proper value of cube stone was to have the labours taken out and priced. One matter coming to the front now was reinforced concrete, about which quantity surveyors would probably have to educate themselves. He should very much like to see architects keep this work in their own hands, and he thought it was a pity for it to pass into the hands of the engineers or specialists. If architects would study the matter they would retain it in their hands, and could very likely beautify and have handsomer erections than we should get from specialists, who did not think at all of art, but simply of the least amount of material and the least cost in which they could carry out the construction. He agreed as to the undesirableness of having so many sub-contractors, and he thought that quantity surveyors might to some extent stop the practice if they would suggest to the architect that they could take out the quantities required for those jobs just as well as the man called in to do it. Builders often had little authority, as specialists were appointed by the architect to come in and do their work.

Mr. W. A. Haskins said he thought the word "standardisation" was an unfortunate one, and he agreed that uniformity of measurement was a little more reasonable, but it was a difficult thing to bring into practice. As to responsibility some errors should be classed as negligence, and surveyors should accept a penalty imposed upon them for such errors. As to provisional sums, architects would benefit as much as anybody by the limitation of those speculative items.

Mr. W. E. Davis said, as to remuneration, there were these public competitions for prices, and in these competitions it was often a difference of ⅛th per cent. which secured the work. He would ask them what an ⅛th per cent. was on, say, a 10,000*l.* job? Now, how easy it would be, without being honest, without even being slovenly, for the surveyor to make ten times that one-eighth difference in working out the job, so that, if ever a man should be paid a proper wage for proper work, he thought it was the quantity surveyor. With regard to quantities forming part of the contract, Mr. Woodward spoke of "respectable surveyor," and that was the crux of the whole matter. They had also heard about doing without quantities, and here again, he thought, the architects were sometimes responsible. They were anxious to curry favour with their clients and endeavour to get a cheap price. With regard to the provincial architect taking out his own quantities, and charging 2½ per cent. for a most wonderful production, he was afraid there was more in that than met the eye, because he had known so many cases where not only did the surveyor get 2½ per cent., but he remeasured at the finish and got another 2½ per cent. With regard to the sub-contractors, he thought that word was hardly the term that Mr. Bartlett meant. In a good deal of North-country work one got a contractor who took the job, and he did the brickwork and nothing else. He had sometimes had to meet about ten or a dozen different contractors on a job, but then he always made a point of meeting these sub-contractors simply as representatives of the builder.

Mr. Allan Paul and Mr. Assiter having spoken,

The President, in putting the vote of thanks to the meeting, said, as to the charges of quantity surveyors, the question of tendering for quantities was a very different kind of thing to tendering for the supply of labour and materials. It meant this, that if a man who was tendering for quantities put in, as so many men had put in, ridiculously low prices, he could give the work which a client was entitled to expect when he asked for a bill of quantities. Of course, if a client would not pay he could not expect to have the work, but on the other hand, the quantity surveyor ought not to allow himself to tender in the way some had, unfortunately, done. We had an illustration in the public authorities, who were still apt to take advantage of the quantity surveyor. An advertisement was even now current in the official papers for a borough council asking for tenders for quantities for a small public library, and the Honorary Secretary and himself had put their heads together and had, as on previous occasions, sent a protest against this advertising for quantity surveyors to tender for prices. They had not been successful in accomplishing in this particular instance what they had been, fortunately, successful in some—that was to say, in securing a withdrawal of the advertisement. It was a very difficult question to deal with, and the Council of the Association took a very strong view indeed of quantity surveyors' duties in this matter, so strong a view that in a comparatively recent case that came before them, where a quotation made by one of their own members was for such a ridiculous and unjustifiable amount, the Council felt compelled to invite him to remove his name and to be no longer a member. The Society was doing its very best to raise the status of the profession of quantity surveyors. He was sorry that some of their friends still felt called upon to remain outside. Their assistance outside was welcome, but they should be delighted to find them joining the Association. They never could hope to raise the status of the profession and to carry out the suggestions made unless they combined. Architects and others had found it necessary to do so, and they were very strict indeed in carrying out the regulations of their Associations. He failed to see why quantity surveyors should not be equally capable of combining to protect their own interests. Every surveyor of repute ought to be a member of the Society; its influence was daily increasing, and he hoped some day in the not distant future it would be appreciated by all quantity surveyors.

The vote of thanks having been heartily agreed to,

Mr. Woodward replied, and the meeting terminated.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

Extension of the Bureau's Work to the Colonies.

A MEETING was held on November 10 at the Technical Bureau Buildings in regard to the proposal of extending the work of the Bureau to the colonies. Before the business of the meeting was proceeded with letters from the following architects practising in different parts of the world were read respecting the opportunities that such a Bureau would afford them:—

Mr. Arthur H. Reid, F.R.I.B.A. (Hon. Secretary in South Africa to the Royal Institute of British Architects).
Mr. H. H. Coyle, India.
Mr. F. A. Jaffray, Orange River Colony.
Mr. J. S. Ruchwaldy, Singapore.
Mr. W. Huxley, Malay Straits.
Mr. H. Ardeshir, Bombay; and others.

A general discussion of the subject then followed in which the following gentlemen took part:—Messrs. Beeston Hatchard (Egypt), Wynne Roberts (South Africa), and A. T. Babbs (South Africa), giving respectively their views as to the great services that the Bureau would render to architects practising in the colonies, who, it was pointed out, experienced difficulty in obtaining information of the most recent goods, and often had to fall back on that acquired when in the home country, which of necessity was more or less out of date. It was generally ascertained from those present that architects in the colonies were almost invariably in favour of using British-made goods (which were, however, often difficult to obtain), not from a necessarily patriotic point of view, but because the superiority of such goods had established itself without doubt over and over again.

The feeling of the meeting was that branches of the Bureau should be established in the following large centres:—

Australia.—Sydney, Melbourne, Perth.
New Zealand.—Auckland.
Canada.—Montreal, Toronto.
India.—Calcutta, Bombay, Madras.
South Africa.—Cape Town, Johannesburg, Durban.

In each case a Secretary or other person should be appointed who would keep in touch with the Central Bureau in London. Each colonial centre would be kept up to date with all the recent trade catalogues and list of manufacturers in this country, also with all Reports on materials, etc., drawn up by the Bureau.

In the Report to the Bureau Advisory Committee it was suggested that a name should be given to the Bureau implying that its work was extended to the whole British Empire, and not confined, as at present, to this country. Also that at least four architects who have practised in the colonies, but now resident in London, should become co-opted members of the Selection Committee and of any Sub-Committee that may be formed to further the interests of its colonial work.

After a vote of thanks to Mr. Searles-Wood for occupying the chair, and to those gentlemen who had so kindly attended to state their views, the meeting came to an end.

FIRE AT CATFORD.—A fire occurred on the 11th inst. at Catford at the joinery works and stores of Mr. J. Watts, builder, situated between Langley-road and Culverley-road. The outbreak occurred in a building of two floors of 100 ft. in length. Engines were sent from Lewisham, New Cross, Catford, Lee, and other stations, but the property attacked could not be saved, the firemen's efforts being devoted to saving adjoining property. Damage to the extent of 4,000*l.* or 5,000*l.* was done.

Digitized by Google

THE BUILDER

NOVEMBER 20, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 10s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, NOVEMBER 19.

The Architectural Association.—Mr. C. Reginald Enock, F.R.G.S., on "Architecture of the Incas of Peru." 7.30 p.m.

The Institution of Mechanical Engineers.—Mr. Herbert A. Humphrey on "An Internal-Combustion Pump, and other Applications of a New Principle." 8 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. L. Hastie on "A Framed Building." 8 p.m.

SATURDAY, NOVEMBER 20.

Royal Sanitary Institute (Meeting at Nottingham).—Discussion on "The Improvement of City Slums by Housing Reform and Otherwise." To be opened by Alderman T. J. Dabell, Chairman of the Health Committee. 10.30 p.m. Visits in the afternoon.

Junior Institution of Engineers.—Visit to foundation work of the new County Hall of the London County Council, Belvedere-road Lambeth, S.E. 3 p.m.

Institution of Municipal Engineers.—Visit to the Surrey Commercial Dock. Members and students will meet at Deptford-road Station (East London Railway) at eleven o'clock.

MONDAY, NOVEMBER 22.

London Institution.—Mr. Leon Gaster on "Modern Methods of Artificial Illumination." Illustrated. 5 p.m.

Surveyors' Institution.—Mr. W. R. Davidge on "Town Planning Systems." 8 p.m.

TUESDAY, NOVEMBER 23.

Institute of Sanitary Engineers, Ltd. (Students' Lecture).—Mr. G. Trotman on "Sewerage and Drainage." 7 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. VIII. 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Balsey Ricardo on "The Renaissance of Architecture in Italy"—VI. 6 p.m.

WEDNESDAY, NOVEMBER 24.

The Architectural Association.—Conversazione, No. 18, Tufton-street, S.W. 8 p.m.

Royal Society of Arts.—Mr. T. Thorne Baker, F.R.G.S., on "Photolegraphy." 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. P. Manby on "The Hygiene of Byres, Lairs, Cowsheds, Slaughter Houses, etc." 7 p.m.

THURSDAY, NOVEMBER 25.

The Concrete Institute (Royal United Service Institution, Whitehall).—Paper by Mr. R. L. Humphrey, M.Am.Soc.C.E., entitled "Some Points Relating to Reinforced Concrete as Applied in the United States." 8 p.m.

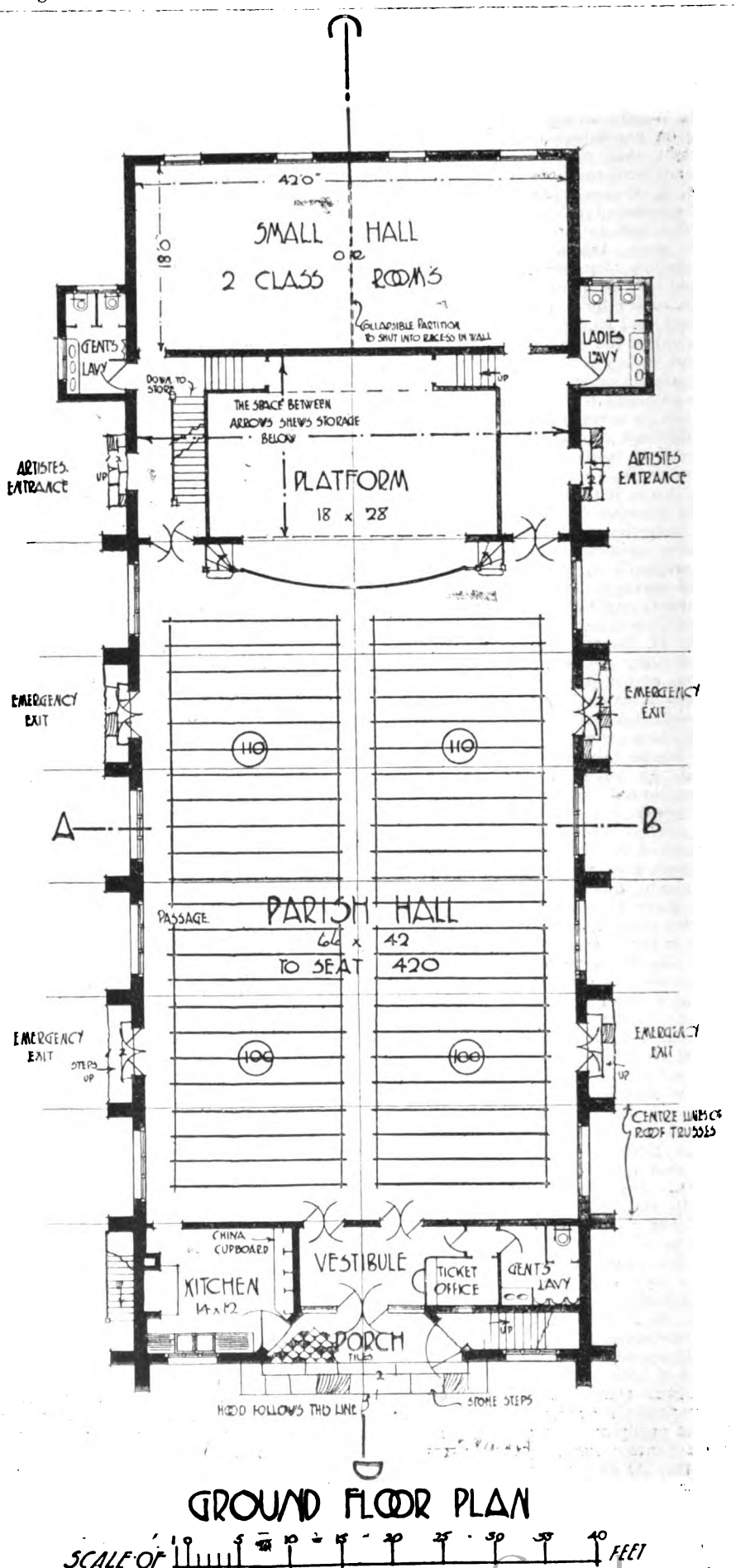
Institution of Electrical Engineers.—Messrs. H. W. Handcock and A. H. Dykes on "The Present Aspects of Electric Lighting." 8 p.m.

Illustrations.

ELTHAM PARISH HALL: PREMIATED DESIGN.

THE chief object aimed at in this design was to arrange the rooms so that they could be used independently and simultaneously. The large room at the back of the stage is provided with a sliding partition to enable it to be used either as one large room for meetings, committees, dances, refreshments, etc., or as two Sunday-school classrooms, or dressing-rooms for entertainments.

Red and brindled bricks and rough cast are used externally, the roof being tiled. Internally a high dado of Fletton bricks is provided round the hall, the remainder of the



GROUND FLOOR PLAN

SCALE OF 10 5 0 10 15 20 25 30 35 40 FEET

Parish Hall, Eltham.

Digitized by Google

walls and the ceilings being plastered. The hall floor is to be boarded for dancing.

Messrs. Moscrop-Young & Glanfield, and Mr. Percy J. Waldram, are the architects.

HULL TRAINING COLLEGE.

THE site consists of 15 acres adjoining a larger site of 34 acres provisionally reserved for the University College buildings.

The Training College site faces Cottingham-road, which runs east and west. The group of buildings have been placed on the site parallel to the road, leaving a large, unobstructed space at rear for playing-fields. This has the advantage of making the blocks readily accessible from the road, and also permits of favourable aspects for the several blocks.

This question of aspect has been carefully considered in the lay-out of the plan, so that the majority of the teaching-rooms face south, as also the refectory and recreation rooms in both hostels.

The dormitory blocks in both hostels point north and south, so that the study bedrooms all face east or west, thus entirely avoiding north bedrooms.

The gymnasium block is placed at the rear on the main axial line of the college, and overlooks the playing-fields.

The principal's house is placed in the south-eastern corner of the site near the Cottingham-road, with south aspect for the best rooms.

The porter's lodge, naturally, overlooks the entrance-gates.

The general ground-floor level is at or about the level of Cottingham-road.

Owing to the nature of the site each block of buildings will be placed on a concrete raft 3 ft. thick, and the residual space between the floor and top of concrete will be available for heating-mains, water-pipes, etc.

The necessity for direct and rapid communication between the several blocks, together wth the proper separation of the sexes, clearly influences the whole of the plan, and it will be seen that the corridors for male and female students respectively do not cross at any point, so that men and women students meet only in the assembly-hall and refectory.

The kitchens and servants' dormitory block, while readily accessible from both sides, is well isolated, and thus secures privacy for the domestic arrangements and prevents odours of cooking from entering the other blocks.

The total cost of the scheme, exclusive of fencing the site and laying out the grounds, works out at 33,350*l.*, based on the prices prescribed by the assessor.

Messrs. Crouch, Butler, & Savage, of Birmingham, are the authors of this design, which was placed first in the competition by the assessor, who spoke of it in very high terms.

NOTES FROM FRANCE.

THE new "Hôtel de la Ligue d'Enseignement," in Rue de Sèvres, on the site of the ancient "Abbaye aux Bois," has just been officially opened. It is a large building entirely built in ferro-concrete, and M. Charles Blondel, Government Architect, has contrived to give it a satisfactory architectural effect. The interior plan and arrangements are very good. The building, including the purchase of the site, has cost 700,000 francs, not a large sum for such a building.

M. Laloux, the eminent architect, was commissioned to carry out the new Hôtel de Ville at Roubaix, now nearly completed. The principal façade includes some fine sculptural decoration, the sculptors being MM. Cordonnier, Léon Fagel, and Boutry. The work of the first-named artist represents the cotton harvest, the arrival of the bales, and the successive transformations of the material. M. Fagel has adorned the frieze of the building with basreliefs representing the weaving and colouring of the made up material. Above the attic a large central arch will be adorned with two figures by M. Boutry symbolising "Vigilance" and "Moderation."

Progress is being made with the new slaughter-houses at Lyons. This colossal work, involving special technical knowledge, was entrusted by the town of Lyons to M. Tony Garnier. The buildings cover an area of 244,000 sq. metres, and will cost at least 14 million francs. They include slaughter-houses, cattle-market for over 15,000 animals, and stabling for over 13,000, a knacker's yard, and a sanitary slaughter-house for examination purposes. Each department has a separate and distinct entrance. About 7 kilometres of sewer discharge into a filter bed outside the premises, near the Rhone. The work was begun towards the end of 1908 and is to be completed towards the end of 1911.

On the site of the Galerie des Machines at Paris the Government intend to erect two palaces on the Champ de Mars, facing the Ecole Militaire. These will be architecturally united by a square which can be temporarily used, when occasion requires, for agricultural shows and industrial competitions. A subterranean gallery will form a direct communication between the two buildings.

The excavations undertaken at Mont Auxois by the Société Archéologique of Semur have brought to light a fine and well-preserved statue in stone, apparently representing Flora.

The death has also to be recorded, at the age of 79, of the decorative sculptor Alfred Darvant, who for many years was the privileged collaborator of Charles Garnier on his buildings. He executed the decorative carving in the auditorium and the foyer of the Opera-house, as well as a good deal of the exterior carved decoration. He executed also the carved work of the Théâtre de la Monnaie at Brussels, that of the restoration of the Roman theatre at Orange, and of the restoration of the Porte St. Denis, the Panthéon, and the Hôtel des Invalides.

M. Anatole Gruyer, who recently died at the age of eighty-five, was an important writer on artistic subjects. He was a member of the Académie des Beaux-Arts, and Curator of the Chantilly Museum. He was successively "Inspecteur des Beaux-Arts," Curator of Paintings at the Louvre, and Inspector of Provincial Museums. He published various essays on Raphael and on the Art of the Italian Renaissance, on the pictures at Chantilly, and had been a contributor to the *Gazette des Beaux-Arts* since its foundation.

The death is announced, at the age of 50, of M. Morin Goustiaux, Government Architect, Chevalier of the Legion of Honour, and a member of the Société Centrale des Architectes. Among his numerous works is the fine Hôtel of the Société d'Assurance, in the Boulevard des Italiens.

The death is announced, at the age of sixty-seven, of Mr. Gustave Vieille, architect, of Besançon, a former pupil of Lequeux and of Laisne. Among his numerous works was the restoration of the celebrated Château of Anet. The death is also announced of three members of the Société Centrale des Architectes—M. Emile Jandelle, aged forty-five; M. Prosper Bulot, aged sixty-one; and M. Léon Lenoir, of Nantes, aged seventy-nine. M. Lenoir was an architect of some note, and a Chevalier of the Legion of Honour.

PUBLIC LIBRARY, ELLESMERE PORT, LIVERPOOL.—The erection of a new library at Ellesmere Port is nearing completion. The design for the building was selected in competition, the successful architects being Messrs. Sproat & Warwick, of Liverpool. All the exterior walls are faced with 2-in. Welsh red pressed bricks, with thick joints, and with Storeton stone dressings. Westmorland green slates cover the roof, and the external joinery work is painted white. The book accommodation in the lending library is for over 8,000 volumes. The contractor is Mr. E. Griffiths.

PICTURE EXHIBITIONS.

McLEAN'S GALLERY.

THE collection of pictures now on view at McLean's Gallery in the Haymarket is one of the best that we have ever seen of the small exhibitions from time to time opened there. It includes, among other things, a splendid portrait head of an old woman, a comparatively early work of Israels, which is worthy of Rembrandt. There is also a remarkable portrait of a lady by Fantin-Latour; a beautiful imaginary figure, "Dawn," by the same artist; and a very fine water-colour of a family of lions by Rosa Bonheur. Admirers of Mauve will be interested in two small pictures which show him in rather a new light—pure landscape, with no sheep in the foreground. Sir L. Alma-Tadema's "Spring Time" is also there, and a good Meissonier, "Highwayman Asleep," which is not well known, as well as other works of considerable value and interest.

SOCIETY OF PORTRAIT PAINTERS.

This Society fills a large wall space at the New Gallery with a somewhat heterogeneous collection of portraits; some which have been exhibited long ago; some which are eccentric and ugly, and some few fine things. Among the latter, Mr. J. T. Shannon's "Mrs. Edward Morris" is a triumph in what may be called the sumptuous order of portrait. Mr. William Orpen exhibits examples of his own characteristic method of painting portraits or portrait groups, painting the whole room with the figure of the sitter forming an incident only in the picture; these pictures are exceedingly clever and original, though they hardly fulfil the highest objects of portrait painting, and there is something else wanting about them which it is difficult to define; but they are not pleasing pictures. Mr. Sargent's sketch of the head of Jefferson, the American actor, is admirably characteristic. Some important portraits by Watts and others have been exhibited before, and apart from these the collection does not strike us a very remarkable one, though there are very clever works here and there. We should gather that there had been some little difficulty in adequately filling the galleries.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loan.—It was agreed to lend Bethnal Green Borough Council 2,750*l.* for street improvement.

New County Hall.—The Establishment Committee reported as follows:—

The Council, on April 14, 1908, sanctioned expenditure not exceeding 3,000*l.* for the preparation of bills of quantities, etc., for the first section of the structure of the new County Hall. The works of constructing the embankment wall and the concrete raft being in hand, we have considered what steps should be taken to invite tenders from surveyors for taking out quantities. The approximate cost of the first section of the building is 300,000*l.*, and for a work of this magnitude we think that tenders should be invited from firms selected from the list of firms with whom the Council has entered into agreements for architectural works. We propose that the rate of remuneration should be fixed by the Council, and that the tenderers should compete upon a time basis. The Council's agreement with the quantity surveyors provides a scale of payment for works up to the value of 70,000*l.*, and the rate fixed for this amount is 1 per cent. For works over 70,000*l.* in value the scale of payment shall be the subject of special arrangement. After careful consideration we have come to the conclusion that the work should be entrusted to two tenderers at the rate of ¾ per cent., divisible in equal proportions. We recommend—

(*a*) That tenders for taking out quantities for the first section of the structure of the new County Hall be invited from selected firms; and that the Establishment Committee be authorised to make a selection.

(*b*) That the tenders be invited on the basis of a period of time for the completion of the work of taking out quantities; and that the remuneration be fixed at ¾ per cent., divisible

Digitized by Google

in equal proportions between the two successful tenderers.

Skating-rinks, etc.—Recommendations of the Theatres and Music-halls Committee relating to the following were agreed to:—

A drawing, submitted by Messrs. C. Heathcote & Sons, showing amended proposals with regard to the gallery staircases at the Bradmore House Skating-rink, proposed to be erected in Queen-street and Great Church-lane, Hammersmith.

Drawings, submitted by Mr. H. E. Richards, showing certain alterations and additions proposed to be made to the Brixton Skating-rink, Tulse-hill and Water-lane.

Drawings, submitted by Mr. W. Hancock, showing a proposal to convert the Golden Bells hotel and restaurant, High-street, Notting Hill Gate., into a cinematograph hall, to be known as the Electric Palace.

Electric Pavilion, Great Windmill-street (Mr. H. Harrington).

Drawings, submitted by Mr. B. Crewe, of the Hammersmith Skating-rink, proposed to be erected in Brook Green-road.

Drawings, submitted by Mr. J. B. Roberts, of the Hammersmith Skating-rink, proposed to be erected in King-street West.

A drawing, submitted by Messrs. Wylson & Long, showing a proposal to instal electric radiators in the pit and stalls at the London Pavilion, Piccadilly-circus.

A specification and drawing, submitted by Messrs. F. Matcham & Co., of the heating and lighting arrangements at the New Grand Hall, proposed to be erected in Camberwell New-road and Church-passage.

A drawing, submitted by Messrs. J. & P. J. Groom, of the Sydenham and Forest-hill Skating-rink, proposed to be erected at No. 6, Silverdale, Sydenham.

Chairman's Annual Address.—The Chairman then delivered an address bearing on the work of the Council for the past year, in the course of which he referred to the extraordinary improvement which has been effected in London since the passing of the Local Government Act of 1888. "The improvement," he said, "is patent to all, though it can only be best appreciated by those who know London as it was twenty years ago. Lord Rosebery's prophecy, made as our first chairman, and to which I referred when taking this chair, has been amply fulfilled, viz., that a population would arise which would recognise that the birth of the London County Council had brought a message of hope and prosperity to the people. London now stands pre-eminent among the cities of the world so far as vital statistics are concerned. No great city has more advanced systems of locomotion; while, on the other hand, no city requires adequate locomotive service more than London. In no period of London history has so vast a stride been made both in the improvement and widening of its main thoroughfares and in the architecture of its buildings as during the past two decades, whilst the spread of its population outwards into the suburbs bids fair to solve finally the difficult problem of overcrowding which so troubled us in our early days. Directly or indirectly, the advent of the Council and its administration of municipal government is responsible for the change which has taken place."

New School.—It was agreed that, subject to the Board of Education approving the finished plans, the tender of Messrs. McCormick & Sons, Ltd.,* amounting to 11,842*l.*, for erecting on the Haverstock-hill site (St. Pancras, W.) a "higher" school for the accommodation of 480 children, be accepted.

The recommendation was carried after the defeat of a motion to refer back in order that the Committee should consider as to whether a condition could be imposed to employ only *bonâ fide* London workmen.

Penalty Clauses.—In the course of a debate later on, with reference to preference for London men, the question of the validity of penalty clauses was raised.

The Hon. W. R. Peel said it had been declared that penalty clauses were of no value. What was meant was that such clauses were not in the nature of "damages," and were therefore not enforceable in the courts. The difficulty was to show damage done to the Council.

Mr. Hunter instanced cases where the Council had actually inflicted heavy penalties from contractors, and mentioned that at this moment one of the Committees was going through the books of a contractor to ascertain whether trade union wages had been paid to the men.

Mr. Dove said there was no difficulty in enforcing penalties with regard to wages, but with regard to the preferential employment of London men, he could foresee great difficulties. The Council did not desire to lay down a hard-and-fast rule, but the principal object was to put an end to the system under which a provincial firm securing a London contract brought all their provincial men to London. There was no need for a penalty clause, for the guarantee of the contractors to give preference to London men was usually quite enough. If such an understanding were ignored, the Council could put contractors on the black list.

The Council declined to insert penalty clauses with respect to preference.

Bermondsey Improvement.—After a long debate with respect to a proposed new street from Dockhead to Jamaica-road (in connexion with a tramway electrification scheme), the proposal was referred back to ascertain if the Bermondsey Borough Council would contribute one-third of the total cost, 77,500*l.*

Night Work.—In connexion with the acceptance of the tender of Messrs. Price & Reeves, 13,971*l.*, for the construction of a storm-water outlet at the Falcon-brook pumping-station, the labour members sought to secure the insertion in the contract of a clause for the payment of an additional 1d. an hour to the labourers engaged on the night shifts.

Mr. Norman, however, explained that the view of the contractors was that the work was not builder's work, and that, therefore, the extra money was not in accordance with the arrangements as to wages. The Council's officers upheld that contention.

Mr. Dove remarked that there were several well-defined lines with regard to such works, though there might be a few instances in which doubt might be raised as to what was building and what was engineering work. This work, however, was distinctly an engineering work, and therefore the clause with reference to the extra penny did not apply. If, of course, the firm came to do any work under the contract that might be regarded as builder's work, then the extra money would have to be paid in accordance with the scheme arranged between the masters' association and the unions.

Mr. F. Smith said the risks at night were greater than with day work, and under such circumstances the extra money should be paid. If there was a difference of opinion as to whether the contractors were engineers or builders, that was no reason why the men should have to suffer.

Mr. Easton said the contract would have the usual clause for the payment of trade union wages, and the Council could not go into the debatable technical question as to the precise nature of the work.

A proposal of the labour members to compel the contractors to pay an extra 1d. per hour to night labourers was rejected.

Bishopsgate-street.—The Local Government Committee reported that they had come to the conclusion that a *primâ-facie* case had been made out for the incorporation of Bishopsgate-street Within and Bishopsgate-street Without under the name of Bishopsgate, and that they had provisionally approved a scheme for renumbering the thoroughfares.

Mr. Felix Cassel moved that the suggestion should be referred back, because of the distinctive antiquity of the two streets, a distinction which had existed as far back as the XIIIth century. The renumbering would cause great inconvenience to many world-wide companies, such as Barings, and create much confusion.

Mr. Buxton seconded the amendment.

Mr. Domoney stated that the City Corporation was in favour of the renumbering and including both thoroughfares under the title of Bishopsgate, because it was the wish of the majority of the firms carrying on business there.

Sir John Benn thought the proposed renumbering and renaming was full of promise for London, and betokened that unification of London by which the roof of the Guildhall would be spread over the whole of London.

The amendment was defeated on a show of hands, and the renumbering will accordingly be carried out, subject to a further poll of the occupiers in the two thoroughfares.

The Council adjourned at 8.30 p.m.

* See our Tenders columns last week for full list of the tenders.

THE MESSINA EARTHQUAKE. — At Reggio, in Calabria, there are to be found some curious instances of houses escaping the earthquake unscathed. A rare example of a building absolutely untouched is the public washhouse recently built on the bank of the Calopenace, which flows to the south of the town. This is an extremely lightly-built structure of brick, with slender pillars and eternite roofing. It shows no sign of damage, although houses quite near were ruined. The escape was due to the accuracy of the building, which ensured stable conditions for the structure. A few half-timbered houses, *i.e.*, wood skeletons filled in with walling, scattered about the town, withstood the shocks so successfully that this method of construction appears to be one that should be encouraged.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

City of London.—That the application of Messrs. Smee & Houchin for an extension of the period within which the erection of balconies, oriels, and a projecting hood at Nos. 108 to 111, Fleet-street, City, was required to be completed, be granted.—Agreed.

Hampstead.—A projecting iron and glass porch at No. 5, Oppidans-road, Hampstead (Messrs. McDowall, Steven, & Co., Ltd., for Mrs. C. Braby).—Refused.

Islington, East.—An additional story to the one-story shops at Nos. 198, 200, and 202, Blackstock-road, Finsbury Park (Mr. H. Goodchild for Mr. T. C. Wootton).—Consent.

Kensington, South.†—A projecting clock in front of No. 102, Kensington High-street (Mr. W. Hammond for Dr. Jaeger's Sanitary Woollen System, Ltd.).—Consent.

Lewisham.—A one-story building on the western side of Lewisham High-street (Mr. W. Hancock).—Consent.

Lewisham.—A wood and glass covered way at the flank of No. 43, Bromley-road, Lewisham, to abut upon the southern side of Penerley-road (Messrs. J. Ellis & Son for Mr. J. Longman).—Refused.

St. Pancras, South.—A projecting hood and balcony in front of Nos. 195 to 199, Euston-road, St. Pancras (Mr. J. Newcombe for the Amalgamated Society of Railway Servants).—Consent.

Wandsworth.—Porches, wooden oriels, and barge-boards to four houses on the north-western side of Hendham-road, Wandsworth-common (Mr. A. G. Hastilow for Mr. F. E. Cain).—Consent.

Wandsworth.—A building on the north-western side of Vant-road, Tooting, to abut upon the south-western side of Totterdown-street (Mr. W. Bartholomew).—Refused.

Westminster.—Showrooms at Baltic-wharf, Grosvenor-road, Westminster (Mr. R. F. Atkinson for Castle's Shipbreaking Company, Ltd.).—Refused.

Width of Way.

Islington, South.—Retention of a forecourt wall to the Holy Trinity parish hall, at less than the prescribed distance from the centre of the roadway of Richmond-road, Islington (Messrs. Ranger, Burton, & Frost for the Rev. C J. Proctor and others).—Consent.

Width of Way and Lines of Frontage.

Marylebone, East.—An external iron staircase next to Adam and Eve-court, at the premises of Messrs. Hyam & Co., Ltd., Oxford-street and Wells-street, St. Marylebone (Mr. A. Sykes for Messrs. Hyam & Co., Ltd.).—Consent.

Width of Way, Line of Frontage, and Construction.

Greenwich.—A wood and iron mission hall on the south-western side of Church-lane, Greenwich (Mr. W. P. Calder for the Building Committee of the Wellesley House Unsectarian Mission, Charlton).—Refused.

Width of Way and Construction.

Islington.—The retention of a wood and iron bookstall of a temporary character in the station-yard, Highbury-corner, Highbury (Messrs. Wyman & Sons, Ltd.).—Consent.

Westminster.—The retention of four wood and iron buildings of a temporary character at Ranelagh Works, Chapter-street, Westminster, with two of such buildings at less than the prescribed distance from the centre of the roadway of Hide-place (Messrs. Holland & Sons).—Consent.

Space at Rear.

Kensington, South.—A modification of the provisions of Part V. of the Act, 1894, so far as relates to the erection of a house on the western side of Kensington Palace-gardens, Kensington, southward of Noel House (Mr. A. F. Faulkner for Mr. W. Willett).—Consent.

Lewisham.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of two houses on the western side of Manwood-road, Crofton Park, with irregular open spaces at the rear (Mr. J. Nicholls).—Consent.

Marylebone, East.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of a building on the northern side of Mortimer-street, St. Marylebone, with an irregular open space at the rear (Mr. F. W. Marks for Messrs. P. B. Ravenscroft & C. F. Ravenscroft).—Consent.

Digitized by Google

Whitechapel.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of an addition at the rear of No. 73, Whitechapel-road, Whitechapel (Mr. J. R. Moore-Smith).—Consent.

Deviation from Certified Plans.

Strand.—Deviations from the plan certified by the District Surveyor, so far as relates to the re-erection of No. 24, Great Marlborough-street, Strand (Mr. H. Goslett for Mr. C. Smith).—Consent.

Formation of Street.

Wandsworth.—The retention of barriers across Broadwater-road and Khama-street, Garratt-lane, Tooting (Messrs. Grundy, Izod, & Co.).—Consent.

Alteration of Buildings.

Wandsworth.—A modification of the provisions of Part I. of the first schedule of the Act, so far as relates to the construction of rooms in the roof of a house known as "Gordon Dene," Prince's-road, Wimbledon Park, without the existing walls of the building being made the thickness required by such schedule (Southern Building Company, Ltd., for Mr. C. Fitch).—Consent.

Uniting of Buildings.

City of London.—The uniting of Nos. 77 and 78, Fore-street, City, by an opening at the fourth floor level (Messrs. W. Gower & Son for Messrs. Moeller & Condrup).—Consent.

City of London.—The formation of an opening between Nos. 5 and 6, Holborn-circus, City, at the fourth floor level (Mr. T. Sobey).—Consent.

The recommendation marked † is contrary to the views of the local authority concerned.

Architectural Societies.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

At the annual gathering of the Society at the Queen's Hotel, Leeds, on Thursday evening, November 11, Mr. Percy Robinson, F.R.I.B.A., delivered his presidential address, a portion of which is given separately on another page. The president was cordially thanked for his address on the motion of Mr. Butler Wilson, F.R.I.B.A.. In seconding the motion Mr. Bowman took exception to the President's commendation of the Town Planning Bill, a measure which he, personally, regarded as having been framed by a body of gentlemen possessing scanty knowledge of town planning, and, as such, of little use to a city like Leeds.

The proceedings terminated with a smoking concert. During the evening the prizes awarded to students in the annual competitions were distributed. The next general meeting will be held on Thursday, November 25, at the Society's rooms, Park-street, Leeds, when Mr. Martin Shaw Briggs, A.R.I.B.A., will deliver a lecture on "An Unknown Italian City."

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

On Thursday the 11th, Professor F. W. Simpson, of London, read a paper on "Architectural Developments during the Reign of Queen Victoria." He said that the end of the XVIIIth century was an age of shattered traditions due to various causes, of which the French Revolution was the most important. The first half of the XIXth century was an age of archæological revivals, the Greek and the Gothic, resulting in the "war of the styles," with Professor Cockerell chief on the one side, and Augustus Welby Pugin chief on the other side. The buildings of Cockerell, and St. George's Hall, Liverpool, were the most striking examples of the Greek revival, while the Houses of Parliament, Westminster, marked the culmination of the first period of the Gothic revival. As interest waned in the fine revivalist work, begun during the sixties and seventies of last century, chaos resulted, and sketch-book architecture became the rage, the latter development being mainly due to increased facilities for foreign travel. A great improvement, however, took place in the designing of town and country houses, and red brick and tiles took the place of stucco and Welsh slates, with the result that so-called "Queen Anne" architecture became the fashion. The last quarter of the XIXth century, continued the lecturer, was noticeable for the revival of civic architecture, and for the large number of new public buildings, town halls, schools, etc., most ably designed, and evincing the determination of public bodies that their buildings should not only be commodious and conveniently planned, but also architecturally beautiful and worthy of their cities. The end of the last century saw also the commencement of a general agreement amongst architects as to architectural style, which the years of the present century may be said to have consolidated. There was now, he thought, every chance that the XXth century might possess what the XIXth never attained to, a recognised vernacular style based on tradition, but not fettered by it, and original without being eccentric. In conclusion, the lecturer said that the great improvement which had taken place in architecture recently proved beyond doubt how essential unity was for advance in our art, and when unity became universal there was every probability that advance would be still more rapid. The lecture was illustrated by lantern slides.

EDINBURGH ARCHITECTURAL ASSOCIATION.

The first meeting of the Associates' section for the session was held in the rooms at 117, George-street, on the 10th inst., Mr. William Davidson presiding, when a paper on the application of art to industry was read by Mr. James A. Morris. Our own age, he said, had been and still was preeminently one of marvellous inductive and applied science, of commercial expansion, of material prosperity. The old and enduring attributes of strenuous labour, of heroism, of sacrifice, still remained our heritage; but in the glamour of great material achievement, had not the princess of beauty, deafened by the roar of the great road, distracted by its turmoil, and finding little place and welcome for herself therein, when jostled into the hedge-grown byways elected there to remain? Let them try to realise that when beauty again became the first essential of the home, in art as in ethics it would quickly spread therefrom and fill the national life. The lecture was illustrated with lantern slides.

Engineering Societies.

INSTITUTION OF ELECTRICAL ENGINEERS.

An interesting ceremony took place at the opening meeting of the Institution of Electrical Engineers last week. Professor Bertram Hopkinson, of Cambridge, presented to the Institution, on behalf of his mother, a bust of the late Professor John Hopkinson, F.R.S., who was twice President. It will be remembered that, with three of his family, he met with an untimely death on the Alps in 1898. The bust is a replica of the bust by Hamo Thornycroft, R.A., which is at Cambridge.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

At a meeting held at Norwich on Saturday last, the Eastern District Committee of the Institution was formed. Among those present were Messrs. S. G. Bloy (Mutford and Lothingland), in the chair, Thomas Brown (Norfolk), R. G. [Coates (Norfolk). R. Croome (Cromer), B. Gibson (Norfolk), H. G. Kaines (Norfolk), Robert Nelson (Norfolk), Andrew Paterson (St. Faiths), and D. S. Scoones (Norwich), together with Mr. B. Wyand, Secretary of the Institution. Mr. J. H. Webb, Borough Surveyor of King's Lynn, was unanimously elected district chairman, and Mr. R. G. Coates, District Surveyor of the Norfolk County Council, was unanimously elected honorary district secretary. It was decided that, subject to Mr. Webb's approval, the first meeting of the committee should be held at King's Lynn.

THE ROYAL SANITARY INSTITUTE.

A SESSIONAL meeting of the Royal Sanitary Institute was held on the 10th inst. at No. 90, Buckingham Palace-road, when a discussion took place on "The Quality of Effluents in Relation to Standards," Sir A. Binnie, M.Inst.C.E., Vice-President, in the chair.

The discussion was opened by Mr. G. J. Fowler, D.Sc., F.I.C., who said it was assumed that rigid and universally applicable standards were impracticable, but every effort should be made accurately to ascertain the conditions surrounding an effluent discharge in any given instance. The subject for discussion fell under two heads, *i.e.*:—(1) The actual chemical significance of the various chemical tests at present made use of by various rivers authorities for estimating the quality of effluents, with a special reference to the tests suggested by the Royal Commission; (2) the effect which certain effluents, which might comply with some, at any rate, of these standards, might have upon the streams into which they flow. The chemical tests which were used in estimating the purity or otherwise of an effluent were, speaking generally, the amount of oxygen absorbed from permanganate, the incubation test, albuminoid ammonia, nitrates, suspended solids, rate of absorption of dissolved oxygen.

One of the first questions which arose in judging of the meaning of analytical figures was whether a sewage was weak or strong; thus, for example, an 80 per cent. reduction of impurity, measured by albuminoid ammonia, with a sewage of original strength of 1 part of albuminoid ammonia per 100,000, would give an effluent with an albuminoid ammonia of 0·2 parts per 100,000. If the original figure for the sewage was 0·5, the effluent would be 0·1, which would be, for instance, within the limits of the Mersey and Irwell Joint Committee. Assuming that the sewages differed only in strength, it might be taken that the character of the organic matter remaining in the effluent was the same in both cases, and thus was of equal effect from a pollution point of view, although superficially one effluent was twice as bad as the other. It had, indeed, been argued by Dunbar and Thumm on the Continent that after a certain percentage purification had been attained, the residual organic matter was so altered in character as to be inoffensive. On the other hand, it had been pointed out to him by a responsible chief inspector that the effect of the two effluents on the stream was not identical, owing to the greater volume of diluting water carried by the weaker sewage. This was a point which deserved discussion, especially in relation to the development of growths.

The question of suspended matter raised several points of importance. As Mr. Thompson pointed out at Leeds, much depended upon the length of time elapsing between the taking of the sample and its actual analysis. Many effluents, especially those containing iron salts, while free from visible suspended solids at the time of sampling, were capable of yielding considerable deposits on standing. The clarification test afforded a means of approximately estimating the character and amount of this potential deposit. It might vary very much in different classes of sewage, and in the same sewage on different days of the week. Thus, for example, the sewage of Wakefield, which had recently been submitted to thorough investigation, contained the greater part of its organic matter in the colloidal state, owing to the amount of wool-washing refuse present. The precise reverse was characteristic of Manchester sewage. Again, those who were familiar with small sewage works would have noticed the greater opalescence of the effluent on washing days: in fact, there was evidence to show that the colloidal matter in an effluent consisted largely of metallic soaps.

The trade effluents in the sewage naturally greatly affected the meaning to be attached to the different analytical figures. Mention had already been made of Wakefield. Even after the removal of the grease, the residual organic matter from the wool contained a high proportion of organic nitrogen, which there was reason to believe oxidised much more slowly than the nitrogenous organic matter of ordinary sewage. What had been said with regard to Wakefield sewage applied even more noticeably to the sewage of Bradford. It was to be expected, therefore, that effluents from such towns would contain high figures for albuminoid ammonia, which were not derived necessarily from excrementitious matter. In the case of Manchester the albuminoid ammonia figure, and to a greater extent the oxygen absorbed figure, was affected by trade effluent: more particularly by phenolic compounds and by sulpho-cyanates contained in the ammonia recovery liquors, which were turned into the sewers in large quantities by the gasworks, and by manufacturers who worked up the liquors from other towns. It

Digitized by Google

was the custom of the rivers authorities in the northern manufacturing centres to adopt different standards, in the case of manufacturers' effluents, from those employed in judging the effluents from sewage works. Provided suspended solids were removed, much higher figures were allowed for oxygen absorption and for albuminoid ammonia in the former than in the latter case. It was no doubt rightly considered that, apart from the inherent difficulties of treatment, manufacturers' effluents were less dangerous—from the point of view, at any rate, of producing nuisance—than the effluents from sewage works. It should, however, easily be possible to determine within limits what proportion, say, of the oxygen absorbed figure was due to trade refuse, and what proportion to sewage proper, by comparison, *e.g.*, with purely domestic sewage of corresponding strength or by special methods of analysis. Thus it had been possible, by means of the clarification test, to show that Manchester sewage contained an abnormal proportion of oxidisable matter in true or crystalloidal solution, which diminished at times when ammonia recovery liquor was not present in the sewage. All these and other difficulties in interpretation of the various analytical figures made use of as provisional standards, were sought to be overcome by the two simple tests suggested by the Royal Commission. The Royal Commission state that an effluent would generally be satisfactory if it complied with the following conditions:—

(1) That it should not contain more than three parts per 100,000 of suspended matter; and (2) that after being filtered through filter paper it should not absorb more than (*a*) 0·5 parts by weight per 100,000 of dissolved or atmospheric oxygen in twenty-four hours, (*b*) 1·0 part by weight per 100,000 of dissolved or atmospheric oxygen in forty-eight hours, or (*c*) 1·5 parts by weight per 100,000 of dissolved or atmospheric oxygen in five days.

In connexion with the suspended matter determinations Mr. Thompson had pointed out the differences already mentioned due to the presence of colloidal matter, apparently fearing that the estimation of suspended solids was likely to be unfairly high unless the sample was analysed at once after collection. The danger would seem to be rather in the other direction. On the other hand, the filtration through paper, which was recommended, was likely to cause retention of colloidal matter, and consequently diminution in the amount of dissolved oxygen ultimately taken up. It might be suggested that the dissolved oxygen should be determined after the sample had been allowed to settle, say, for one hour. In the case of a bright effluent from a percolating filter this would afford time for the humus to deposit, the absorption of dissolved oxygen could then be determined in the decanted liquid, when, if colloidal matters were present, the oxygen absorbed by these would be taken into account. It might be objected that this method was less precise than the one given by the Royal Commission, but with reasonable care it would appear likely more truly to indicate the real nature of the effluent. On the whole the Royal Commission tests, especially if slightly modified as suggested, should distinguish between weak and strong sewage, and generally enable a fair conclusion to be drawn as to the probable effect of the effluent upon the stream into which it flows. The test was ultimately based on the careful researches of Adeney, who had shown that when organic matter of various sorts was submitted to the action of dissolved oxygen in presence of bacteria, oxidation took place in two well-defined stages, viz., the oxidation of carbon to carbon dioxide, and of nitrogen to nitric acid. It might, however, be questioned whether this sequence, which held for mixtures of polluted matter and water containing an excess of dissolved oxygen, existed equally under the conditions of purification of a sewage works. There were reasons for thinking, in the writer's opinion, that, *e.g.*, in high-speed percolating filters the ammonia in the sewage might be oxidised in large measure to nitrates, while the more resistant organic matter was far from completely attacked. In the case of contact beds, moreover, the first portion of the discharge was certainly less well oxidised than the last drainings, and while the average effluent might fulfil all requirements, a portion, at any rate, of the albuminoid ammonia might be due to less perfectly oxidised organic matter. Although this might not absorb a great amount of dissolved oxygen, it might make its presence felt in the encouragement of certain kinds of growth which became apparent at the outlet of the filters, or in the stream below the effluent outfall.

The speaker then considered the effect of effluents upon streams. His general argument led to the following conclusions:—

1. That the standards suggested by the Royal Commission are, with possible slight modifications, the most practicable and adaptable of any yet suggested.

2. That where the self-purifying power of the body of water receiving the effluent is high, they may be too stringent.

3. That effluents may pass these standards and yet develop undesirable growths at the outfall.

4. That the final treatment of effluents in large and well-aerated, scientifically-managed ponds can, in many cases, be advantageously adopted.

5. That careful and continuous research is necessary in order more fully to determine the different links in the cycle of nature, upon conformity with which efficiency and economy in the disposal of the waste products of human life must ultimately depend.

A general discussion followed.

Competition News.

WORKINGTON TECHNICAL COLLEGE.

We are informed that the Sub-Committee of the Cumberland County Council have extended the time for receiving designs in this competition to the 30th inst. They have declined to accede to the representations to appoint an assessor, but may avail themselves of the services of experts before making a selection.

NEW BAPTIST CHURCH, MITCHAM, SURREY.

A limited competition has recently been held in connexion with the proposed Baptist church and Sunday-school, to be built in the London-road, Mitcham. The Committee invited six architects to submit designs, and from amongst these have selected the scheme submitted by Messrs. Thomson & Pomeroy, of Wimbledon.

NEW GRAMMAR SCHOOL, PRESTON.

The Corporation of Preston recently invited designs for a new grammar school for boys to be erected in Moor Park-avenue, Preston, and have now made the following awards:—First premium, 50*l.* (design No. 9), Messrs. Woolfall & Eccles, Bank-buildings, 60, Castle-street, Liverpool; second premium, 30*l.* (design No. 97), Mr. Arthur T. Greenwood, 92, Market-street, Manchester; third premium, 20*l.* (design No. 134), Messrs. Packer, Drewitt, & Drewitt, Shaftesbury-buildings, Southport.

TECHNICAL SCHOOLS AT KENDAL.

The awards for the plans and drawings for the new technical schools at Kendal were made on Wednesday. Twelve plans were received, and the three premiums of 15*l.*, 10*l.*, and 5*l.* respectively were awarded as follows:—(1) Mr. W. L. Dolman, Windermere; (2) Mr. Malcolm Shaw, Kendal; (3) Mr. Stephen Shaw, Kendal. The competition was limited to architects residing and practising in Westmorland.

Correspondence.

THE BIRKENHEAD BUILDING MISHAP.

SIR,—Referring to your article [see page 516 *ante*] and my solicitors' letter to you and your telegram in reply, I beg to send you the following information.

For reasons into which it is unnecessary to enter it was deemed desirable, if practicable, to construct the substructure of the building of ferro-concrete. I do not profess to be an expert in this class of construction, and therefore with the consent of my client I employed a concrete specialist to design and superintend the erection of a ferro-concrete substructure. This specialist recommended a contractor who had done similar work for him in a satisfactory manner. I know the contractor in question, who has successfully completed several works where ferro-concrete construction was adopted, and who is carrying out other ordinary building contracts under my supervision for the same client.

Only one other firm submitted a design and estimate, and apparently it is from them that your information has been derived. Their estimate was considerably higher than the accepted estimate, the difference being on their own explanation mainly attributable to the fact that the firm in question have no establishment on the Birkenhead side of the Mersey, and would therefore have had to supply special scaffolding, plant, etc., whereas the accepted firm have an establishment close to the site.

I do not, as your article suggests, attach particular importance to the use of any particular bar. On the contrary, my view is that it is most regrettable that the use of ferro-concrete should be hampered as it is by "patent systems" of proprietary specialists. However, as already stated, I am not an expert in ferro-concrete work, and left the design to the specialist. The estimate was accepted on his advice, and I relied upon his skill and judgment to ensure that the work was efficiently carried out.

It is not my purpose to attempt to vindicate either the specialist who designed and supervised or the contractor who carried out the work. They are capable of taking care of themselves. It is so far satisfactory to me that they have without pressure undertaken all responsibility with reference to the mishap.

Your strictures passed without inquiry not upon the person who designed and supervised the work, but upon myself, are wholly unjustifiable, and I have to ask you to withdraw and make immediate and ample apology and amends for the same.

G. DE C. FRASER.

Liverpool,
November 17, 1909.

*** See our note on page 547.—ED.

"HOUSE DRAINAGE."

SIR,—In your issue of November 13 I see an interesting paper read at the Architectural Association by Mr. W. D. Scott-Moncrieff on house drainage. As there is a somewhat lengthy notice of my system, I think a few facts might prove to be not uninteresting to some of your readers. I shall confine myself to facts, and to my own experience.

I made my first trial of the system in the autumn of 1876, when I was building a house for myself. No traps to any of the closets, no disconnecting tank, no complicated ventilation pipes, and a soil-pipe open at top and bottom.

For thirty-three years the system has been in constant use and has never been altered, and no portion has ever been cleaned; it is absolutely automatic in its action, the fall of the water in the soil-pipe evidently cleaning out the underground trap on the drain most effectually. We have never had the smallest smell either in the house or out of it.

The original soil-pipe was 3 in. in diameter. I at once saw that it was too large, and in my practice I have always since used a 2½-in. pipe. After the 3-in. pipe had been in use for thirty years I had it removed and a 2-in. one put in its place with still more satisfactory results. When the original one was taken down, a section of the middle of it was cut out and brought straight into our dining-room, where it stood for some days. It had no smell and was quite clean inside.

I have often wondered at the manifest terror with which so many people regard soil-pipes. I assume that they are convinced (I believe erroneously) that a soil-pipe *must* necessarily be an evil-smelling and pestilential thing; they cannot disabuse their minds of this idea. If they could only realise the fact that a soil-pipe is used for the conveyance of slops and other foul matters at intervals, in an ordinary house for, say, ten minutes all told in the course of twenty-four hours, and that for the remainder of the day it is simply an air-pipe with a current of fresh air passing up it, I believe their fears would rapidly disappear.

R. NORMAN SHAW, R.A.

Hampstead, November 15.

SIR,—In his interesting paper read before the Architectural Association, and reported in your issue dated November 13, 1909, Mr. Scott-Moncrieff referred to the regrettable lack of scientific work done upon the sewage question. Though this is, in a great measure, unquestionably true, it can scarcely be said that "it has never been subjected to any method of

Digitized by Google

measurement." Surely the methods now in use for expressing the amount of purification depend upon accurate estimation? And the volume of accurate work produced by such investigators as Dunbar, Gilbert Fowler, Dibdin, Barwise, Somerville in this country, Winslow and his colleagues in America, and Calmette in France, can surely be regarded as valuable, both scientifically and practically.

Mr. Scott-Moncrieff, in his reply to the points raised in the discussion, put forward the idea that, in the Dibdin slate beds, the sludge fell off the slates, and was carried with the effluent into the fine contact beds. Perhaps a few remarks with regard to this matter might be of interest. At the works at Devizes the sludge entering the beds amounts to 3,500 tons wet (90 per cent. water) sludge per annum. This amount of sludge occupies a volume of 4,550 cubic yds. Now, there is collected from the effluent from slate beds on an average 100 tons of sludge (wet) per annum, occupying a volume of 130 cubic yds. Hence we have to account for 4,550 — 130 = 4,420 cubic yds. of sludge per annum. Now, the capacity of the Devizes slate beds may be put at

82 per cent. of 8 × 68 ft. × 45 ft. × 4 ft. = 2,974 cubic yds.

Hence the amount of sludge above mentioned is enough to have filled the slate beds with a very considerable margin. As it has not done so, the deposit on the slates being only ½ in. deep after three years' work (according to the Report of the Royal Commissioners), the question arises at once, where is this sludge? Mr. Scott-Moncrieff replies that it has fallen off the slates and gone into the fine contact beds. Let that be granted, what would be the result? The fine contact beds at Devizes have the same dimensions as the slate beds, and their capacity may, on the usual assumption, be put at one-third that of their cubic content, as calculated from their dimensions, which gives them a capacity of

33·3 per cent. of 8 × 68 × 45 × 4 cubic ft. = 1,197 cubic yds.

But on the basis of the Royal Commission figure of ½ in. thickness left on slates, it may be calculated that 768·5 cubic yds. remain in the slate bed; so that collating these figures we get that, according to Mr. Scott-Moncrieff's theory, 4,420 — 768·5 = 3,651·5 cubic yds. of sludge have slipped off the slates and gone with the effluent into the fine contact beds—a quantity enough to fill them solid about three times over in one year. Hence, if Mr. Dibdin's hypothesis as to the action of his slate beds be not correct, we are face to face with the "annihilation" of some thousands of cubic yards of matter. The sludge is not in the slate beds, not in the contact beds (or both the beds would be solid), and not in the final effluent. Then where is it?

These calculations are only valid for the first year, as, seeing that the figure 768·5 cubic yds. (residue on slates) is probably approximately constant, it cannot be deducted for second and succeeding years; so that, in this particular case, the amount of sludge to be considered per annum after the first year is the full 4,420 cubic yds., enough to fill the contact beds almost four times. Yet these Devizes beds have only been dug over once in three years. In reply to questions from the Romford Urban District Council, the Devizes Borough Surveyor pointed out that:—

	£	s.	d.
The cost of chemical treatment and pressing	700	0	0
The cost of maintenance and working of slate beds	200	0	0
Showing a reduction per annum of	500	0	0

Which figures can, I think, be left to speak for themselves.

E. STANHOPE KITCHIN, Ph.D., B.Sc.
Overdale, Woodford Green, Essex.

THE INTERCEPTING TRAP.

SIR,—Permit me to draw Mr. Scott-Moncrieff's attention to the fact that the intercepting trap was invented by my father, the late Richard Weaver, C.E.F.C.S., author of the *Builder* Reports on Towns, etc., many years before Mr. Buchan brought out his trap. Before the article was manufactured and put into general use, my father used to make a crude one out of bends and pieces of pipe stuck together with cement.

E. R. WEAVER.

DRY ROT AND PUGGING.

SIR,—In a long experience of the building trade I had never met with this till I was middle-aged, and was doubtful of its existence, considering it was due to the usual sappy timber, or timber that had been bled too much and all the resinous matter taken from it.

I have since been brought in contact with several cases. The first, an old public building, the cause a cheap hot-water installation for heating. The pipes were laid under the basement floors on the bare ground. The moisture drawn from the ground and the heat produced a fungus that attacked the joinery and timbers (it could be stripped off in ribbons 12 ft. long). The apparatus was changed to a steam-heating system, the pipes in brick trunks, and the dry rot disappeared.

The other was a large institution newly finished. A number of rooms had been built for future requirements, and these were shut up. Great care had been exercised in the building, plenty of air bricks in the outer walls, and 6-in. drain pipes under the corridors.

The lady matron had taken one of the spare rooms for her flowers and flower-pots, and a great deal of water was thrown over the floor. The floors and floor joists were of pitch-pine. Dry rot started in this room and spread to all the disused rooms. The Committee were furious, and wanted the blood of the architect.

I found a raised border had been made against the outside wall, and the external air bricks covered, and many of the rooms had not had the windows opened for months.

Another case, a small police court, only used monthly, heated by a large Shorland's stove, match-boarded and varnished dado. This was discovered in time by discoloured spots appearing on the dado. The external air bricks had been placed too low, and the outside ground covered them. The windows were closed from one month to another. The air bricks were raised, and centre-bit holes bored in the dado, and the windows opened daily, and the dry rot disappeared.

I have had to deal with basements below the ground level. I have seen if the sleeper walls were honeycombed, and, if not, cut holes in them. I have then taken out the basement grate or range, taken a 3-in. iron pipe under the hearth and about 4 ft. up one angle of the chimney, then a Tobin's tube taken through the basement floor, and up the basement and through the wall with a large air brick. This is only for old buildings, as wood-block paving would now be used.

I have used acres of linoleum, and never had a case of rot from its use. I always see the floor is dry, and that it is not cemented down till a week after it is left dry. I have heard of many cases, but it is always a case of either the timbers being wet, or the floor washed just before the linoleum is laid. I used lime and hair pugging for twenty-five years, and never had a case, the lime used hot. Lately I have seen some horrid examples; road dirt would be better. I have used broken coke five parts, cement one part. It is cheap, and makes a perfect soundproof floor.

ROBERT PHILLIPS.
Shire Hall, Gloucester.

RESIN IN WOODWORK.

SIR,—I should be much obliged if any of your readers could inform me of any method or preparation for preventing resin from coming out of woodwork and defacing the painted surface.

E. A. M.

Trade Catalogues.

The Holophane Glass Company send us their new price-list and catalogue of globes and reflectors for electric and gas lighting. The Holophane globes are made with exterior and interior prisms disposed so as to redirect the light rays and secure perfect diffusion; the Holophane reflectors are designed upon an entirely different principle, the outer surface being covered with double reflecting prisms redirecting the light rays through the body of the glass and out of the open mouth of the reflector. Being based upon optical laws and methods of obtaining the best possible results from any source of light, the Holophane system represents a form of scientific light control of universal application. The globes are manufactured in three classes:—(*a*) Throwing the maximum light directly downwards and suitable for reading, writing, and dining room tables; (*b*) throwing the maximum light at an angle of 45 deg., as required for general illumination; and (*c*) throwing the maximum light at from 10 to 15 deg. below the horizontal and designed for the illumination of large areas. The reflectors also are prepared for various kinds of service, and should be carefully selected in every case. The company announce the fact that their engineering department is ready to assist purchasers to select the best types of globes and reflectors, and to furnish architects with complete estimates and specifications for lighting installations of any size.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnes.—Plans have been passed as follows by the Urban District Council:—Mr. H. Burridge, twenty-six houses, Martindale-road, Mortlake; Mr. C. Barwell, eleven houses, Palmerston-road, and two shops, Temple Sheen-road; Messrs. Bridge & Gulson, motor garage, Laurel House, Laurel-road. Mr. R. B. Ronell has lodged plans for an addition to the Hare and Hounds Hotel.

Hampstead.—In May last the Borough Council asked the London County Council to amend the by-laws so as to validate the practice which has hitherto existed, and to make it clear, either by an interpretation clause or otherwise, that a builder or contractor in control of drainage work, etc., shall, in addition to the existing remedy against the owner, be responsible in cases of breaches of the by-laws as to deposit of plans, etc. The Spring-garden Authority communicated with the Local Government Board upon the matter, and drew attention to the fact that the Divisional Court upheld the decision of the Police Court magistrate in the case of Kershaw *v.* Brooks, that the owner of premises and not the builder or contractor employed by him was liable for any infringement of the by-laws made by the London County Council under sect. 202 of the Metropolis Management Act, 1855, and the Metropolis Management Acts Amendment (By-laws) Act, 1899. The Board, in reply, intimate that it will be prepared to consider the terms of any by-laws proposed to meet the decision referred to. The Board, however, point out that it is satisfied that it is necessary to amend the by-laws, the effect of the decision in the case of Kershaw *v.* Brooks, and in that of Brown *v.* Edmonton, being to show that the applicability of the by-laws to a particular person must be judged by the facts in each case.

Hendon.—The following plans have been passed by the Rural District Council:—Mr. H. O. Cresswell, alterations and additions to the Commercial Travellers' schools; Mr. William Poulter, twelve houses, Manor-road, Pinner; Mr. J. E. Henderson, for the West End Park Estate Company, thirty-eight houses, Meadow-road, Pinner.

Ilford.—Plans have been passed for Messrs. W. P. Griggs & Co. for two houses in Cranbrook-road, and for Mr. T. Randell, for three houses in Pembroke-road.

Paddington.—Between 400 and 500 yds. super. of Kilburn-lane is to be paved with "Durax," at a cost of 12s. 6d. per yard. Should the experiment prove satisfactory more material is to be laid down. The Borough Council has passed plans for the Metropolitan Electric Tramways, Ltd., for an extension of their lines along Harrow-road to Edgware-road.

Shoreditch.—Wood blocks are to be laid in the carriageways opposite various schools, at an estimated cost of 390*l.* Gas lamps are to be converted for electric light, the estimated cost of services to same being 980*l.*

Tottenham.—Plans have been passed by the Council as follow:—Messrs. A. W. Flatau & Co., additions to Flatau's factory, The Hale; Messrs. Walters & Hoare, care of Mr. E. Evans, 253, Lavender-hill, S.W., six houses, Fairview-road; Mr. G. Farnborough, four houses, Westbury-avenue; Mr. E. S. Barr, skating-rink and picture hall, High-road, and Draper's College-road; Mr. Henri Torley, factory, Ashley-road; Mr. H. Richardson, additions to 660 to 674, Seven Sisters-road; Messrs. Norfolk & Prior, skating-rink, Newsams Frontage, High-road. Plans have been lodged by Mr. C. W. Calcott for a warehouse at the rear of the Eagle public-house, Chesnut-road.

Wandsworth.—The following tenders have been accepted for paving works:—Badminton-road, Balham, Messrs. S. Lane & Co., 954*l.* (Borough Engineer's estimate, 999*l.* 10s.); part of Welham-road, Streatham, Mr. R. W. Swaker, 1,121*l.* 3s. 3d. (Borough Engineer's estimate, 1,370*l.*): Langside-avenue, Putney, Mr. R. W. Swaker, 667*l.* 17s. 9d. (Borough Engineer's estimate, 833*l.* 6s. 3d.): part of Wavertree-road, Streatham, Messrs. E. Parry & Co., 890*l.* (Borough Engineer's estimate, 886*l.* 14s. 2d.): Wyatt Park-road, Streatham, Mr. R. W. Swaker, 1,306*l.* 8s. 1d. (Borough Engineer's estimate, 1,493*l.* 4s. 2d.). The following plans have been passed:—Mr. R. E. Nightingale, church, Mitcham-lane, Streatham, at corner of Welham-road: Messrs. Holloway Brothers, thirty-four houses, Swaby-road, Springfield: Messrs. J. Marsland & Sons, sacristy at St. Gregory's R.C. church, Dunts-hill, Garratt-lane, Springfield: Mr. A. E. Balls, twelve houses, Tooting Bec-gardens, Streatham: Messrs. Holland & Hannen, lodge at Royal Hospital for Incurables, West-hill, Southfield: Messrs. Swain & Selley, forty-nine houses, Ribblesdale-road, Streatham: Messrs. T. H. Adamson & Sons, additions to Do. Nevers' Rubber Tyre Company's factory,

Digitized by Google

Bendon Valley, Springfield; Wandsworth and Putney Gas Company, offices, Fairfield-street, Fairfield; Messrs. Gelder & Kitchen, shops, mission hall, etc., Mitcham-road, Tooting.

Woolwich.—Plans have been passed as follows:—Messrs. C. B. Neice & T. Wright, 104, Flaxton-road, Plumstead, twelve houses, Garland-street, Plumstead; Mr. W. P. Mackintosh, 16, Warwick-terrace, Plumstead Common, additions to bakery, Inverary-place, Old Mill-road, Plumstead.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

AMERSHAM.—The Rural District Council has passed the following plans:—Six cottages, Lansdowne-road, Chalfont St. Peter, for Messrs. Thomas & Thomas; four houses, King's-lane, The Lee, for Mr. G. Bailey; houses, Marrin's End-lane, Great Missenden, for Mr. E. F. Ferry; houses, Goldhill, Chalfont St. Peter, for Mr. J. Lovell.

Barming Heath.—Additions to asylum (500*l.*); County Surveyor, Maidstone.

Barmouth.—Assembly-rooms; Mr. J. E. Evans, architect, Barmouth.

Beccles.—Secondary school; East Suffolk County Education Committee.

Berriew.—School; Mr. G. Hutchins, architect, Welshpool.

Brecon.—School, Mount-street; Mr. Best, architect, Brecon.

Bristol.—School, Alexander Park; Mr. S. Roberts, builder, Plymouth. Bank premises; Messrs. Hayes & Son, builders, Bristol.

Brixham.—Additions to Town Hall; Messrs. Hazlewood Brothers, builders, Brixham.

Bronant.—School; Education Secretary, Cardigan.

Cheadle Hulme.—Proposed new schools (40,000*l.*) in connexion with Henshaw's Blind Asylum, Old Trafford.

Crookes.—Mission hall; Vicar, St. Timothy's, Crookes.

Crumlin.—School (11,000*l.*); Mr. J. Bain, architect, Newport (Mon.).

Cwmfelinfach.—School (1,050*l.*); Mr. A. J. Colborne, builder, Swindon.

Daventry.—School; County Architect, Northampton.

Derby.—Boot factory; Messrs. J. Wilson & Co., Melbourne, Derby. School, Hastings-street; Mr. J. H. Fryer, builder, Derby.

Downfield.—School (2,500*l.*); Messrs. Orchard & Peer, builders, Stroud, Glos.

Epping.—Additions to workhouse; Messrs. Cowling & Sons, builders, Epping.

Farnworth.—Library; Mr. J. Tinline, builder, Bury.

Furcham.—Additions, St. Martin's Church (1,100*l.*); Mr. W. Weir, architect, Winchmore Hill, N.

Great Harwood.—Chapel for St. Hubert's R.C. Church.

Hayes.—The Urban District Council has passed a plan lodged by Messrs. Woodhouse & Davidson for five houses in Austin-road.

Hedworth.—Additions, St. Nicholas Church (1,700*l.*); Mr. C. H. Fowler, architect, The College, Durham.

Hull.—Twenty-two houses, Haymers Ave; Mr. G. Eckles, builder, Hull. Seventeen houses, Charterland Ave; Mr. J. Osborne, builder, Hull.

Knowl.—School and chapel; Trustees, Wesleyan Church.

Maidstone.—Workshops and offices at Roger's Wharf (3,000*l.*); County Surveyor, Maidstone.

Malvern.—Hospital; Messrs. Brayer & Sons, builders, Broomsgrove.

Navenby.—Wesleyan chapel; the Trustees.

Nedging Tye.—Mission church; Rev. J. S. Gray, Nedging, Cambs.

Newcastle (Ireland).—Extensions, St. Mary's R.C. Church; Mr. J. McDonnell, architect, Belfast.

Newnham (Cambridge).—School; Mr. H. Dunn, architect, Lincoln.

Nottingham.—Operating theatre, with ancellary rooms and offices for the authorities of the General Hospital, Nottingham.

Odsey (Cambs.).—School; Mr. H. Dunn, architect, Lincoln.

Pelton Fell.—Three ambulance-houses (1,200*l.*); Pelton Fell Colliery Company.

Pontypool.—School (4,000*l.*); Mr. W. A. Campbell, builder, Pontypool.

Scackleton.—Church hall; Rev. J. Clayton, vicar, Hovingham, Yorks.

Southampton.—The Town Council has passed the following plans:—Seven houses, Wilton-avenue, ten houses and shops, High-street, Shirley, and a house, Winchester-road, for Mr. W. B. Hill; alterations and additions to hall, Nichols-road, for Mr. O. Archer; offices, Macnaghten-road, for Mr. W. H. Masters; house, Hanley-road, and two houses, Wilton-road, for Mr. J. V. Blake.

Staines.—The Rural District Council has passed a plan lodged by Messrs. Nowell Parr & Kates for rebuilding the Oxford Arms, Hanworth.

Sutton.—The Urban District Council has passed the following plans:—Five houses, Warwick-road, for Messrs. Collins & Son; two semi-detached houses, Cheam-road, for Mr. C. Palmer.

Tamworth.—Congregational church; Mr. E. Coleman, architect, 28, George-street, Tamworth.

Three Bridges.—Plough Inn; Mr. C. H. Burston, architect, Horsham; Messrs. Cook & Sons, builder, Crawley.

Torquay.—The Town Council has passed the following plans:—Addition to Masonic Hall, Park-street, for the Lodge Committee; extensions of premises for the Co-operative Society, Union-street.

Warwick.—Receiving home at workhouse; the Guardians, Warwick.

Watford.—The Rural District Council has passed a plan lodged by Mr. C. Wright for six houses in Lower-road.

Weasto.—Congregational church (3,000*l.*); Mr. Edward Jones, architect, Manchester; Messrs. J. Chapman & Sons, builders, Patricroft.

Wolverhampton.—High school; Mr. H. Lovatt, architect, Wolverhampton.

TRIBUNAL OF APPEAL:

THE BUILDING LINE OF EUSTON-ROAD.

On Wednesday the Tribunal of Appeal under the London Building Acts sat at the Surveyors' Institution to hear the following appeals against the certificate of the Superintending Architect of Metropolitan Buildings, dated September 28, 1909, defining the general line of buildings on the northern side of Euston-road, between Hampstead-road and Osnaburgh-street:—(1) The Metropolitan Railway Company; (2) the trustees of Lewis James Leslie; (3) the trustees of Henry Pige-Leschallas; (4) the executor of Philip Cadby, deceased; and (5) the trustee and executor of the will of Geo. Anson Yeld, deceased. Mr. Macmorran, K.C., and Mr. Bethune appeared for the Metropolitan Railway Company, who are the owners of Nos. 408, 432, and 432A, Euston-road, and also Mr. Eliot, the trustee of Mr. Yeld, freeholder of 320, 322, and 324, Euston-road; Mr. Bethune, for Mr. J. Russell Powell, the freeholder of 310, 312, 314, 316, and 318, Euston-road, and for Mr. Woolf, the lessee of 314 and 316: Mr. C. A. Russell, K.C., and Mr. Walter Ryde, for the trustees of James Leslie, freeholders of from 376 to 388, Euston-road; Mr. Willis, for the executors of Philip Cadby, freeholders of 402 and 404, Euston-road; Mr. J. J. Warren, for Fredk. Braby, the freeholder of 362 and 364, Euston-road, and Messrs. Braby & Co., the lessees: Mr. Brogton, for the trustees of H. Aste, freeholders of 292 to 308, Euston-road; Mr. Woolley, for the trustees of Fredk. Geo. Baker, freeholder of 288 and 290, Euston-road; and Mr. Dennis, for the trustees of Mr. Pige-Leschallas. Mr. Blair, Borough Engineer, watched the case for the Metropolitan Borough of St. Pancras; Mr. Horace Avory, K.C., and Mr. Daldy were for the London County Council.

Mr. C. A. Russell, K.C., by arrangement, opened the general case for the appellants, and said the question to be determined was what was the general line of buildings in that section of Euston-road which lay between Hampstead-road on the east, and Osnaburgh-street on the west. Until recently it was thought that what the Tribunal had to do in dealing with a matter of this kind was comparatively simple, and in the case of the London County Council *v.* the Metropolitan Railway Company, heard this year, Mr. Justice Walton said:—"The Superintending Architect and the Tribunal of Appeal have to look at the road and buildings as they exist, and find out from this data what is the general line of buildings." This simple statement of things, however, had been altered by the recent decision of the Court of Appeal in the same case. This decision was to the effect that in determining what is the general line of buildings the Superintending Architect and the Tribunal were not to have regard to buildings which, although there in effect, were proved to have been placed there under or by virtue of consents to their erection either by the County Council or by the predecessors of the London County Council. In approaching the question, therefore, as to what was the general line of buildings under the section, the Tribunal was bound by the decision of the Court of Appeal to exclude from their consideration and treat as non-existent any buildings which were proved to have been erected by consent given under sects. 75 and 76 of the Metropolitan Management Act, 1862, and under sects. 22 and 26 of the London Building Act, 1894. In the cases now before the Tribunal one supposed that the Superintending Architect had availed himself of the right to disregard the existing buildings, for it would be perfectly childish for anyone to say, looking at the buildings existing along the north side of the section of the road, that the line now laid down by the Superintending Architect was the general line of buildings. The result of placing the building line where the Superintending Architect had now placed it was to practically cut his clients' property in half, and it was a very serious matter to them. Mr. Russell proceeded to read correspondence which had taken place between the London County Council and his clients' solicitors, and said that as the result he did not know on what evidence the Superintending Architect had relied in coming to the decision he had. His clients acquired their property in 1862, and at the time there were buildings in Euston-road coming up to within 9 ft. of the kerb, which buildings had been erected years before 1862. In April, 1908, the trustees entered into a building agreement with Mr. Bousfield, and he proceeded to pull down some existing buildings and to erect a new building coming to within 11 ft. of the kerb. The 11 ft. from the kerb was taken as the building line, which Mr. Vulliamy, the Superintending Architect for the Metropolitan Board of Works laid down in 1867. He produced a plan which Mr. Vulliamy furnished to the freeholders of Euston-road in 1867, and this plan showed numerous one, two, and three story buildings erected on the north side of the road; in fact, with the exception of a few plots, the whole of the frontage of the section was occupied by buildings right up to Euston-road. He submitted that unless any reason could be shown why any of these buildings should be treated as non-existent, it was perfectly clear that the general line of buildings exhibited by that plan was far in front of the line which was now laid down, and it fully justified the line laid down by Mr. Vulliamy, which was a uniform distance of 11 ft. from the kerb. In the section of the road being dealt with, there were seventy-three buildings, occupying 1,138 ft., and of these twenty-six were one story, nine two story, twenty-one three story, fifteen four story, and two five story. Until he knew what buildings the Superintending Architect treated as non-existent, he was unable to criticise the data upon which he had proceeded. If the Tribunal decided to take a larger section than the one before them into consideration in fixing the building line, they would find east of Hampstead-road a long block of buildings of considerable height coming right up to the pavement.

Mr. A. A. Hudson (Chairman) asked what counsel's views were with regard to the two classes of buildings they had to exclude. The first was those buildings in respect of which consents had been given, and the second those buildings in regard to which no consents were given, and in respect of which consent must be presumed.

Mr. Russell said the decision of the Court of Appeal did not go further than to say the Tribunal was wrong inasmuch as they took into account buildings which had been erected by consent.

Mr. E. W. Eason, surveyor, Bishopsgate-street, put in plans of the section of Euston-road affected by the building line fixed by the Superintending Architect. The line would cut away No. 2, Osnaburgh-street, No. 1, Diana-place, and No. 1A, Stanhope-place. It went behind the one-story shops, 300 to 308, Euston-road, and cut off No. 3 and part of No. 5, Hampstead-road. He suggested that the building line ought to be practically Vulliamy's building line of 1867. If the line of the Superintending Architect was adopted, it would amount to a street widening.

In cross-examination, witness said all the houses specified by him as being cut through by the building line were within 50 ft. of the Euston-road. He did not agree that the line of Mr. Riley followed the front of the old buildings on the section.

Mr. Detmar Blow, F.R.I.B.A., who has acted as surveyor for the freeholders of 376 to 388, Euston-road, said the conveyance of the property was dated 1862, and the sketch on the conveyance showed buildings coming up to Euston-road.

Mr. Macmorren said that, so far as the Metropolitan Railway Company were concerned, their property was exactly the same as it was in 1867, except that there was now a vacant site which was formerly occupied by a house, burned down ten years ago. So far as 320, 322, and 324, Euston-road were concerned, the freeholders of which he represented, they were one-story shops, and were the same as in 1867. He relied on the plan of Mr. Vulliamy as showing the building line.

Mr. Dennis proceeded to put in a number of legal documents, including conveyances dated in the year 1856 and 1851. These were generally conveyances of land by Lord South-

Digitized by Google

ampton, and referred to buildings on the site, and there were plans attached, which Mr. Dennis contended showed that the buildings were built right up to the Euston-road. One conveyance was dated 1805, and referred to the Adam and Eve public-house, and reference was made then to the "New Road."

A number of representatives of freeholders formally objected to the new building line, and Mr. Blair, on behalf of the Borough Council of St. Pancras, disapproved of the certificate on the ground that the Borough Council and the Vestry had always supported the building line of Mr. Vulliamy in 1867.

At this stage the Tribunal rose for the day.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

School Cleaning.—Tenders for the cleaning of fifty-seven schools were received, and referred to the Committee.

Paddington Technical Institute. — The tender of Messrs. Deane & Beale, Ltd., 287*l.* 10s., for electrical work, was recommended.

New Wandsworth Elementary School.—The necessary steps were authorised in connexion with the erection of school for 800, at estimated cost of 16,000*l.*, on a site already acquired.

Avery-hill College.—The tender of Messrs. F. & T. Thorne, 26,285*l.*, was recommended for the erection of three hostels, each for fifty students. Architect's estimate, 27,855*l.*

Farrance-street, Limehouse.—Plans were approved for remodelling this old elementary school, at estimated cost of 7,487*l.*, it being recommended that the work shall be done by Mr. T. D. Leng, the contractor now building two special schools on the site.

Queen's Head-street, Islington.—Revised plans were passed for enlargement by 329 places, and supplemental estimate of 3,464*l.* voted. It is recommended that the additional works shall be done by Messrs. McLaughlin & Harvey, whose tender for the enlargement was accepted in July, as an extra.

The "Riversdale," Wandsworth.—An estimate of 1,317*l.* was passed in respect of draining and tar-paving playgrounds, and erecting schoolkeeper's house.

Mantua-road, Battersea.—Preliminary plans were approved for improvements of this school, which was erected in 1876.

Cookery Centres.—It was decided to adapt the cookery centres at Latimer-road, Hammersmith, and Edinburgh-road, Kensington, for use as combined cookery and laundry centres, at estimated cost of 175*l.*

A Delayed Contract.—Mr. J. Stewart, whose tender, 1,391*l.* 5s., for providing domestic economy and manual training centres at Duncombe-road, Islington, was accepted on October 19, pointed out that his tender was submitted in June, and that he carried out a painting contract at the school in July and August, and anticipated that the two jobs would have been executed under the same supervision, and also that the working hours are now shorter, and the price of materials has increased. Under these circumstances it was recommended that the Council should allow a grant of 20*l.*

Oldfield-road, Hackney.—Expenditure of 185*l.* was sanctioned for enlarging the laundry centre and providing teachers' room.

HENNEBIQUE FERRO-CONCRETE.

WE have received from Messrs. Mouchel & Partners a strongly-bound and tastefully-produced volume of nearly 400 pages, which are intended, as stated in the preface, to present full information concerning the Hennebique system of ferro-concrete.

Part I. gives a general description of the Hennebique system, and an able discussion of the mechanical principles upon which it is based. This portion of the book possesses distinct educational value, and applies generally to reinforced concrete designs. As may readily be imagined, the authors appear to be thoroughly convinced of the merits characterising the particular system in which they are interested, and for which they make out a strong case. Points of a controversial nature are to be found here and there, notably with regard to the design of web reinforcement for beams, and lateral reinforcement for columns and struts. Possibly the patentees of other reinforced concrete systems will not be ready to endorse all that is said upon these matters.

Part II. discusses the properties of Hennebique ferro-concrete under the heads of "Durability," "Watertightness," "Hardness and Impenetrability," "Resistance to Vibration," and "Fire Resistance." These qualities of the structural material are illustrated by numerous quotations from the proceedings of engineering societies and other records, and by numerous photographic views of ferro-concrete structures after collisions and serious fires. This part of the volume answers in conclusive fashion various questions occurring to intending users, and should be of service to architects who may be asked to furnish evidence as to the reliability, permanence, and fire resistance of ferro-concrete buildings.

Part III. is virtually an album of views representing different classes of Hennebique buildings, bridges, marine and river works, reservoirs, and miscellaneous structures erected in the United Kingdom, and a few examples abroad. To any people who may still think ferro-concrete is in the experimental stage, or has not been very much used by British architects and engineers, Part III., with more than 230 pages of illustrations, will certainly operate as an eye-opener. The bare statement made at the beginning of the book that more than 700 Hennebique works have been constructed in this country produces far less effect on the mind than the comprehensive series of views here collected and grouped in systematic order.

The volume is completed by an alphabetical index, and although obviously intended to draw attention to the Hennebique system, we feel sure that it will be welcomed by architects and structural engineers as a valuable addition to the literature of reinforced concrete.

Master Builders' Associations, etc.

BIRMINGHAM BUILDING TRADES EMPLOYERS' ASSOCIATION.

The annual meeting of this Association was held at the Grand Hotel on the 11th inst. Mr. F. G. Whittall presided. In the annual report the Committee recorded with regret the fact that, in common with most industries in the city, the building trade during the past year had been in a very depressed condition, and there was at the present time no sign of a revival. As a result of notices served on the operatives, uniformity of working hours in all trades had been secured. As a result of the adoption of an inter-trading rule there had been a large increase in the membership, which now was 140 against eighty-four at the end of last year. The Committee also reported with regret that Mr. E. J. Bigwood, who had been their Secretary for twenty-five years, had found it necessary to resign his office. The balance-sheet showed the ordinary receipts for the year had been 241*l.* 19s. 10d., which, with the balance from last year, made a total of 268*l.* 0s. 5d. The various disbursements had been 222*l.* 16s. 11d., leaving a balance in hand of 45*l.* 3s. 6d.

Mr. F. G. Whittall, in proposing the adoption of the report, said he had a feeling that in their deplorable experience of bad trade they had at last touched bottom, and he hoped they would next year have to record, not only a very satisfactory improvement, but a boom. He announced the Council had appointed as Secretary Mr. G. Henry Wright, of the Chamber of Commerce.—The report was adopted.

The following officers were elected:—President, Mr. Ralph Webb; senior Vice-President, Mr. W. Moffat; junior Vice-President, Mr. G. Elvins; Treasurer, Mr. George Twigg.

At the close of the meeting Mr. Whittall presented to Mr. Bigwood a chiming clock in recognition of his services to the Association during twenty-five years. Mr. A. S. Smith handed to Mr. Bigwood a decorated address recording the members' high appreciation of his assistance to the Association.

In the evening the members of the Association held their annual dinner at the Grand Hotel. Mr. Ralph Webb presided. There was a large gathering, those present including the Lord Mayor (Councillor Bowater), Mr. W. Moffat, Mr. A. S. Dixon (President, Birmingham Architectural Association), Mr. John L. Williams, Mr. F. G. Whittall, Mr. Ernest J. Brown (President, National Federation), Mr. H. Smith (President, Midland Federation), and Mr. G. Elvins.

The toast of "Success to the Birmingham Building Trades Employers' Association and the Trade of the City" was proposed by the Lord Mayor, who said that he noticed they had admitted into their Association members of the allied trades. That would strengthen the foundations of the Society, but it must also be a great advantage to the subsidiary trades. If labour troubles arose between the builders and their workmen the kindred trades suffered equally, and it was only fair that they should have a voice in the management of affairs in order to prevent action which might injuriously affect their interests. Referring to the city building by-laws, he said he had at times heard objections to them, but he thought they would all admit that there should be by-laws, and they could be as stringent as possible so long as they applied to every erection, and, above all, were impartially carried out. Whenever the City Council accepted a tender from a firm outside Birmingham there was always a great outcry, but he did not think any builders of standing joined in the chorus of abuse of the Council. If it were the custom of all local authorities to confine their work to local men, it would be to the very great loss of so splendidly developed a trade as the building trade of Birmingham, for the local builders obtained more work outside the city than the outside men obtained in Birmingham.

The President (Mr. R. Webb), who responded to the toast, was sorry that they could not report any improvement in the building trade in any part of the country. Their trade was the first to feel any depression, and the last to feel the benefit of any improvement in trade generally. Builders made matters worse for themselves by the insane cutting of prices. At present work was being taken at rates which could not leave any margin of profit, and, in fact, must entail serious loss. When a builder succeeded in obtaining a contract his first thought was, "Well, I wonder where the error is, and how much I shall lose." The men in most branches of the trade were again "on the rampage," for they had given notices partly for an increase in wages and partly for alterations in working rules, so he supposed the trade would again experience a troublous time for a few months.

Mr. W. Moffat, who proposed "The Architects and Surveyors," expressed regret that the contract for the Council House extension had gone out of the city, but remarked that their sorrow was partially tempered by the feeling that any loss to be sustained on the contract would not be experienced by a Birmingham firm.

The toast was responded to by Mr. A. G. Dixon and Mr. J. L. Williams. Mr. F. G. Whittall proposed, and Messrs. E. J. Brown and H. Smith replied to the toast of "Kindred Associations," and the health of "The Visitors" was proposed by Mr. G. Elvins.

Obituary.

MR. WORTHINGTON.

Mr. Thomas Worthington, whose death, on November 9, in his 84th year, we announced in our last issue (p. 533 *ante*), was born in 1826 in Crescent-parade, Salford. He received his professional education in the office of Messrs. Bowman & Crowther, whom he assisted in the measurements and drawings for their monumental work in illustration of "The Churches of the Middle Ages," thus gaining an intimate knowledge of Gothic detail. At 19 years old he won the Isis Medal of the Society of Arts for a design for a church, and in 1846 the silver medal of the Institute of Architects for an essay. Owing to these successes Sir William Tite engaged him on his staff for the building of Carlisle railway-station. The railway crash having put a stop to the work, in 1847 he went to Italy, his travelling companion being Mr. H. D. Darbishire. On returning to England he worked for a time with Sir W. Tite, and afterwards settled in Manchester. He was elected, in 1865, a Fellow of the Royal Institute of British Architects, of which he was a Vice-President, 1885-9, and a member of Council. He was a Fellow of the Manchester Society of Architects, and became a member of the Council of the School of Art, the Royal Manchester Institution, and the Sanitary Institution. He was a member also of the Burlington Fine Arts Club. Practising in Manchester, he carried out many important works in conjunction with the late John G. Elgood, and in co-partnership with his son, Mr. Percy Scott Worthington, under the style of Thomas Worthington & Son. Mr. Worthington was the architect of—in Manchester—the Albert Memorial, in Albert-square, 1867 (illustrated in the *Builder*, November 7, 1896, No. II. of our "Architecture of Our Large Provincial Towns" series); Nichol's Hospital, 1879 (November 7, 1896); the Police Courts, or City Court House, 1870-1, built at a cost of some 55,000*l.* (December 28, 1872, and November 7, 1896); the Shipping Warehouse, Deansgate (April 27, 1872); also of Prestwich Union Workhouse (August 17, 1872). Messrs. Worthington & Elgood made designs for a memorial to Lord Frederick Cavendish at Wharfedale (June 14, 1884), and they were the architects of the Lord Frederick Cavendish memorial fountain at "Hartington's Seat," Bolton Abbey (October 24, 1885); of the

Digitized by Google

Leyland Free Library and Museum, Hindley (November 28, 1885); of Manchester College, Oxford (October 24-31, 1891), completed after Mr. Elgood's death by Mr. T. Worthington and his son, and opened on October 18, 1893; and of a large block of general offices at Gorton Foundry, for Messrs. Beyer, Peacock, & Co., engineers, 1882-3. In July, 1890, he and Mr. Elgood, in a competition limited to five architects, won the first premium for their designs for the Royal Infirmary, Halifax, erected at a cost of 70,884*l.*, being 460*l.* less than the estimate. The following were by Messrs. T. Worthington & Son:—Thirlmere fountain, Albert-square, and new wards, Blackpool Hospital, 1896-7; Union Hospital, for 200 beds, Patricroft, for the Barton-on-Irwell Board of Guardians, in competition; the Unitarian church, Sefton Park, Liverpool, with hall, Sunday-schools, etc., at a cost of about 25,000*l.*, and the Brookfield Unitarian church and schools, Gorton, 1897-1900; at Alderley—the Convalescent Home, and residences for Mr. Agnew and Mr. McConnel; new pavilions and alterations, Hull Royal Infirmary, in competition, 1902; Unitarian church hall, Ullet-row, Liverpool; isolation wards, sanitary annexes, etc., Royal Albert Edward Infirmary, Wigan, 1901-2; extensions, Patricroft Hospital; for the Prestwich Board of Guardians—enlargement of Crumpsall Workhouse, the hospital pavilion, and the new infirmary for 400 beds, with administrative block, six pavilions, and special wards, at a cost of 70,000*l.*, with provision for extension, at Blackley, on the Booth Hall Estate; and the police-court new buildings, 1902-4. The firm won the first premium, in a limited competition, for the Manchester and Salford Hospital for Skin Diseases, Quay-street (August 22, 1903); in 1903-4 they were one of the twelve nominated out of fifty-six who entered to compete for the Manchester Royal Infirmary on the Stanley-grove site, for 500 beds, and one of the six nominated to compete for the new Stock Exchange, Manchester. They were the architects of Monton Church, with schools and house, and the memorial gateway and boundary wall (December 24, 1904); the Convalescent Home, Sandlebridge, for Ancoats Hospital; "Woodgarth," Knutsford, Cheshire, for Mr. George Wragge; and the Charlestonroad Infirmary and Nurses' Home, Blackley, for the Prestwich Guardians, 1903-6; and, as one of twelve "outside" architects nominated, were awarded the third premium for their designs for the Bristol Royal Infirmary extension. Mr. Worthington acted as assessor in several important competitions, including those for the Stockport Union Workhouse Infirmary, Skipton Joint Committee Infectious Hospital, City of Manchester fire and police station, and the Y.M.C.A. new buildings, Manchester. As a Governor of the Royal Manchester Institution, Mr. Worthington was elected, eight years ago, as a representative member of the Art Gallery Committee of the Corporation; and he was a subscriber to the new premises fund of the Architectural Association. He retired from the active pursuit of his profession in 1907; in the *London Gazette* of February 1 of that year was announced the dissolution of partnership between him and Mr. P. S. Worthington.

Mr. Worthington had during the last twenty years led a quiet and retired life at his home at Alderley Edge, though it was only three years ago that he entirely withdrew from practice, but till within the last few days of his life he was in sympathy with all that was going on around him and alive to all the architectural activities of the day, and discussed with his youngest son (aged 22) all his projects and followed his studies and designs so that the two were almost like fellow-students. All those who knew him will remember him as one of the most pleasant, kindly, and courteous of men.

MR. HUGH ALEXANDER.

The Sanitary Journal records the death of one of the earliest workers in the Sanitary Inspectors' Association, Hugh Alexander, who departed this life on Wednesday, the 3rd inst., at the age of 79 years, and was interred in Abney Park Cemetery on Saturday, the 6th, in the presence of a representative body of members of the Association. Mr. Alexander was a member from the formation of the Association, in 1883, and was Chairman of Council from 1887 to 1893.

THE LONDON BOROUGH ELECTIONS.—In the recent municipal elections Mr. Max Clarke, F.R.I.B.A., who has represented the St. George-the-Martyr Ward of the Holborn Council for three years past, was elected Mayor of the Borough of Holborn. Mr. P. E. Pilditch, chairman of the Local Government Committee, London County Council, was elected a member of the Westminster City Council, Covent Garden Ward.

General Building News.

NEW CHURCH, HAMNISH, HEREFORD.

A new church is being built at Hamnish, in the parish of Kimbolton. The work of erecting the new church is being carried out by Messrs. Bowers & Co., of Hereford, to plans prepared by Mr. Weatherley, architect, of London.

ST. JOHN'S CHURCH, DEVONPORT.

The old church of St. John the Baptrst, Devonport, has recently been undergoing renovation. The whole of the work has been carried out to the designs and under the supervision of Mr. Edgar M. Leest, architect, of Devonport, the decorators entrusted with the work being Messrs. R. W. Pitcher & Son, Devonport.

NEW WESLEYAN CHURCH AT YORK.

The new Wesleyan church which has been erected at Clifton, York, was opened on the 10th inst. The church has been built to take the place of the New-street church. It is late Gothic in style, with red brick façade and stone traceried windows and dressings. A gallery runs along three sides of the chapel, the other side being occupied by a large oak rostrum and choir seats. Accommodation is provided for 850 adults. At the north end of the façade is a tower, with stone steeple, 100 ft. high. The total cost of the chapel, lecture-hall, and classrooms is 11,176*l.* 15s. The plans for the church were prepared by the late Mr. Edward Taylor.

METHODIST CHURCH, HANLEY.

A Methodist church has been built at the corner of Heathcote-street and Joiners'-square, Hanley. The building provides seating accommodation for 242, and was designed by Mr. William Campbell, Hanley.

EXETER UNIVERSITY COLLEGE.

The foundation-stone was recently laid of the new block of buildings which is to be the home of the University College and Day Training School. The new buildings are to be of brick and Portland stone. The accommodation is divided into two divisions. The first is the University College, which comprises laboratories, lecture-rooms for chemistry and biology; three other lecture-rooms, four classrooms, and other rooms for the students and staff. The second division consists of buildings for the use of the Day Training College, which will contain six classrooms, lecture-rooms, an educational library, and rooms for the use of the staff and students of this department. The cost of the scheme will be nearly 15,000*l.* The architects are Messrs. Tait & Harvey, of Exeter, and the builders are Messrs. Westcott, Austin, & White.

TECHNICAL COLLEGE EXTENSION, BRADFORD.

The foundation-stone was recently laid of the new textile department of the Bradford Technical College. The building is estimated to cost about 18,000*l.*, while a further 14,000*l.* will have to be expended upon machinery and fittings. On the ground floor are a series of classrooms and a lecture-room, a room for the professor, and a timekeeper's room controlling admission to the whole of the building. The apartments on the first floor are arranged in a suite so that they can be adapted when desired for special exhibitions. At other times they will serve as a model-room, a museum, and for other special departments of work. The machinery sheds will be behind this block of buildings. Still farther back will come a third block, which is for the most part allotted to the dyeing department and the engineering department. The plans for the new building are the work of the City Architect, Mr. R. G. Kirkby.

GRAMMAR SCHOOL, HEXHAM.

On the 6th inst. the foundation-stone was laid of the Queen Elizabeth Grammar School at Hexham. The new buildings will consist of one story surrounding a quadrangle. There is to be an assembly hall, 74 ft. in length and 29 ft. in width, with a hammer-beam roof, surmounted by a bell-turret. The classrooms will have accommodation for 240 pupils. The contractors are Messrs. R. Blackett & Sons, Darlington, and the architects are Messrs. Oliver, Leeson, & Wood, Newcastle.

SECONDARY SCHOOL, ALSTON, CUMBERLAND.

The Samuel King's Secondary School at Alston was recently opened. Mr. T. T. Scott, architect, Carlisle, designed the premises. The accommodation provided includes workshops, laboratories, class, assembly, and cloak rooms, workrooms for the laundry and cookery students, accommodation for the master and mistress. The cost is estimated at about 3,600*l.* The contractors were:—Building work, Mr. J. Birkett, Alston; joiner's work, fittings, and furniture, Mr. H. Kearton, Alston; slater's work, Mr. J. Hewitson, Carlisle and Newcastle; plumbing work, Messrs. Harrison Brothers, Carlisle; plasterer's and concrete work and fireproof floors, Messrs. R. M. Ormerod & Son, Carlisle; painter's and glazier's work, Messrs. R. M. Hill & Sons, Carlisle; heating engineer's work, Messrs. Saunders & Taylor, Manchester; sliding screens, School Furnishing Company, Darlington. Mr. G. B. Thain acted as clerk of the works.

GRAMMAR SCHOOL ADDITIONS, PICKERING.

It is proposed to enlarge the Pickering Grammar School. The additions would consist of a classroom, with desk accommodation for twenty-five, which is to be added at the east end of the present science laboratory, and to the east of this a room 50 ft. by 25 ft. The additions, like the original building, have been designed by Mr. John Bilson, architect, of Hull.

SCHOOL ACCOMMODATION, ROSYTH.

At a meeting of Inverkeithing School Board recently the question of erecting a new school was under consideration. A letter was read from the Admiralty Superintending Engineer at Rosyth, stating that probably 2,500 men would be employed at the main contract at Rosyth Dock during the next two years, and that that number would probably be increased to 4,700 in the latter part of 1912. A number of offers were submitted for a feu for the school buildings, and it was agreed to ask Mr. Robertson, architect, Inverkeithing, to prepare a plan of a new school capable of accommodating 900 pupils.

SCHOOL, PORT GLASGOW.

A new school has been erected on the Highholm estates overlooking Port Glasgow passenger-station. The classrooms of the school will accommodate over 1,000 scholars, besides which there is an art-room, a science laboratory, a cookery classroom, and a manual workshop, fitted with twenty joinery benches. The classrooms have been prepared for an elementary school, with supplementary and higher-grade classes as circumstances necessitate. The estimated cost of the building is about 20,000*l.* Messrs. H. & D. Barclay, Glasgow, were the architects.

THE EXHIBITION HALL AT FRANKFORT.

This important building was erected from the designs of Professor Friedrich von Thiersch, of Munich, who won the closed competition which followed a general competition opened for the purpose. The accommodation required was (1) an exhibition hall for large exhibitions of all kinds, for musical performances, singing festivals, etc.; (2) a concert hall; (3) an exhibition gallery; (4) a permanent exhibition for machinery, motors, etc. The great hall, the only portion yet built, has an area of 6,000 sq. metres, and is lighted by a top light measuring 2,000 sq. metres. For acoustic purposes the glass can be screened by a velarium to prevent echoes. The construction is mainly of iron and concrete. It was begun in June, 1907, and in May, 1909, a singing festival was held in it. The estimated cost was 4,000,000 marks, of which 2,733,000 went for the construction proper, 400,000 for heating and ventilation, 250,000 for electric lighting, 377,000 for fittings, etc., and 240,000 for architect's fees.

PARISH HALL, MORTIMER, BERKS.

A parish hall has been erected in connexion with St. John's Church, Mortimer Common. It consists of the hall proper (40 ft. by 30 ft.), cloak-rooms, a small kitchen, and offices. There is seating accommodation for about 300. The architects were Messrs. Charles Smith & Sons, of Reading, and the builders Messrs. Mosdell, Son, & Lovell, of Mortimer.

DISTRICT COUNCIL OFFICES, HUNSLET.

The Hunslet Rural District Council have entered into possession of new offices in Leck-street, Hunslet. The plans for the new premises were prepared by Mr. B. W. Higgins, of Oulton, and the total cost, inclusive of site, is about 2,000*l.*

CHURCH HOUSE, LONG CRENDON.

A church house has been built at Long Crendon, Bucks. The work of erection was entrusted to Mr. W. J. Wilson, the architect being Mr. A. J. Webb.

HOSPITAL ENLARGEMENT, SALTAIRE.

Sir Titus Salt's Hospital, Saltaire, has undergone considerable alteration and enlargement. The extension has been effected by making the whole building one of three stories, whereas formerly it consisted partly of two stories and one story, in addition to the basement. The work has been carried out under the supervision of Messrs. W. Wilcock & Son, architects. The principal contractors were as follow:—Mason's work, Mr. G. W. Kemplay; joinery, Mr. Joshua Hobson; plastering,

Digitized by Google

Messrs. John Walsh & Sons; plumbing, Mr. S. Rushworth; slating, Mr. T. Thornton; painting and heating apparatus, Messrs. A. Bagnall & Sons; electric installation, Mr. R. Lindley, jun.; all of Shipley.

BRANCH OF HULL AND SCULCOATES DISPENSARY.

The foundation-stone has just been laid of the new western branch, to be erected in North Boulevard, of the Hull and Sculcoates Dispensary. The new building, which will cost over 2,000*l.*, is after the Italian Renaissance style, being executed in terra-cotta. It includes a large patients' hall, a consulting-room, dressing-room, and special provision for ophthalmic patients. The architect was Mr. H. Boden, and the builder Mr. P. T. Kettlewell.

ENLARGEMENT OF CONVALESCENT HOME, PORTHCAWL.

An extension of the Porthcawl "Rest" has just been opened by Viscount Tredegar. The "Rest," before its present additions were undertaken, provided accommodation for seventy men and forty women and children, a total of 110. The new buildings will add fifty-two more beds—twelve for women and forty for men. The erection of these buildings has cost 9,755*l.*, including furniture, and the contract has been carried out by Mr. F. Bond, Canton, Cardiff. The architect is Mr. E. M. Bruce Vaughan, F.R.I.B.A., Cardiff.

HOTEL, BUDE.

The foundation-stone of a new hotel at Bude was laid on the 16th inst. The hotel has been designed by Mr. Hatchard Smith, London, and will be built by Messrs. Pethic Brothers, Bude.

GARDEN CITY SCHEME, HEREFORD.

The Hereford Co-operative Society are carrying out a garden city scheme on property in Bewell-street. The roads are designed upon continental lines, the road itself being edged each side with a 7 ft. 6 in. wide strip of turf, in which trees are planted, and along the other side of this is a 5-ft. wide footpath. On no part of the estate are there more than twelve houses per acre, so there is no overcrowding. The cottages themselves are set back 15 ft. from the edge of the footpath; there is therefore a total width of 70 ft. from houses on one side of the road to houses on the other side. The cottages have walls of cement rough-cast, and the roofs are covered with Broseley tiles. The rents of the cottages built at present range from 4s. 9d., 5s. 3d., to 7s. 9d., including rates and taxes. Messrs. Groome & Bettington, of Hereford, are responsible for the plans.

YEAR'S BUILDING IN PAISLEY.

Dean of Guild M'Callum, at a recent meeting of Paisley Dean of Guild Court, made a statement regarding the building work in the town during the year ending October 31. There had been in all seventy-four linings disposed of by the Court, as compared with fifty-eight the previous year. The valuation of the various buildings was estimated at 90,260*l.*, giving an increase of 4,630*l.* over the year preceding. The classification of the property comprised fourteen four-story tenements, five three-story tenements, fourteen villas and cottages, halls, and public buildings. In addition to those cases, twenty-seven minor applications were disposed of by the master of works.

EDINBURGH BUILDING TRADE.

From a statement prepared by the Edinburgh Burgh Surveyors it appears that the total number of warrants granted from November, 1908, to October, 1909, was 699, being seventy-three less than last year; but the approximate value of the buildings amounted to 569,670*l.*, being an increase of 126,290*l.* over the previous year.

Sanitary and Engineering News.

STRANRAER HARBOUR IMPROVEMENTS.

The Town Council of Stranraer as Harbour Trustees have carried out the dredging of a portion of the harbour and the widening and repair of the west pier. Mr. E. Bannatyne, Irvine, secured the contract, which amounted to about 5,000*l.* The work was carried out to the designs and under the supervision of Messrs. Crouch & Hogg, C.E., Glasgow.

MONMOUTH VALLEYS WATER SCHEME.

After negotiations extending over the last two years, the Abertillery and Abercarn Urban District Councils have decided to go to Parliament next session with a Bill for the formation of a water board. The proposal is to take water from the Grwyne Fawr Valley, in Breconshire, and to convey it to the western valleys of Monmouthshire. The Bill to be promoted will provide for Risco or any other local authority joining the board if so desired. Messrs. Baldwin Latham and Rofe & Son, of Westminster, are the engineers for the scheme. The scheme is estimated to cost about 225,000*l.*

SEWAGE DISPOSAL SCHEME, HANFORD.

A Local Government Board inquiry into the application of the Stone Rural District Council for sanction to the borrowing of 5,000*l.* for the purposes of a sewerage and sewage disposal scheme for the village of Hanford, forming part of the parish of Trentham, was recently held by Mr. A. A. G. Malet, M.Inst.C.E. Mr. W. W. Wynne, Clerk, stated that a number of cheap schemes had been suggested without success. The last proposal that was put forward was refused by the Local Government Board, and the Council then placed the matter in the hands of Messrs. Willcox & Raikes, who had prepared the present scheme. Mr. H. R. Raikes explained the scheme, which provided for liquefying tanks and bacteria beds. Two-thirds of the sewage would be drained by precipitation to the works, and one-third, from the lower part of the village, would be pumped up to the works. Practically every house in Hanford would be dealt with, and he believed it to be the most efficient and economical scheme that could be adopted. The method of disposal would be similar to that adopted by most of the Potteries towns, and the purified effluent would be discharged into the Trent.

ANNAN DISTRICT WATER SCHEME.

The Annan District Committee of Dumfriesshire County Council have approved the scheme reported upon by Mr. James Watson, C.E., Bradford, and Mr. James Barbour, C.E., Dumfries, for the taking of a water supply for the Lower Annandale special water supply district from a reservoir of 60,000,000 gallons capacity, to be constructed on the River Mein at Torbeckhill, at a total estimated cost of 49,000*l.* They have decided to make application to the County Council for sanction to carry out the scheme.

NEW WATER SUPPLY, PENRITH.

Penrith's new supply of water from Hayeswater, among the hills to the south-east of Patterdale, was opened on November 4. The water has been brought into two reservoirs, one to supply the lower parts of the town, and the other the higher. The gravitating main is intercepted by two balancing tanks at elevations of 1,132 ft. and 984 ft., and discharges half a million gallons of water per day into the reservoirs. The contracts for the construction of the works were entered into with Messrs. A. E. Nunn & Co., London, and the undertaking has been completed in a little over a year, under the superintendence of Mr. George Stow, London, the contractors' managing engineer, with Mr. J. D. Latham as resident engineer. Mr. Baldwin Latham was the author of the scheme. The works of construction have cost, approximately, 34,500*l.*

SHREWSBURY WATER SUPPLY.

The purification of Shrewsbury's main water supply is now effected by means of the mechanical system of filtering invented by Messrs. Bell Brothers, of Raventhorpe, Yorks, an installation of which has just been made on a site adjoining the pumping-station, Coton Hill, at a cost of 5,200*l.* The installation has been made by Messrs. Bell. The building operations were carried out under the supervision of the Borough Surveyor, Mr. Eddowes, while Mr. A. Hewitt, Water Engineer, has superintended the mechanical part of the work, including the alteration of the mains to suit the new conditions.

THE ROYAL SANITARY INSTITUTE.

At an examination in Sanitary Science as Applied to Buildings and Public Works, held at Newcastle-on-Tyne on November 12 and 13, 1909, five candidates presented themselves, and the following candidate was granted a certificate:—Matthew Jamieson (South Shields).

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

Mr. L. Rome Guthrie, architect, has removed his offices from 3, Gray's Inn-place, Gray's Inn, to 13, John-street, Adelphi: Telephone number—1851 City.

EXHIBITION AT MUNICH OF MUSSULMAN ART.

An exhibition will be opened next year in Munich to demonstrate the influence exerted in the Middle Ages by Oriental art upon Western and Scandinavian art, and more particularly by that of Persia and Turkey, upon art in Russia and Poland and in Italy. Certain epochs are chosen; for instance, art under the Kaliffs until the middle XIIIth century, Moorish art in Spain and Northern Africa, and art in Sicily to the beginning of the XVIth century, and art in Turkey in the XVth and XVIth centuries.

HOUSES OF HISTORICAL INTEREST.

Memorial tablets have been affixed to No. 9 Arlington-street, where Charles James Fox lived for a while; No. 61, Greek-street, Soho, the home in his early life of Thomas de Quincey; and Macartney House, near Greenwich Park, where General Wolfe in his youth lived with his father. The *Jenaer Volksblatt* makes a timely protest against the wanton injury which is inflicted upon the apartment occupied in the Ritterhaus of Voburg by Martin Luther. The wall-plaster is disfigured with the scribblings and strippings of visitors, who, moreover, chip pieces off the bedstead, carve their names on the table, and commit other senseless mischief.

ESHER (OLD) PARISH CHURCH, AND CLAREMONT.

Proposals are made to collect a sum of some 300*l.* for the repair of the roof and general preservation of the old parish church of St. George, which for some time past has ceased to be used for worship, being replaced by the new church opposite Esher Green. The church, to which was bequeathed in the XVIth century much of the present Sandown Park racecourse, was formerly known as Sandon, or Sandy, Chapel. It contained an altarpiece of our Saviour painted by Sir Robert Ker Porter, K.C.H., 1837, a monument (1803) by Flaxman to the Honourable Mrs. C. Rose Ellis, of Claremont, and a marble figure, erected by Sir Francis Drake to the memory of his father Richard, equerry to Queen Elizabeth, since removed to the church which was built about forty years ago. The adjacent house was first built for his own occupation by Sir John Vanbrugh, who sold it to Thomas Holles, Duke of Newcastle, who named it Claremont, and added largely to the estate, employing Kent to lay out the grounds. Robert Lord Clive bought the property in 1766, and before setting out on his last voyage to India directed Lancelot Brown to pull down Vanbrugh's house and to remodel the grounds—in the result nearly 100,000*l.* was expended. In Richardson's "Vitruvius Britannicus," 1802, vol. i., which gives plans and elevations of Claremont, the authorship of the designs is ascribed to Holland and Brown jointly. The Crown bought Claremont for 69,000*l.* in 1816 for the Princess Charlotte, who died there on November 6, 1817. It has latterly been the home of Queen Victoria (in her girlhood), King Louis Philippe and Queen Amélie, the late Prince Leopold, and his widow, the Duchess of Albany.

AN INLAND WATERWAY FOR SWEDEN.

The Swedish Government has come to a decision on the question of connecting Lake Wener with the Cattegat by means of a canal of such dimensions as to take ships, and has laid the subject before Parliament. Several projects for the waterway had been drawn up. The one most favoured in military circles was that of a canal, 8 metres deep, connecting the Baltic and the Skager Rack, which would take 12,000-ton steamers. However, the Commission appointed by the Government decided on a 4-metre deep canal connecting the harbour of Gotenburg with the lake. This canal will cost 22,800,000 kronen, and give work to 1,300 men.

A WATERWAY BETWEEN THE BALTIC AND THE BLACK SEA.

The Russian engineer Ruschtekel has, on the lines of the Kiel Canal, made a project for an "Emperor Nicholas II. Canal," which, with a length of 100 kilometres, will connect the Duna with the Dnieper, and thus the Baltic with the Black Sea, thereby providing a way for ships independent of foreign waters. The project shows a depth of 9·2 metres and a bed 43 metres wide; numerous sluices, fed from Lake Goryon by another canal 100 kilometres long, would overcome the difficulty raised by the steepness of the watershed. The cost per kilometre is estimated at 460,000 francs, as against 1,870,000 francs per kilometre in the original Kiel canal. This waterway, 3,000 kilometres in length, would reduce the voyage for steamers from forty-five days *viâ* Gibraltar, to twelve days, the speed calculated being 10 kilometres per hour. The entire cost is estimated at 1,270 million francs.

THE ANCIENT CITY WALLS OF CONSTANTINOPLE.

It is reported that the Sultan contemplates demolishing the walls of Constantinople. This news moves Professor Cornelius Gurlitt to protest loudly in the name of all educated people of every country. The walls, especially on the land side, are archæological monuments of great importance. Built since 413, this colossal work stretches for 6·7 kilometres, with its 190 standing towers, its moat, and its arrangements for damming water. It is to be hoped that Gurlitt, the indefatigable student of architecture in Constantinople, will not have spoken in vain.

STATUES IN THE BOBOLI GARDENS, FLORENCE.

Four of the six great statues, known as the Prigioni, or Prisoners, have been removed

from the Boboli Gardens into the vestibule of the Cupola in the Academy at Florence. The statues, sculptured by Michelangelo, were intended for the tomb of Pope Julius II. at Rome; two of them, being the only two which Angelo finished, are in the Louvre; the four others will now be seen in conjunction with his "David," and "Genius Triumphant" and "St. Matthew" in the Academy.

ANCIENT BRITISH OAK STAKE.

To the many examples of oak of historical interest already contained in the museums at the Royal Botanic Gardens, Kew, one other of great local interest has just been added through the generosity of Mr. Montagu Sharp, D.L., in the form of an ancient British stake extracted from the bed of the Thames at Brentford. It is part of an oak sapling, is 3 ft. long and 15 in. in circumference, roughly pointed at the lower end, and black as ink. There is little sign of decay, though, in process of drying, through exposure to the air, rifts or splits down the way of the grain have appeared. The remainder of the sapling, which stood in and above the water, has, of course, long ago decayed or been broken off, but the stump owes its preservation to having been buried in the bed of the river. Its upper end, which projected a couple of inches above the bed, is frayed from contact with the dredger, or keels of passing vessels, and the action of river drift. *A propos* of this matter, the following note from Mr. Bunting, of the Thames Conservancy, written in 1903, may be quoted:—"The remains of the line of stake defence still exist in the bed of the river for about 400 yds. below Isleworth Ferry. It runs in a diagonal direction down stream from the Middlesex to the Surrey side, and their positions have been carefully ascertained. In the course of dredging, the stumps of many of the stakes have been extracted in the main channel, and those on the foreshore have been removed, as they became an obstruction or danger to navigation. The extracted stakes have from their appearance indicated that they have been tied or interlaced in some way or other." In Cæsar's description, B.C. July 54, there is this passage:—"Cæsar being aware of their plans, led his army to the Thames to the kingdom of Cassivellaunus. The river was passable on foot only at one place, and that with difficulty. . . . The bank also was defended with sharpened stakes fixed outwards, and similar stakes were placed under water and concealed by the river."

NEW HOUSES AND STREETS.

According to a report furnished by the Commissioner of Police, the number of new houses built in the Metropolitan Police District in the year 1908 was 13,377, as against 19,211 in 1907, 21,415 in 1906, 21,970 in 1905, 23,269 in 1904, 26,420 in 1903, 25,480 in 1902, and 27,174 in 1901. The total number of new houses built in the years 1880-1908, both inclusive, was 542,897. The number of new streets formed in the same period was 8,005, and of new squares twenty-three, the new streets and squares having an aggregate length of 1,493 miles 955 yards.

SCARBOROUGH SPA.

The *Yorkshire Herald* announces an extensive scheme to increase the attractiveness of the Spa at Scarborough, which has been submitted by Mr. J. Chapman, of Scarborough and Doncaster, a theatre proprietor. The scheme includes a new theatre, a skating-rink over the theatre for carnivals, and a roof garden, with kiosks on top of the skating-rink. A grand variety theatre is suggested in place of the Grand Hall, and there is also the provision of reading and writing rooms, and library, new refreshment and dining rooms, a new billiard-room, telegraph and telephone offices, plate-glass wind-screens for the promenade in inclement weather, an electric lift to the roof gardens, and a pierrot stage at the north end of the promenade.

ROYAL BOTANIC GARDEN LABORATORY, EDINBURGH.

A new laboratory building is being erected in Inverleith-row in connexion with the Royal Botanic Garden. The new building will contain on the ground floor a classroom, 61 ft. long by 29 ft. broad, a water culture-room, 27 ft. long by 20 ft. broad; also two photographic dark-rooms, dark culture-room, workshop and room for pathology and apparatus, while on the first floor will be placed the mycological laboratory, the photo-micrography-room, the studio, and rooms for research work, culture, sterilisers, and incubators. There is also an assembling hall, 41 ft. long by 15½ ft. broad, and here is situated the main staircase. A secondary staircase is being provided near the west end of the south wing. At present the north wing will not be erected. The plans have been prepared in, and the erection of the building is being supervised by, H.M. Office of Works, under the direction of Mr. W. T. Oldrieve, F.R.I.B.A.

CHURCH OF ST. ISHOW THE MARTYR, PARTRISHOW.

The Archdeacon of Brecon has lately re-opened after repair the church of St. Ishow the Martyr, Partrishow, lying 1,200 ft. high on the south slopes of the Black Mountain, Breconshire, and approachable only by a bridle path. The fabric consists of an eastern and western church, the wall between the two pierced only by a small opening fitted with an iron grille. The western church is a XIIIth century building complete with a fine contemporary roof. The eastern church has walls of a still earlier date, but most of its features, including the double bellcote, date from the early part of the XIVth century and later. It has a fine XVth century roof. The church possesses a magnificent rood loft in excellent preservation. The font is pre-Norman, inscribed "Menhir me fecit in tempore Qenillan"—*i.e.*, about 1060. There are three stone altars—one in the western and two in the eastern church. The fabric, which is built upon the steep slope of the hill, was in a perilous condition, and a sum of 1,300*l.* has had to be spent in careful reparation under the supervision of Mr. W. D. Caröe.—*The Times.*

A BOULEVARD BY THE WANDLE.

A project is in progress to greatly improve the Wandle in its lower reaches, and to plant trees and lay out a public walk by a reclamation of the mud-banks in Earlsfield, near Wimbledon and Wandsworth. It is proposed to straighten and widen a portion of the river's course, and so, by accelerating and extending its flow, to secure the removal of deposits and obviate the frequent flooding caused by obstructions.

AN OPEN SPACE FOR SHADWELL.

Proposals are made for converting a portion of the market area into an open space and for devoting the rest of the property to building purposes, mainly on behalf of working-class dwellings. The fish market was acquired by the Corporation of the City of London some years ago, at a cost of several thousand pounds, but did not prove to be a financial success.

A MARKET FOR SOUTH-EAST LONDON.

A Bill will be promoted in Parliament for the building and establishment, near Camberwell Green, of a market for the sale of meat, fish, fruit, vegetables, flowers, and general produce. The estimated cost of the venture amounts to more than 100,000*l.*

HAMILTON'S PATENT WINDOW FITTINGS.

This is one of the numerous contrivances for turning sash windows inward to clean them, but in simplicity of action and workmanlike character it is above the average. To open the lower sash the beading on the right-hand side, on moving a small catch, opens on a hinge, releasing the edge of the sash. On the left-hand beading are two small brass brackets, hinged back, and pulled out when required, and on the same side of the sash are small bracket pivots pointing downward to work in the hollow of the brackets. The sash is raised sufficiently to raise the pivots above the brackets, which are then pulled out and the sash lowered till the pivots rest on them; bracket and pivot then become a practical hinge, and the sash can be opened inward like a casement. The arrangement by which the right-hand sash-cord is automatically detached when the sash is opened, and attached again on closing it, is most ingenious and yet quite simple in its working; and nothing anywhere depends on the action of springs. The upper sash is removed in the same way, only that in that case alone the bead has to be slipped out instead of being hinged. We have examined a working model of the window, and recommend it as worth attention. The makers are Messrs. W. L. Hamilton & Co., of Birmingham.

PROPOSED ST. PAUL'S BRIDGE.

A special meeting of the Court of Common Council was held on Monday at the Guildhall to discuss the report of the Bridge House Estates Committee relating to bridge accommodation in the City. The Committee recommended (1) the construction of a new bridge at an estimated cost of 1,646,983*l.*; and (2) the reconstruction of Southwark Bridge to the width of Queen Street-place, at a probable expense of 261,000*l.*, it being understood that the alterations to Southwark Bridge should be proceeded with as soon as Parliamentary powers were obtained.—Mr. Deputy Algar, in moving the adoption of the report, said the Committee did not regard the widening of Southwark Bridge as a solution of the traffic question. The Royal Commission on London Traffic strongly advocated a new bridge, with a direct north to south thoroughfare. Southwark Bridge was not the place where the general north and south traffic could be relieved. With the rapidly changing conditions of modern locomotion and transit a new bridge with an adequate approach had become an urgent necessity.—Mr. W. W. Green moved as an amendment that the Court should agree only with as much of the Committee's report as related to the widening of Southwark Bridge.—Mr. Deputy Algar said that before the building of Tower Bridge there passed over London Bridge 22,000 vehicles a day. The daily number was now 23,000, and 14,000 passed over Tower Bridge—an increase of 15,000. He left them to imagine what London Bridge and its approaches would be like to-day if the Tower Bridge had not been built.—On a division the amendment was lost by ninety-five votes to sixty-one, and the Committee's report was carried.

THE WALL-PAPER MANUFACTURERS, LTD.

The Wall-Paper Manufacturers, Ltd., have reopened their Lincrusta-Walton Branch Showrooms, No. 1, Newman-street, Oxford-street, which has been entirely redecorated throughout, in illustration of the varied purposes to which Lincrusta-Walton and Cameoid frieze and ceiling panels can be put. The most interesting feature, however, is Metaxin, a new silk wall-paper, which will be on sale on and after January 1, 1910. Hitherto silk wall-papers have been mostly imported from abroad; the Wall-Paper Manufacturers, Ltd., are to be congratulated on the production of an article which should compete successfully with the foreign product. In appearance it is everything that could be desired, and is, besides, most moderate in price. Among other advantages it is claimed that it does not oxydise or turn black, as it contains no trace of metallic bronzes, and that the colourings are fast and washable. We have seen some specimens of various tints which certainly possess an effect exceeding near that of real silk.

A FERRO-CONCRETE ISLAND.

This application of ferro-concrete is one of great interest. The reason for such a peculiar construction is as follows:—Till quite recently the French Admiralty was dependent on foreign supply for its torpedoes. When Messrs. Schneider & Co. obtained the commission for furnishing such contrivances they cast about for a suitable site where torpedoes could be tested and regulated. The Mediterranean coast offered no spot where the sea bottom showed a uniform depth of 10-12 metres over a sufficient area, where the space was such that the discharge would not affect navigation, etc. Whereupon the company decided to build an artificial island in the Hyères Roads. The first project of a masonry structure, protected by a colossal masonry dyke, was abandoned in favour of a dyke that it would be possible to launch and sink like a vast caisson. This last idea was much more feasible than the first. The Hennibique Company, being asked to estimate for the work, suggested that the dyke was superfluous, given the principle of launching and sinking. It was therefore proposed to build the island itself like a large watertight caisson, which might be conveniently constructed in the Toulon roadstead and towed out to the site where it was to be sunk. This project economises both time and money to a considerable extent. The work was therefore forthwith put in hand. The construction is, broadly speaking, composed of a ferro-concrete caisson, 23·50 metres long by 16·80 metres wide by 15·50 metres high, supporting on its upper surface a structure 6 metres high. In the sides of the caisson is contrived a chamber for submarine torpedoes, while in the superstructure there is a similar chamber for torpedoes discharged in the open air.

EXCAVATIONS IN ITALY.

In Italy, close to the little town of Adria, which formerly gave its name to the Adriatic Sea, excavations have been in progress for some time. The work, directed by a commission of experts, has brought to light the ancient town of Adria, formerly a prosperous Etruscan seaport. It is said that the town was buried under alluvial deposits brought down by the floods of the Po and the Adige. The sea, which formerly bathed the town, has retired to a distance of about 40 kilometres. The matter was discussed for many years before the work was put in hand. Now it is carried on with great activity, and the commission expects to find archæological treasures of great value. It is even hoped to reconstruct the town as a whole, and to define its exact plan.

PORT OF LEGHORN.

Work at the small new dock to the north of the Madraccio basin proceeds but slowly, and no positive date is as yet assigned for its completion. The Italian Government have accepted a scheme for the enlargement and improvement of the Port of Leghorn, and have allotted a sum of 4,613,000 lire (184,520*l.*) for the purpose. It is proposed to build a mole in a straight

Digitized by Google

line, 765 yds. in length, to adjoin the present curvilinear mole of the outer harbour; also a mole, 1,557 yds. in length, starting from the Marzocco tower. These two moles will form a large outer basin. A quay is to be built on the seaward side of, and widening, the present Diga Rettilinea, and this new quay, along which the railway will run, will thus be within the new basin. The above-named sum does not provide for the very considerable dredging operations, for which the State has allotted a further 3,000,000 lire (120,000*l.*). It is chiefly the want of a suitable modern port which has hindered the expansion of the trade of Leghorn; indeed, when this and the other disadvantages under which the place has laboured are considered, its steady development year by year is proof of more than ordinary business energy, and would show that under more favourable conditions Leghorn might rise to a trading centre of first-class importance.

THE BERLIN ICE PALACE.

This building, opened last year, contains the largest artificial ice skating-rink in Europe. The hall is 60·5 metres long by 45 metres broad, and has a frozen surface of 1,900 sq. metres. The ice is 12 cms. thick lying on a concrete floor, separated from the ground by a layer 12 cms. thick of asphalt and cork. The building contains besides, refreshment-rooms, dressing-rooms, reception-rooms, gymnasium, engine-house, etc., and cost 2·25 million francs.

Stained Glass & Decoration.

MEMORIAL SCREEN, WARRINGTON.

An oak memorial screen has been erected in Warrington Parish Church. The design was prepared by Mr. Segar Owen, architect, Warrington, and the work executed by Messrs. James Hatch & Sons, of Lancaster.

Law Reports.

ACTION BY A BUILDER.

MR. JUSTICE SUTTON, in the King's Bench Division on the 16th inst., delivered a considered judgment in the case of Gray *v.* the Central London Properties Association, Ltd.

The facts of the case sufficiently appear from the following judgment.

His lordship said the plaintiff, Mr. Chas. Gray, a builder at Kensington, brought the action to recover from the defendants 12,500*l.* plaintiff alleged to be due from the defendants as an instalment on account of a contract to rebuild certain property in Hanover-square for 38,000*l.* It appeared that the contract was made through a Mr. Gilbert, and that the defendant Company was to advance the money as the building progressed. Mr. Gilbert became bankrupt, and as he had arranged mortgages on the property with the defendant Company it was contended that the Company were liable for the first payment of 12,500*l.*, which became due when the buildings reached a certain stage. On the other hand it was said that the building lease and other securities were now the property of Mr. Gilbert's trustee in bankruptcy, and that Mr. Gray was really only Mr. Gilbert's agent. Defendant Company had entered into an agreement to pay the plaintiff in all 25,000*l.*, secured on mortgage, and the whole dispute appeared to have arisen out of the bankruptcy of Mr. Gilbert. He (his lordship) had come to the conclusion that the agreement with the defendant Company was one for good consideration, and was irrevocable, and not affected by the bankruptcy of Mr. Gilbert. He therefore gave judgment for the plaintiff for 12,500*l.*, with interest at 5 per cent., and costs.

Mr. Hastings (with him Mr. Rufus Isaacs, K.C.), on behalf of the defendant Company, applied for a stay of execution with the view to an appeal.

Mr. Disturnal (with him Mr. Montague Lush, K.C.), representing the plaintiff, said that it would be a very great hardship to keep the plaintiff out of his money any longer. He asked his lordship not to grant the application.

His lordship refused to grant a stay of execution.

Later in the day Mr. Rufus Isaacs applied (*Ex parte*) to the Court of Appeal, consisting of Lords Justices Vaughan Williams, Buckley, and Mr. Justice Swinfen Eady, on behalf of the defendants, for a temporary stay of execution pending the service on the other side of notice of motion by way of appeal from that part of Mr. Justice Sutton's judgment refusing the stay.

Their lordships granted the application.

STREATHAM BUILDING DISPUTE.

IN the Chancery Division, on the 12th inst., the case of Willé *v.* St. John and others came before Mr. Justice Warrington—an action by the plaintiff against the defendants for a mandatory injunction compelling them to pull down certain buildings. There was an alternative claim by the plaintiff for damages.

The facts of the case were as follows:—In April, 1903, 14 acres of the Du Cane Estate at Streatham were conveyed to the defendant, Mr. Montagu Holmes, by the then owner, and the deed of conveyance contained a covenant by Mr. Holmes with the vendors that he would observe the stipulations contained in a schedule to the conveyance. So as to bind the purchaser's heirs or assignees, one of the stipulations in question was that no building should be erected upon any part of the land thereby conveyed other than private dwelling-houses. Mr. Holmes, on May 13, registered himself as the proprietor of the land thereby conveyed at the Land Registry, but at that time no mention was made on the register of any restrictive conditions. In April, 1905, Mr. Holmes conveyed to the plaintiff a plot, part of the 14 acres, the plaintiff covenanting with his vendor to observe the restrictions contained in the deed of 1903 as to the erection of buildings upon the land, and plaintiff also entered into further restrictive conditions which had not been included in the conveyance to Mr. Holmes from his vendors. On the same day—April 6—Mr. Holmes placed on the register in respect of the 14 acres the restrictive conditions contained in the deed of 1903 under the provisions of the Land Transfer Acts. The transfer of the plaintiff's plot was registered on April 12, 1905, and upon the register were inserted the restrictions effected by the obligations contained in the deed of transfer to the plaintiff as affecting the plaintiff's particular plot. In July, 1907, Mr. Holmes transferred to the other defendants a plot which adjoined the plaintiff's plot for the purpose of the erection of a Roman Catholic church and priests' house, the deed of conveyance containing a covenant by Mr. Holmes that he would not object to a church being erected upon the land if the purchasers thought fit to erect one, and as the church and priests' house had since been erected the plaintiff brought the present action, claiming the relief before stated.

Mr. F. Watt and Mr. E. L. Hopkins appeared for the plaintiff; and Mr. Rowden, K.C., Mr. A. Adams, and Mr. P. S. Stokes for the defendants.

Mr. Watt contended, on behalf of the plaintiff, that in the circumstances the land in question could be said to form part of a building estate, and that the plaintiff was therefore entitled to enforce the restrictive conditions against the defendants.

Without calling upon counsel for the defendants, Mr. Justice Warrington held that there was nothing from which the Court could infer a building scheme in the present case. That being so, the case did not come within that class of case in which one purchaser could enforce restrictive conditions against another. He thought, therefore, that the action failed, and should be dismissed with costs.

Patents.

APPLICATIONS PUBLISHED.*

19,858 of 1908.—Edward Victor Rumsey: Combined paint mixer and sieve.

22,071 of 1908.—John Herbert Preston: Pivot for window sashes and the like.

22,155 of 1908.—Robert Frank Pochin and Harry Simpson Pochin: Appliances for elevating and conveying stone, ores, coal, and other minerals and materials.

22,502 of 1903.—Edwin Alfred Allen: Door and like knobs.

22,594 of 1908.—Percy Richard Julius Willis: Excavating machines.

24,115 of 1908.—Theodor Lehmann: Reinforced brick walls.

27,194 of 1908.—Charles Barron: Fastenings or catches for sliding doors, and the like.

27,331 of 1908. — George Harrington: Machines for bevelling, smoothing, and polishing glass plates.

27,883 of 1908.—Ozonair, Ltd., and Edward Lionel Joseph: Ventilating buildings.

28,097 of 1908.—George Ferguson: Ballcocks and float-valves.

155 of 1909.—Mark Purser: Gates.

1,701 of 1909.—Max Hasenkämper: Hinges.

2,903 of 1909: Richard Henry Albery: Shop door, burglar, or the like alarm devices.

4,196 of 1909.—Percy Chick: Means of connecting and joining sewerage, gas, and water pipes, mains, and branches, and stop ends to same.

4,699 of 1909.—Rudolph Sedlaczek Blome and William Joseph Sinek: Concrete pavements.

5,185 of 1909.—Harry William Smart, Charles Thomas Gann, and John Wark: Window-sash fasteners.

6,299 of 1909.—Sanfrid Wilgott Berglund: Fireproof stone, and process of manufacturing the same.

8,719 of 1909.—Peter Friederick Augenbraun: Locks or latches.

9,542 of 1909.—Charles Louis Cuthbe: Treads for floors or stairs.

11,379 of 1909.—Albert Graba: Method of jointing hollow-apertured bricks.

11,468 of 1909.—Thomas John Palmer: Moulding for use as a cornice, and for analagous purposes.

15,164 of 1909.—Gustavus Ferdinand Metzger: Manufacture of cement from blast-furnace slag.

15,573 of 1909.—François Georges Eugene Marie Pagé: Safety-guards for grindstones.

17,245 of 1909.—William Henry Baxter: Machinery or apparatus employed for screening stone, ore, and like material.

17,423 of 1909.—William John Stewart: Hollow reinforced concrete beams, and the moulding thereof.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

November 8.—By DREWEATT & WATSON (at Newbury).

Newbury, Berks.—London-rd., The Limes, f. ..	£600

November 10.—By DAVID BURNETT, SON, & BADDELEY.

Stoke Newington.—87, Spencer-rd. (off-licence), u.t. 45 yrs., g.r. 30*l.*, p.	550
Walworth.—71, Orb-st., f., w.r. 20*l.*	220

By DUDLEY W. HARRIS & CO. (at Feltham).

Feltham, Middlesex.—1 and 2, Malvern-villas, f., w.r. 41*l.* 12s.	480

November 11.—By FAREBROTHER, ELLIS, & CO.

City.—149 and 150, Leadenhall-st., f.g. rents 550*l.*, reversion in 44 yrs.	20,000

By HOLCOMBE, BETTS, & WEST.

Battersea.—78, Falcon-rd. (s.), u.t. 39½ yrs., g.r. 7*l.*, y.r. 65*l.*	550

By C. C. & T. MOORE.

Poplar.—Brunswick-rd., f.g.r. 10*l.*, reversion in 29½ yrs.....	580
Burcham-st., f.g.r. 7*l.*, reversion in 29½ yrs. ..	375
Willesden.—178 and 180, High-rd. (s.), u.t. 70 yrs., g.r. 12*l.* 12s., y and e.r. 110*l.*	705
Stratford.—21, Heyworth-rd. (s.), f., w.r. 31*l.* 4s.	225
Manor Park.—98, First-av., f., w.r. 31*l.* 4s.	280

By NEWBON, SHEPHARD, & EDWARDS.

Bow.—33 to 39 (odd), Palm-st., u.t. 23½ yrs., g.r. 12*l.* 12s., w.r. 140*l.* 8s.....	420
Millwall.—10, West Ferry-rd., f., y.r. 30*l.*.....	325
Islington.—38, Halliford-st., u.t. 36 yrs., g.r. 6*l.*, y.r. 42*l.*.....	230

By STIMSON & SONS.

Wickford, Essex.—Wickford Mount Estate, 21 acres, f.	1,950
Brixton.—31 and 47, Geneva-rd., u.t. 57 yrs., g.r. 12*l.*, w.r. 96*l.* 4s.	370
Clapham.—Perseverance-gr., Nelson's-yard, f., w.r. 31*l.* 4s.....	300
Fulham.—162A, Estcourt-rd., c., w.r. 33*l.* 16s..	315
35, Strode-rd., u.t. 65¼ yrs., g.r. 6*l.*, w.r. 28*l.* 12s.	155
Anerley.—28 to 36 (even), St. Hugh's-rd., u.t. 58 yrs., g.r. 25*l.*, w.r. 128*l.* 14s.....	190
Norwood.—74, Penge-rd., u.t. 57 yrs., g.r. 9*l.*, e.r. 36*l.*.....	100

November 12.—By A. G. BONSOR.

Epsom.—Downs-rd., The Uplands, f.....	1,150

By GARRETT, WHITE, & POLAND.

Whitechapel.—27, Whitechapel-rd., and 26, Old Montague-st., area 7,000 ft., f., p.....	2,275

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns for gardens; yd. for yard; gr. for grove; b.h beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	7	0	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	" delivered
Flettons.....	1	5	0	" at railway depôt.
Best Fareham Red	3	12	0	" " "
Best Red Pressed Ruabon Facing..	5	0	0	" " "
Best Blue Pressed Staffordshire ...	3	15	0	" " "
Do. Bullnose	4	0	0	" " "
Best Stourbridge Fire Bricks	3	14	0	" " "

PRICES CURRENT.—*Continued on page 570*

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xviii.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

NOVEMBER 24.—**Bury.**—LAYING-OUT GARDEN CITY SUBURB.—The Bury Housing and Town-Planning Association offer three prizes for a design for laying-out a garden city suburb. For further particulars see advertisement in our issue of October 30.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

NOVEMBER 30.—**Workington.**—SCHOOL.—The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. For further particulars see advertisement in our issue of October 30.

DECEMBER 1.—**Bangor.**—LAYING-OUT A PARK.—The U.D.C. of Bangor (Co. Down) invite a scheme for the laying-out of a public park, 30 acres in extent, on ground acquired by them within their District. A premium of 30*l.*, to include all expenses, will be paid to the person whose scheme may be selected. Mr. J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.

DECEMBER 1.—**Tralee.**—PROPOSED CARNEGIE LIBRARY AND TECHNICAL SCHOOL.—The U.D.C. propose erecting this building, at a cost not exceeding 4,500*l.*, and invite competitive designs for same, according to "Instructions and Conditions," copies of which may be had by intending competitors on application to the Town Clerk, Tralee. Prizes of 20*l.* and 10*l.* to be awarded to the designs placed first and second by the assessor.

* DECEMBER 3.—**Otley.**—SCHOOL.—The Governors of Prince Henry's Grammar School, Otley, invite designs and estimates for new school buildings. See advertisement in this issue for further particulars.

DECEMBER 3.—**Royal Leamington Spa.**—PUMP ROOM EXTENSION.—The Council offer a prize of 10*l.* for the best design for an extension to the cooling room at the Pump Room and Baths. Full particulars may be obtained on application to Mr. Leo. Rawlinson, Town Clerk.

* DECEMBER 17.—**London.**—DESIGN FOR A FACADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See October 2 and 23, also advertisement in this issue for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1.—**Oldham.**—PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 22.—**Bedlinog.**—HOUSES.—Erection of sixteen or more semi-detached houses at Bedlinog, for the Bedlinog Hall Workmen's Building Club. Plans, etc., can be obtained at the office of Mr. Treharne Jones, architect and surveyor, Station-road, Nelson.

NOVEMBER 22.—**Castlerahan.**—PIERS AND GATES.—The Council invite tenders for the erection of piers and gates at the various labourers' plots throughout the district, in accordance with the specification prepared by Mr. Michael Grace, jun., Council's Engineer, which can be seen at District Council Offices, Oldcastle Workhouse.

NOVEMBER 22.—**Exmouth.**—POST-OFFICE, ETC.—New General Post-office, together with a block of three shops and dwelling-houses, at Exmouth, for Messrs. Blackmore & Sons. Names to Mr. Ernest E. Ellis, architect, 44, Polsloe-road, Exeter, and Exmouth, with a deposit of 2*l.* 2s.

NOVEMBER 22.—**Manchester.** KITCHEN. The Sanitary Committee invite tenders for the construction of a lodgers' kitchen at Walton House, Harrison-street. Specifications, etc., may be obtained at the office of the City Architect, Town Hall, upon payment of 1*l.* 1s. All cheques or postal orders are to be made payable to the order of "The Manchester Corporation."

NOVEMBER 22.—**New Windsor.**—ALTERATIONS TO CORN EXCHANGE.—The T.C. of the Borough of New Windsor invite tenders for the alterations at the Corn Exchange, Guildhall, Windsor. The plan, etc., may be seen, and form of tender obtained, upon application at the office of the Borough Surveyor, Mr. E. A. Stickland, 16, Alma-road, Windsor.

NOVEMBER 22.—**Slaithwaite.**—STABLE, ETC.—Masons', bricklayers', carpenters' and joiners', plumbers' and glaziers', slaters' and plasterers', and painters' work required in the erection of stable, coach-house, etc., at Calf Hey, Slaithwaite. Plans may be seen, and quantities obtained from Mr. Joe Ainley, architect and surveyor, Slaithwaite.

NOVEMBER 23.—**Linthwaite.**—HOUSE.—Dwelling-house at Causeway-side, Linthwaite. Plans may be seen, and quantities obtained from Mr. Joe Ainley, architect and surveyor, Slaithwaite.

NOVEMBER 23.—**Sheffield.** GANGWAYS.—The Tramways Committee invite tenders for the erection of suspended gangways at Tinsley Car Depot. Drawings may be seen, and bills of quantities, etc., obtained, on application to the City Architect, Town Hall, Sheffield.

NOVEMBER 24.—**Coventry.**—PUBLIC ELEMENTARY SCHOOL IN BROAD-STREET.—The Corporation of Coventry invite tenders for the erection of a new school. Drawings, etc., may be inspected at the office of the architects, Messrs. G. & I. Steane, 22, Little Park-street, Coventry. Forms of tender, etc., may be obtained on payment of 1*l.* 1s. at the Education Offices, Priory-row, Coventry.

NOVEMBER 24.—**Cowdenbeath.**—POST-OFFICE, ETC.—Various works in connexion with the erection of new post-office and dwelling-houses in Union-street, Cowdenbeath. Plans, etc., may be seen by applying to Mr. D. E. Walker.

NOVEMBER 24.—**Halifax.**—ADAPTATION.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of premises in Portland-street, Halifax, for a Labour Exchange. Drawings, etc., may be seen on application to the Postmaster, Head Office, Halifax.

NOVEMBER 24.—**Mirfield.**—SCHOOLS.—Erection of new Wesleyan Schools, Knowle, Mirfield. The drawings, etc., may be seen, and quantities obtained, at office of Mr. D. K. Lobley, architect and surveyor, 58, Alexandra-crescent, Dewsbury.

NOVEMBER 25.—**Bridlington.**—RESIDENCE.—Erection and completion of a detached residence, Belgrave-road, for Mr. H. Abel. Drawings, etc., may be inspected at the office of Mr. J. Earnshaw, architect, Carlton House, Bridlington.

NOVEMBER 25.—**Dunfermline.**—OFFICES.—Estimates wanted for mason, joiner, plumber, plaster, slater, and tile works of proposed offices, Victoria-street, Dunfermline, for the Fife Miners' Association. Plans may be seen, and schedules of quantities obtained, from Mr. John Houston, architect, St. Margaret-street, Dunfermline.

NOVEMBER 25.—**Pendoylan.**—FARMHOUSE.—Taking down, altering, and rebuilding the farmhouse at Llanerch, Pendoylan. Also for providing a water supply for the house, for Lady Price-Fothergill, of Hensol Castle. Plans, etc., may be seen upon application to Mr. Gomer S. Morgan, surveyor, Pontyclun.

NOVEMBER 26.—**Blaenrhondda.**—EXTENSION OF CHAPEL.—Extension of Calfaria Baptist Chapel, Blaenrhondda, for the Trustees. Plans, etc., may be seen, and forms of tender obtained, at office of Mr. W. D. Morgan, M.S.A., architect, 194, Ystrad-road, Pentre.

NOVEMBER 26.—**Elland.**—WORKROOM.—Two-storied workroom in Dewsbury-road, Elland. Plans, etc., can be seen at offices of Mr. H. Thompson, architect, Southgate-chambers, Elland.

NOVEMBER 26.—**Grantown.**—VILLA.—Estimates are wanted for mason, carpenter, plumber, slater, plasterer, and painter works of a villa to be erected near Grantown. Plans, etc., may be seen at the Strathspey Estate Office.

NOVEMBER 27.—**Bilton, Harrogate.**—SCHOOL.—Harrogate Education Committee invite tenders for the several works required in the erection of an infants' school at New Park, Bilton, Harrogate. Plans may be seen, and quantities obtained, at the office of Mr. F. Bagshaw, Borough Engineer, Municipal Offices, Harrogate.

NOVEMBER 27.—**Halifax.**—SANITARY BLOCK.—Works required to be executed in connexion with the erection of sanitary block at the Halifax Union Workhouse. Drawings, etc., will lie for inspection, and bills of quantities may be obtained, at offices of Messrs. Clement Williams & Sons, architects, Post office-buildings, Commercial-street, Halifax.

NOVEMBER 27.—**Harrogate.**—SCHOOL EXTENSIONS.—Harrogate Secondary School committee invite tenders for the several works required in the erection of extensions and alterations to the secondary schools, Harrogate. Plans may be seen, and quantities obtained, at the office of the Borough Surveyor, Municipal Offices, Harrogate.

NOVEMBER 29.—**Cardiff.**—COTTAGES.—The Corporation of the City of Cardiff invite tenders for the erection of fourteen cottages, etc., at Capel Llanilltern, near Creigiau, Llantrissant, Glamorganshire. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. Wm. Harpur, M.Inst.C.E., City Engineer.

* NOVEMBER 29.—**Croydon.**—HOSPITAL EXTENSIONS.—The Croydon R.D.C. invite tenders for additions to Isolation Hospital, near Mitcham Junction, Surrey. See advertisement in this issue for further particulars.

NOVEMBER 29-DECEMBER 15.—**Mitcham.**—ADDITIONS TO HOSPITAL.—Croydon R.D.C. invite tenders for certain additions to Isolation Hospital, near Mitcham Junction, Surrey. All applications must be made in writing to Mr. Robert Masters Chart, F.S.I., Surveyor to the Council, and must be accompanied by a 5*l.* Bank of England note.

NOVEMBER 30.—**Aviemore.**—MOTOR GARAGE.—The Aviemore Station Hotel Company, Ltd., invite tenders for the erection of a new motor garage, with upper story for chauffeurs, and also of new cellar, at their hotel at Aviemore, Inverness-shire. For particulars apply to Messrs. Baillie & Gifford, Secretaries, 12, Hill-street, Edinburgh.

NOVEMBER 30.—**Clay Cross.**—ADDITIONS TO SCHOOLS.—Erection of additions to the Primitive Methodist Sunday Schools, Clay Cross. Plans, etc., at Mr. I. Hatton's, Lower Market-street, Clay Cross. For bill of quantities and other information apply Mr. H. Harper, architect, 54, Long row, Nottingham.

NOVEMBER 30.—**Grantown.**—VILLA.—Mason, carpenter, slater, plasterer, and painter works of a villa to be built in Grantown. Plans, etc., to be seen with Mr. James Gilbert, The Square, Grantown.

NOVEMBER 30.—**Guernsey.**—ALTERATIONS.—Tenders are invited for the carrying out of alterations, etc., in connexion with the transformation and sanitation of the Country Hospital. For plans, etc., apply to the President, Mr. Thomas Robin.

DECEMBER 1.—**East Ayton.**—SCHOOL ADDITIONS.—North Riding of Yorkshire C.C. Education Committee invite tenders for the work proposed to be executed in connexion with certain alterations and additions at East Ayton Council School. Plans, etc., on application at the school during ordinary school hours.

DECEMBER 1.—**Kingstown.**—HOUSES.—The Kingstown U.D.C. invite tenders for the construction of sixteen houses to be built at Paradise-row. The plans, etc., can be inspected at the Surveyor's Office, Town Hall, each day between the hours of 10 a.m. and 2 p.m. The sum of 1*l.* will be charged for each bill of quantities. The Council invite tenders for the construction of additions to the caretaker's apartments at the Royal Victoria Baths in accordance with plans, etc., which can be examined at the Surveyor's Office. They also invite tenders for the construction of two shelters (Nos. 1 and 3) at the new park.

* DECEMBER 1.—**S. Tottenham.**—ENLARGING SORTING OFFICE.—The Commissioners of H.M. Works invite tenders for enlargement of the S. Tottenham Sorting Office. See advertisement in this issue for further particulars.

* DECEMBER 2.—**Saffron Walden.**—SWIMMING BATH.—The Saffron Walden B.C. invite tenders for a Public Swimming Bath in Hill-street, Saffron Walden. See advertisement in this issue for further particulars.

DECEMBER 2.—**St. Agnes, Truro, etc.**—FARM BUILDINGS.—The Small Holdings Committee of the Cornwall C.C. invite tenders for the following works:—Coosewartha Farm, St. Agnes—New farmhouse; Besore Farm, Kenwyn, Truro—New farmhouse and two new sets of farm buildings, together with a new water supply for the same, and repairs and alterations to cottage at Lower Besore; Little Halvosso Farm, Mabe; new piggery, etc. For plans, etc., apply to the County Land Agent, Public Rooms, Truro.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

✱ DECEMBER 7.—**Bromley.**—FIRE-STATION, ETC.—The Bromley B.C. invite tenders for a new fire-station and a mortuary. See advertisement in this issue for further particulars.

DECEMBER 8.—**Abertridwr.**—LIBRARY, ETC.—Erection of a proposed Workmen's Library and Institute at Abertridwr. Plans, etc., may be seen, and bills of quantities obtained, on payment of a deposit of 3*l.* 3s., on application to Mr. Illtyd Thomas, F.S.I., 17, Quay-street, Cardiff.

✱ DECEMBER 10. — **Epsom.** — FIRE-STATION.—The Epsom U.D.C. invite tenders for a fire-station at Church-street, Epsom. See advertisement in this issue for further particulars.

✱ DECEMBER 10.—**Walthamstow.**—FIRE-STATION.—The Walthamstow U.D.C. invite tenders for a fire-station in Wood street, Walthamstow. See advertisement in this issue for further particulars.

DECEMBER 13.—**Dipton.**—COTTAGES.—Erection of fifteen cottages at Dipton, for the Durham Aged Miners' Homes Committee. Plans may be seen at the South Medomsley Colliery Office, Dipton.

✱ DECEMBER 15.—**Stoke-upon-Trent.**—TOWN HALL EXTENSION.—The Stoke-upon-Trent B.C. invite tenders for erection and completion of the Town Hall extension, Stoke-upon-Trent. See advertisement in this issue for further particulars.

NO DATE. — **Cork.** — CLASSROOMS.—The Governing Body, University College, Cork, invite tenders for building a block of classrooms. Plans may be seen, and all particulars obtained, on application to the architect, Mr. Arthur Hill, B.E.

NO DATE.—**Keady.**—REPAIR OF HOUSE.—Tenders are invited for the repair of Dundrum House, Keady. Copy of specification can be had on application to Mr. J. H. M. Wilson, C.E., Monaghan.

NO DATE.—**Queenborough.**—BUILDING.—Reinforced brick building with ferro-concrete piers. For full particulars apply to the Sheppy Glue and Chemical Works, Ltd., Queenborough.

NO DATE.—**Wantage.**—ADDITIONS TO CHURCH OF ENGLAND SCHOOL.—Names to the architect, Mr. J. Wightman Douglas, 1, St. Nicholas-buildings, Newcastle-on-Tyne.

NO DATE.—**Whitby.**—RESTORATION.—Restoration of No. 2, Golden Lion-bank, Whitby, for Capt. C. Vasey. Copy of bills of quantities on application to Mr. Harold G. Walker, architect and surveyor, Golden Lion-bank, Whitby.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 22.—**London.**—RAILS, ETC.—The Board of Directors of the Burma Railways Company, Ltd., invite tenders for the supply of 395 tons steel rails, 50 lb. per yard; 1,562 pairs steel fishplates. For the specification a fee of 20s. will be charged, which will not be returned. Mr. W. Home, Managing Director, 109, Gresham House, Old Broad-street, E.C.

NOVEMBER 22.—**Nottingham.**—BOILERS, ETC.—The Education Committee invite tenders for providing and fixing boilers and heating apparatus at Carlton-road Council School (all departments). Plans may be seen at, and copies of specification, etc., obtained from, the office of the City Architect, Mr. Frank B. Lewis, Guildhall, on payment of a deposit of 1*l.* 1s.

NOVEMBER 22.—**Stone.**—HANDFORD SPECIAL DRAINAGE DISTRICT: SCAVENGING.—The Council invite tenders for the removal of house refuse from premises and for the cleansing of earth closets, privies, ashpits, and cesspoo's within the Hanford Special Drainage District. Mr. J. Buckley Norris, Clerk, 21, High-street, Stone.

NOVEMBER 23. — **London.** — BRIDGEWORK. — The Mexican Railway Company, Ltd., invite tenders for the supply and delivery of bridgework. Specifications, etc., can be obtained at the company's offices on payment of 15s. each, between the hours of 10 a.m. and 3 p.m., Saturdays excepted. Mr. B. E. Holloway, Secretary, the Mexican Railway Company, Ltd., 6, Broad-street-place, E.C.

NOVEMBER 23. — **Nottingham.** — HEATING APPARATUS.—For heating apparatus at the test house at Bagthorpe Workhouse, for the Board of Guardians. Specifications, etc., may be obtained on application to Mr. Arthur Marshall, A.R.I.B.A., architect, King-street, Nottingham.

NOVEMBER 25. — **Glasgow.** — RIVER WALLS OR EMBANKMENT.—The Corporation invite tenders for the several works required in the repair of the embankment on the south side of the River Clyde in front of Oatlandsbank Recreation Ground. Plans, etc., may be seen, and specifications, etc., obtained, on application to the City Engineer at his office, City Chambers, 64, Cochrane-street.

NOVEMBER 27.—**Redruth.**—PUMPING MACHINERY.—Redruth U.D.C. invite tenders for suitable machinery to pump 150,000 gallons of water per day of twenty-four hours from a shaft 40 fathoms deep, situate at their Sandy-lane pump station. Any information may be obtained from the Council's Surveyor, Mr. H. D. Strange, Engineer's and Surveyor's Office, Redruth.

DECEMBER 1.—**North Dublin.**—ELECTRIC LIGHTING.—The North Dublin Board of Guardians invite tenders for the wiring and fittings for electric lighting of the Workhouse buildings, nursing sisters' residence, and North City dispensaries. Plans, etc., may be inspected at the office, North Brunswick-street, Dublin, by appointment, or copies of either may be obtained from the consulting engineer, Mr. Louis J. Lawless, A.I.E.E., 27, Castlewood-avenue, Rathmines, on payment of the cost of production.

✱ DECEMBER 1.—**Pontypridd.**—IRON BUILDINGS.—The Guardians of the Pontypridd Union invite designs and tenders for erection of iron buildings on a site in Court House-street, Pontypridd. See advertisement in this issue for further particulars.

DECEMBER 3.—**Heybridge.**—BRIDGE.—The Essex C.C. invite tenders for taking down and rebuilding Wave Bridge, over the Chelmer and Blackwater Navigation, at Heybridge, near Maldon. Plans, etc., can be seen, and specification, etc., obtained, at the County Surveyor's office, Tindal-square, Chelmsford.

MISCELLANEOUS.

NOVEMBER 22.—**Oldcastle.**—PUMP.—The Board of Guardians invite tenders for putting the Workhouse pump in proper working order, in accordance with the specification of Mr. Michael Grace, jun., the Board's Engineer, which can be seen at the Board-room, Oldcastle Workhouse, during office hours.

NOVEMBER 22. — **Soulcoates.**—SCAVENGING.—The R.D.C. invite tenders for the collection of nightsoil and refuse matter from the dwelling-houses and premises in the Parish of Sutton. Forms of tender, etc., from Mr. Jas. Fras. Robinson, Clerk to the Council, 4, Parliament-street, Hull, or the Council's Inspector, Mr. A. J. Hocken, Northfield, Hessle.

NOVEMBER 22.—**Warrington.**—FURNITURE.—The Education Committee invite tenders for the supply of some items of furniture and for the execution of general joinery work (Technical Institute extension). Forms of tender may be obtained from Mr. J. Moore Murray, Education Office, Sankey-street.

NOVEMBER 23. — **Alfreton.** — SCAVENGING.—The Alfreton U.D.C. invite tenders for scavenging districts. Conditions, etc., may be obtained on application to Mr. J. Spencer, Sanitary Inspector, Council Offices, Alfreton.

NOVEMBER 24. — **Audenshaw.** — SCAVENGING.—Audenshaw U.D.C. invite tenders for the removal of nightsoil and other refuse. Printed forms of specifications, etc., can be had on application at the Council Offices, 2, Guide-lane, Audenshaw.

NOVEMBER 24.—**Driffield.**—IRON FENCING.—The Highways Committee of the Driffield R.D.C. invite tenders for about 76 yds. of continuous iron fencing, to be delivered at Driffield Station. Specification may be seen, and any further information obtained, upon application to Mr T. Casson Beaumont, surveyor, Driffield.

NOVEMBER 24. — **Wakefield.**—DESKS.—The West Riding Education Committee invite tenders for the supply of dual desks for infants for a period of twelve months. Full particulars may be obtained on application to Mr. J. W. Horne, Education Department (Elementary Branch), County Hall, Wakefield.

NOVEMBER 24.—**Wakefield.**—FURNITURE.—The West Riding of Yorkshire C.C. Education Committee invite tenders for the supply of furniture during a period of twelve months. Full particulars may be obtained from the Education Department (Elementary Branch), County Hall, Wakefield.

NOVEMBER 24.—**Whitchurch, Cardiff.**—UNCLIMBABLE FENCING.—The Corporation invite tenders for the manufacture and erection at the Mental Hospital, Whitchurch, of about 110 lin. yds. of unclimbable steel angle-bar fencing and gate. Drawings, etc., may be seen at the office of the City Engineer, City Hall, Cardiff.

NOVEMBER 29.—**Stone.**—FURNITURE.—Stone Joint Hospital Board invite tenders for the supply of furniture for their new isolation hospital at Yarnfield, near Stone. A list of the furniture required can be obtained from Mr. W. Watkyn Wynne, Clerk, 21, High-street, Stone.

NOVEMBER 30.—**Malling.**—SCAVENGING.—Malling R.D.C. invite tenders for scavenging Parish of Wouldham, Parishes of East Malling and Ditton, and Parish of West Malling. Full particulars and conditions can be obtained upon application to Mr. C. Souter, Inspector of Nuisances, West Malling.

DECEMBER 2.—**Alnwick.**—GUTTERS.—Proposed new gutters at the Alnwick Union Workhouse, where the specifications may be seen. Mr. M. Temple Wilson, M.R.S.I., architect and surveyor, Alnwick.

DECEMBER 4.—**Winterton.**—SCAVENGING.—Winterton U.D.C. invite tenders for the weekly scavenging of 230 pan closets in the above district for a period of one year. Mr. W. Holgate Cross, Clerk, Winterton.

DECEMBER 6.—**Kirkburton.**—DRYING HORSES.—The Storthes Hall Asylum Sub-Committee invite tenders for installing twenty-seven additional drying horses in the laundry at the Storthes Hall Asylum, Kirkburton, near Huddersfield. Specifications and further particulars can be obtained on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

PAINTING, etc.

NOVEMBER 22.—**Bradford.**—PAINTING.—Painting, colouring, etc., at various schools in the City. Specification, etc., may be obtained at the City Architect's office, Whitaker-buildings, Brewery-street, Bradford.

NOVEMBER 23.—**Leeds.**—PAINTING.—Painting the interior and exterior of the Public Baths at Union-street, Holbeck, and Kirkstall-road. The specification may be seen, and forms of tender obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings.

NOVEMBER 23-30.—**Leyton.**—CLEANSING, PAINTING, ETC.—Leyton U.D.C. invite tenders for the cleansing, painting, and repairs at two schools, and for other works. Specifications, etc., may be obtained on written application to Mr. William Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C. (the Committee's Architect), accompanied by a deposit of 1*l.* (cheques will not be accepted).

NOVEMBER 23.—**Steyning.**—PAINTING, ETC.—The Guardians invite tenders for painting and distempering at the Children's Homes, situate at New Shoreham. Specification may be obtained on application to Mr. Arthur Flowers, Solicitor and Clerk to the Guardians, Union Offices, New Shoreham.

NOVEMBER 23.—**Wigan.**—PAINTING, ETC.—The Education Committee invite tenders for the painting, colouring, etc., required at the St. Thomas's Caroline-street and Clayton-street schools. Copies of the specifications may be obtained from Mr. Geo. H. Mockler, Director of Education, Education Offices, King-street, Wigan.

NOVEMBER 24.—**Salford.**—PAINTING, ETC.—The Guardians invite tenders for certain painting, etc., at the Union Infirmary, Hope-street, Pendleton. Forms of tender, etc., may be obtained on application to the Steward of the Infirmary.

ROADS, SANITARY, AND WATER WORKS.

NOVEMBER 22.—**Alnmouth.**—LAYING PIPES.—The R.D.C. of Alnwick invite tenders for providing and laying 48 yds. of 6-in. sanitary pipes at Garden-terrace, Alnmouth. The specification may be seen at the office of the Council at Alnwick, and a copy thereof upon application to Mr. T. Bickerton, Alnmouth.

NOVEMBER 22-DECEMBER 14.—**Beverley.**—DRAINAGE.—The Visiting Committee of East Riding of Yorkshire County Lunatic Asylum, Beverley, invite tenders for the redrainage of the asylum, including 9-in. main drain from the asylum to Beverley, the erection of new sanitary annexes and alterations to those existing. Conditions of contract, etc., may be obtained on November 22 from the engineers and architects, Messrs. Everard, Son, & Pick, 6, Millstone-lane, Leicester, on the payment of a sum of 5*l.* 5s.

NOVEMBER 22.—**Edinburgh.**—DRAIN.—The Magistrates and Council invite offers for the construction of a pipe drain in the New Cross-road at the Cattle Markets, Gorgie, leading from Gorgie-road to Slateford-road. Plans, etc., prepared by the Burgh Engineer, from whom schedules of measurement and all particulars may be obtained.

NOVEMBER 23.—**Lynton.**—ROAD-MAKING, ETC.—Tenders are invited for road-making and sewering at Lee-road Building Estate, Lynton, and for the erection of four houses thereon. Plans, etc., may be seen on application to the owner, Mr. G. L. Gunn, Lynton, or at office of Mr. J. C. Southcombe, P.A.S.I., architect and surveyor, Barnstaple.

NOVEMBER 23.—**Mountain Ash.**—STREET WORKS.—The U.D.C. invite tenders for the execution of street works in the road leading from Harris-terrace to Penrhiweiber Pleasure Ground. Plans, etc., may be seen, and form of tender, etc., obtained, on application to the Surveyor to the Council, Town Hall, Mountain Ash.

NOVEMBER 23.—**New Washington, etc.**—STREET WORKS.—Chester-le-Street R.D.C. Highways Committee invite tenders for making up thirty-five private streets at New Washington, comprising lot 2, and twelve private streets at Birtley, comprising lot 3. Plans, etc., may be seen, and schedule of quantities, etc., obtained, at the office of Mr. Geo. W. Ayton, Highway Surveyor, Chester-le-Street.

NOVEMBER 23. — **Rhondda.**—SEWERS.—Rhondda U.D.C. invite tenders for: (1) Laying of about 330 yds. of 6-in. stoneware pipe sewer at Gelli and Ystrad Rhondda; (2) laying of about 300 yds. of 6-in. and 80 yds. of 9-in. stoneware pipe sewer at Ynyshir, Porth, and Brithweunydd. Plans may be seen, and specifications, etc., obtained, at the Public Offices, Pentre, Rhondda, on depositing the sum of 1*l.* 1s. for each contract.

NOVEMBER 24.—**Ashford.**—REPAIRING LANE.—Ashford (Kent) U.D.C. invite tenders for the work of repairing Gas Works-lane in accordance with the specification to be obtained from Mr. H. R. Turner, Engineer and Manager, Gas Works Offices, Ashford, Kent.

NOVEMBER 24.—**Aston-cum-Aughton.**—FILTER.—Rotherham R.D.C. invite tenders for the construction of a circular filter, with the necessary valves, fittings, etc., at the Swallownest Sewage Works, in the Parish of Aston-cum-Aughton. Plans may be seen, and quantities, etc., obtained, from Mr. B. Hey, Surveyor to the Council, Imperial Buildings, Rotherham.

NOVEMBER 24.—**New Delaval.**—SEWER.—The Tynemouth R.D.C. invite tenders for the providing and laying of about 350 yds., 290 yds., and 200 yds. respectively of 18-in., 15-in., and 12-in. pipe sewer, constructing of manholes, flushing tanks, etc., at New Delaval, near Newsham, Blyth. Plans, etc., may be seen at the office of Mr. A. S. Dinning, 21, Ellison-place, Newcastle.

NOVEMBER 24.—**Tottington.**—SEWERING.—Tottington U.D.C. invite tenders for the relaying of a sewer in Back Holly-street. The drawings, etc., may be obtained from Mr. Lawrence Kenyon, Surveyor to the Council.

NOVEMBER 24.—**Wood Green.**—WORKS OF PRIVATE STREET IMPROVEMENT.—The U.D.C. invite tenders for works of private street improvement in Bedford-road and Park-road. The plans, etc., may be seen, and bills of quantities obtained, upon payment to Mr. W. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1*l.* 1s.

NOVEMBER 25.—**Barnton.**—STREET.—The Winnington, Northwich, and District Co-operative Society, Ltd., invite written tenders for the making of a new street at Barnton. Plan, etc., may be seen at the Society's Office during business hours.

NOVEMBER 26.—**Friern Barnet.**—ROAD WORKS.—Making-up, etc., of Alma-road and Bawtry-road, for the U.D.C. Forms of tender, etc., can be obtained from Mr. E. J. Reynolds, A.M.Inst.C.E., Engineer and Surveyor.

NOVEMBER 29.—**Ellesmere Port.**—STREET-MAKING.—The Ellesmere Port and Whitby U.D.C. invite tenders for the making and completing of Wilkinson-street, Ellesmere Port. Plans may be inspected, and specification, etc., obtained, at the office of the surveyor, Mr. J. M. Hudson, 1, Lower Mersey-street, Ellesmere Port.

NOVEMBER 29.—**Yardley.**—SPARKHILL RECREATION GROUND.—The R.D.C. invite tenders for drainage, excavation, levelling, construction of paths, pool, lavatories, and boundary walls, etc. Plans, etc., can be seen, and bills of quantities, etc., obtained, on application to Mr. Arthur W. Smith, Engineer and Surveyor to the Council, at the Council House, Sparkhill, near Birmingham, on payment of a deposit of 3*l.* 3s. to Mr. Francis Ladbury Thompson, Clerk of the Council, the Council House, Sparkhill, near Birmingham.

Digitized by Google

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 30.—**Ealing.**—PRIVATE STREET IMPROVEMENTS.—The T.C. invite tenders for the making-up of Denbigh-road and various alleys on the Leeland and St. Kilda Estates. The drawings, etc., may be seen, and form of tender, etc., obtained from Mr Charles Jones, M.Inst.C.E., Borough Engineer, Town Hall, Ealing, W., upon payment of a deposit of 10s. 6d. for each road.

NOVEMBER 30.—**Leyton.**—PRIVATE STREET WORKS.—The Leyton U.D.C. invite tenders for the making-up, kerbing, and paving of certain private streets. Specification, etc., may be obtained on application to Mr. William Dawson, M.Inst.C.E., the Council's Surveyor, at his office, Town Hall, Leyton.

NOVEMBER 30.—**Market Harborough.**—SEWAGE DISPOSAL.—The Market Harborough U.D.C. invite tenders for extensions to their sewage disposal works. Plans may be seen, and copies of general conditions, etc., may be obtained, at the Council Offices on payment of 5*l.* 5s.

DECEMBER 2.—**Lewisham.**—ROAD, ETC.—Tenders are invited for the construction of a new road, sewers, manholes, surface-water drains, gullies, the making-up of the Winn-road, and other works, for Mr. David Duncan, of "Curdridge," Botley, Hants, to the satisfaction of Messrs. Lemon & Blizard, MM.Inst.C.E., F.F.S.I., etc., the engineers and surveyors for the estate, 11, Victoria-street, Westminster, S.W. Plans, etc., may be inspected at the engineers' offices, and copies of the bills of quantities obtained, on depositing the sum of 3*l.*

✱ DECEMBER 6. — **Hendon.** — ROAD-MAKING.—The Hendon U.D.C. invite tenders for making-up a portion of Alexandra and Albert roads, Hendon. See advertisement in this issue for further particulars.

✱ DECEMBER 8. — **Dalston, N.E.** — DRAINAGE.—The Guardians of the Hackney Union invite tenders for drainage and sanitary works at their Out-Relief Offices and Dispensary at Mayfield-road, Dalston, N.E. See advertisement in this issue for further particulars.

✱ DECEMBER 8.—**Tottenham.**—REPAIRS TO ROADS.—The Metropolitan Asylums Board invite tenders for repairs to roads at the Fever Hospital, St. Ann's-road, Tottenham, N. See advertisement in this issue for further particulars.

✱ DECEMBER 14.—**Beverley.**—DRAINAGE.—The Visiting Committee of the East Riding of Yorkshire County Lunatic Asylum, Beverley, Yorks, invite tenders for redrainage of above asylum. See advertisement in this issue for further particulars.

DECEMBER 16.—**Pretoria, Transvaal.**—SEWERAGE AND SURFACE DRAINAGE WORKS, STONEWARE PIPES.—Tenders are invited for approximately 70,000 yds. of ordinary and special made stoneware socketted drain pipes for use in the sewerage of Pretoria. Specification, etc., may be obtained, and drawings consulted, at the office of Messrs. Mosenthal, Sons, & Co., 72, Basinghall-street, London, upon deposit of 5*l.* 5s.

STONES, MATERIAL, AND STORES.

NOVEMBER 23.—**London.**—DOG SPIKES.—Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of dog spikes. Forms, etc., can be obtained at offices of Mr C. Crommelin, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 1*l.* 1s. (which will not be returned).

NOVEMBER 23.—**London.**—METALS, ETC.—The Madras and Southern Mahratta Railway Company, Ltd., Board of Directors, invite tenders for (1) Metals (brass, copper, lead, nickel, and zinc); (2) steel material (flats, hoops, rounds, squares, plates), as per the specifications, which may be seen at the offices of the company. The charge for the specifications is 1*l.* 1s. each, which will not be returned. Mr. H. Bonham-Carter, Secretary, 91, York-street, Westminster, S.W.

NOVEMBER 24.—**Edmonton.**—GUERNSEY GRANITE SPALLS.—The Guardians invite tenders for the supply of 200 tons of Guernsey granite spalls. Forms may be obtained by sending a stamped addressed foolscap envelope to Mr. F. Shelton, Clerk, Lower Tottenham.

NOVEMBER 24. — **Newcastle.** — STORES. — Tyne Improvement Commissioners invite alternative tenders for the supply of stores to their various works, ferries, dredgers, steam tugs, screw hoppers, etc., for six months and for twelve months respectively. Forms of tender may be obtained on application at the offices of the Commissioners' Engineer, Bewick-street, Newcastle-on-Tyne.

NOVEMBER 24.—**Wallasey.**—THE SUPPLY OF JARRAH WOOD PAVING BLOCKS.—The Wallasey U.D.C. invite tenders for the supply of 25,000 Jarrah wood paving blocks. Form of tender, etc., may be obtained on application to Mr. W. H. Travers, A.M.Inst.C.E., District Engineer and Surveyor, Public Offices, Egremont, Cheshire.

NOVEMBER 27.—**Clifton, York.**—MATERIALS, ETC.—Tenders are invited for supplying materials, etc., to the North Riding of Yorkshire Asylum, Clifton, York. Forms of tender may be obtained on application to Mr. C. Garrood, Clerk and Steward, North Riding Asylum, Clifton, York.

NOVEMBER 27. — **Gloucester.** — MATERIALS. — The Light Railways Committee invite tenders for twelve months' supply of stores. Specification, etc., may be obtained from the General Manager, and samples of the various materials may be seen at the depôt, Bristol-road.

NOVEMBER 27. — **Upholland.** — MATERIALS. — Upholland U.D.C. invite tenders for the supply of materials required in connexion with road widening and diversion at Grimshaw-lane. Further particulars and forms of tender may be obtained from Mr A. Hunt, Clerk to the Council, Council Offices, Upholland.

NOVEMBER 30.—**Fylde.**—PIPES.—The Fylde Water Board invite tenders for the supply and delivery of cast-iron pipes. Specification, etc., may be obtained on application to Mr. J. Cook, Engineer, Sefton-street, Blackpool.

DECEMBER 6. — **Wombwell.** — ROAD MATERIALS.—Wombwell U.D.C. invite tenders for the supply of materials. Further particulars, etc., may be obtained from Mr. W. Quest, Surveyor to the Council.

DECEMBER 8. — **Dublin.** — ARTICLES.—The Dublin Port and Docks Board invite proposals to supply articles from January 1 next to December 31. Forms of proposal may be had at office of Mr. N. Proud, Secretary, Port and Docks Office, Westmoreland-street, Dublin.

NO DATE.—**Copmanthorpe.**—GRAVEL.—400 or 500 tons of gravel. To be delivered by rail at Copmanthorpe Station or by barge at Acaster Malbis Small samples may be sent to Copmanthorpe Station. Address Mr. W. F. Wailes-Fairbairn, Askham Grange, York.

NO DATE. — **Fulham.** — GRANITE CHIPS.—Tenders are invited for the supply of 3,000 tons granite chippings, ½ in. to ¾ in., free from dust, to be delivered either by cart or barge at the works of the British Improved Construction Company, Ltd., 47, Victoria-street, Westminster, S.W., or River Wharf, Stevenage-road, Fulham. Samples to accompany tender.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	Nov. 24
*STEAM MOTOR WAGONS, BROMLEY-BY-BOW, E.—On the Premises	Fuller, Horsey, Sons, & Cassell	Nov. 25
*MACHINERY AND BUILDER'S PLANT, WESTMINSTER, S.W.—On the Premises	H. J. Bromley	Nov. 30
*BUILDING SITES, LANDS, AND HOUSES, SELSEY-ON-SEA—Anchor Hotel, Chichester	Wyatt & Son	Dec. 1
*BUILDING SITE, TOTTENHAM COURT ROAD—At the Mart	Foster & Cranfield	do.

PRICES CURRENT—*Continued from page 567.*

BRICKS, &c. (*continued*).

	£	s.	d.	
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	17	0	per 1000, deld. at rly. depôt.
Headers	10	7	6	" " "
Quoins, Bullnose, and Flats	14	7	6	" " "
Double Stretchers	16	7	6	" " "
Double Headers	13	7	6	" " "
One Side and two Ends	17	7	6	" " "
Two Sides and one End	18	7	6	" " "
Splays and Squints	15	17	6	" " "
Best Dipped Salt Glazed Stretchers	10	17	6	" " "
Headers	10	7	6	" " "
Quoins, Bullnose, and Flats	14	7	6	" " "
Double Stretchers	16	7	6	" " "
Double Headers	13	7	6	" " "
One Side and two Ends	17	7	6	" " "
Two Sides and one End	18	7	6	" " "
Splays and Squints	15	17	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "

STONE (*continued*).

	s.	d.		
Ancaster in blocks	1	10	per ft. cube, deld. rly. dep.	
Beer "	1	6	" "	
Greenshill "	1	10	" "	
Darley Dale in blocks	2	4	" "	
Red Corsehill "	2	2	" "	
Closeburn Red Freestone	2	0	" "	
Red Mansfield "	2	4	" "	

YORK STONE—*Robin Hood Quality.*

	s.	d.		
Scappled random blocks	2	10	per ft. cube, deld. rly. dep.	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super.	"
6 in. rubbed two sides ditto, ditto	2	6	"	"
3 in. sawn two sides slabs (random sizes)	0	11½	"	"
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	"	"
1½ in. to 2 in. ditto, ditto	0	6	"	"
Scappled random blocks	3	0	per ft. cube	"
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super.	"
6 in. rubbed two sides ditto	3	0	"	"
3 in. sawn two sides slabs (random sizes)	1	2	"	"
2 in. self-faced random flags	0	5	"	"

SLATES.

In.	In.	£	s.	d.	
20×10 best blue Bangor		13	2	6	per 1000 of 1200 at r.d.
20×12 "	"	13	17	6	" "
20×10 first quality	"	13	0	0	" "
20×12 "	"	13	15	0	" "
16×8 "	"	7	5	0	" "
22×10 best blue Portmadoc		12	12	6	" "
16×8 "	"	6	12	6	" "
20×10 best Eureka unfading green		15	17	6	" "
20×12 "	"	18	7	6	" "
18×10 "	"	13	5	0	" "
16×8 "	"	10	5	0	" "
20×10 permanent green		11	12	6	" "
18×10 "	"	9	12	6	" "
16×8 "	"	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000 at rly. dep.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	... 15	10	0
Deals: best 3 by 9	13	10	0	... 14	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	... 12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	10	0	... 10	10	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	... 10	0	0
Foreign Sawn Boards—1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft 5	0	0	... 5	10	0
Seconds	4	10	0	... 5	0	0
Small timber (8 in. to 10 in.)	3	17	6	... 4	0	0
Small timber (6 in. to 8 in.)	3	5	0	... 3	10	0
Swedish balks	2	12	6	... 3	0	0
Pitch-pine timber (30 ft. average)	4	10	0	... 5	5	

Digitized by Google

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

Greek Architecture. By ALLAN MARQUAND, Ph.D., L.H.D. ("Handbooks of Archæology and Antiquities.") Pp. 375. (New York: The Macmillan Company. 1909. 10s.)

THERE is a great deal in this book which perhaps has not been put together so comprehensively before, at least in English. There is a serious attempt in it to grapple with the facts of Greek building, and to exhibit these facts by means of line diagrams—in itself a most excellent thing. There are plans, elevations, and isometric diagrams of such features as dentil cornicing, coffering for ceilings, triglyph construction, and the like, which, essential as they are to the practical student, have a way of being left out in books purporting to deal with Greek architecture. The description and delineation of decoration, finishing, and painting is as complete as any we have seen. Most books which deal either wholly or in part with Greek architecture are simply irritating in this respect, whereas what one has been waiting for for some time is an account dealing with the meaning and structure of the decorative forms and the minutiæ of their application. This, and much more, a book on Greek architecture ought to give us, though the plea no doubt is that the actual examples, so fragmentary, are scattered over the wide world in museums when they are not to be found on sites. The plea might also be advanced that it is impossible to give history, geographical distribution, the interrelation of style and form and structure, together with an adequate account of building fact, between the covers of one book that must satisfy a commercial condition in not being too bulky.

Professor Marquand has avoided this last dilemma by almost completely ignoring historical aspects and consecutive development along certain lines, and the result is that, for all its good points, the book is, in one sense, disappointing. Its arrangement is not only, to our thinking, largely on a mistaken plan, but—a natural resultant—the matter is so jumbled together that it has, so to speak, no head, body, or extremities that one can get hold of. Thus it would be a bewildering book to put in the hands of students. We are convinced that, though the student must be taught building fact above all, he ought to have it presented to him in a systematic manner, so that, incidentally, he is led to perceive the right trend of historical development. We have laid stress on this educational question because the author of the book is a professor in one of the American Universities, and, we presume, is concerned with the training of youth.

The chapter on "Proportion" contains much interesting matter collected from various authors, but it might have been made more constructive with advantage.

The book is divided into the following groups or chapters:—Materials and Construction, Architectural Forms, Proportion, Decoration, Composition and Style, and Monuments. This arrangement, in its way, might be well enough, but the author surely includes far more than is legitimate under the heading "Decoration"? The same may be said for his chapter on "Monuments," which includes houses, agora, and other classes of buildings of a utilitarian character.

Interspersed with the line diagrams in the text are several photographic illustrations, which are, on the whole, excellent and well-chosen. The line diagrams, however, are by no means so careful and accurate throughout as they ought to be in a work of this kind. The student is misled by seeing refined Greek mouldings represented as if they were coarse Roman examples, even when the mouldings are particularly noted; see, for example, the Lysicrates base on p. 85, and the Parthenon echinus on p. 97, both coarsely and even wrongly represented. The diagram showing the shaft of the Mycenæ Lion's Gate on p. 87 is also exaggerated in its taper. An example of a singular lack of any attempt to explain development of form is seen in the description of the Ionic capitals on p. 95. On the other hand, many statements, and especially the tabulation of facts by Professor Marquand, show penetration and wide knowledge—such statements, for example, as that the dentil band was important enough to be ranked as a frieze (p. 114), and that giving prominence to the "in antis" type of Greek temple, with other remarks on the same subject (p. 310).

There is an excellent bibliography at the end of the volume, together with a glossary of the Greek words employed in the text, a much-needed list of the abbreviations employed, and a general index. We agree with the use of the Greek words in the text to define accurately the classical names for features, though some of the English words used are surely unnecessary and even pedantic. One notes at random such words as *toichobate*, *parallelopipedon*, and *kosmophoros*, though there are scores of others. The volume is compact, but most painfully heavy to handle.

A Century of Archæological Discoveries. By PROFESSOR A. MICHAELIS; translated by BETTINA KAHNWEILER; with a preface by PERCY GARDNER, Litt.D. Pp. 340. (London: John Murray. 1908. 12s.)

WE hope this book will reach a wide public. Apart from that, the future historian would do well to have it on his shelf, not only for its obvious quality as a record of fact, but as presenting a vivid picture of the forces which led the march of archæological discovery in a century of marvellous progress in other directions. There is a clearness about the style which is pleasant in a work of this kind, and one feels that the picture presented is a true one. But besides being clearly written, the book is informed by a very wide knowledge, and our sense of this broadens more and more as we read. Professor Michaelis is evidently completely in his element in speaking of sculpture, and in that department only does he venture into any large expression of individual opinion alongside of his statement of fact; but this is only natural, as any mind in archæological study must specialise in one or at most a very few fields in these times. He has some excellent remarks on specialisation in archæology towards the end of the book.

The interest of the pages is constantly revivified by the personal element which is inseparable from the subject, being, as it is, in one aspect, a series of short biographical records. After a *résumé* of events towards the end of the XVIIIth century in which the English played a large part, and a judicious reference to Napoléon's beneficent influence on scientific and artistic research, the book begins, practically, with Lord Elgin and the Parthenon, and goes on, in seven more chapters, to describe the discoveries of Etruria and the Nearer East, the greater and lesser Hellenistic sites, the Prehistoric Period, the significance of isolated discoveries in Greece and elsewhere, and the great civilisations of Egypt, Assyria, and Babylonia.

A chapter at the end sums up the results in sculpture, painting, and architecture, indicating the past and present aims of the archæologist. Then follow a very useful chronological table from 1790 to 1908, and a reasonably good index. The text is illustrated by twenty-eight plates—mostly photographic—and a frontispiece.

With such a collection of material before us it is almost impossible to pick out in a review any special facts of interest, but one might mention two, as remarkable as they are regrettable: that the reports of the Greek overseer on the original excavations at Mycenæ were withheld until recently—that is, till long after many competent authorities had published their studies on the remains; and that the plan drawn by Kawerau of the Greek explorations on the Acropolis (practically the first full disclosure of what we see at present) has not yet appeared. The description of the Prehistoric work is, on the whole, most excellent, but it is rather unguarded at present to say that the Palace of Knossos was found in successive strata, though the outlying city, in places, was so found. The author also explains the conclusions about Mycenæ and Egypt before he has dealt with the important Cretan evidence at all.

In dealing both with the Ara Pacis and Tel-el-Amarna, there is some repetition, and in the case of the former there is no cross reference to the statements. All these might be corrected in a future edition. On the other hand, we notice two happy remarks, one a comparison and the other an opinion; that Knossos is to Mycenæ and Paaestos as Versailles is to the Wartburg, and that the war-cry, "The Orient or Rome," in dealing with Byzantine origins, may calm down into the Orient *and* Rome.

The translator appears to have done her work well. The book is attractively got-up and light to handle. We noticed two misprints; Scokas for Scopas, on p. 246, and van Bissing for von Bissing, on p. 262.

Stained-Glass Tours in England. By CHARLES HITCHCOCK SHERRILL. Pp. 248. (London: John Lane. 1909. 7s. 6d.)

WE have read this book, although with enjoyment—the enjoyment that one always gets from the work of an enthusiast—yet with a certain amount of disappointment, because to some extent it represents an opportunity missed; for, in spite of the splendid pioneer work of Winston and careful studies by Joyce and others, a really complete, satisfactory account of English stained-glass has yet to be written.

Winston, before whose time no classification of mediæval stained-glass had been attempted, divided it into three main periods, which he named after the corresponding styles in architecture—Early English, Decorated, and Perpendicular; but no one has yet attempted to go further and trace the work of different schools or of

Digitized by Google

individual artists. Yet in some cases the names of the latter are known, such as John Thornton, of Coventry, who painted the great east window of York Minster, and whose work there differs considerably from the other work of the period in the minster and elsewhere in York—work probably of the local school, and which has marked peculiarities of its own. We had hoped that a writer like Mr. Sherrill, with leisure to visit practically all the important remains of stained-glass in England, and enthusiasm for the subject, might have attempted something in this direction, but in this we are disappointed. It is true that in speaking of Coventry he mentions John Thornton, but we should have liked the subject followed up. As it is, Mr. Sherrill adds practically nothing to what has been already written on the subject.

Indeed, in the earlier part of the book we have to complain that he tells us so very little about the glass at all, and that little does not always show very close or careful observation. Thus, of the chapter on Canterbury, nine pages are filled with somewhat rambling gossip about the town of Canterbury and only five with a description of the stained-glass windows in the cathedral, although they are the most important remains of thirteenth-century work in the south of England. He notices, however, their resemblance to contemporary French work, which is very marked; but some explanation of the stories illustrated in the glass would surely not have been out of place in a book of this kind.

So, again, in speaking of the great rose windows in the transepts at Lincoln, he never mentions whether they are composed of figure subjects or of ornaments only; and of the famous "Bell-Founders'" window at York, he merely says that it is "appropriately ornamented with numerous bells," not, apparently, having noticed that the figure subjects show the whole process of making a bell.

There is less, however, to complain of on this score further on in the book, when Mr. Sherrill deals with Perpendicular and Renaissance work, in which he seems to take more interest. He has realised the importance of the windows in the antechapel of New College, Oxford, as marking the transition from Decorated to Perpendicular, though he does not mention their probable author, Thomas the glazier, who left his own portrait in the glass of Winchester College Chapel—glass, alas! "restored" in the manner of the early XIXth century—and who, if anyone, was probably responsible for the birth of the new style.

Often, too, he falls into error from insufficient study of the authorities, as when he repeats the long-exploded legend concerning the origin of the Fairford windows, alleging in good faith that "*the records state* that Richard Tame caused the building to be erected and finished in 1493 expressly for the glass which had been captured at sea from a Dutch vessel." There is no evidence whatever for this story, which is not found in any account of the glass before 1700—the glass not being mentioned in Tame's will—and the internal evidence against it is conclusive. The architecture of the canopies is English, the glass contains English royal badges, and it perfectly fits the Perpendicular tracery of the church, which would hardly be the case if, as the story goes, it had been made in Flanders for a church in Rome. On the other hand, it undoubtedly contains many details which are Flemish in character, and the most probable explanation is that it was made in England by a glazier who had Flemings in his employ. Of the east window at Fairford, by the way, the author makes the amazing statement that the original background has been replaced by white glass, whereas many of the details, such as the arms of the crucified thieves, are painted on this white background, showing it to be an integral part of the original window.

Again, in speaking of the contract for the glazing of the Beauchamp Chapel at Warwick, he says:—

"It there appears that the executors of Richard Earl of Warwick were not satisfied with the then prevailing English system of soft tints, and also that they were sufficiently advised of the state of the art on the other side of the channel to realise that the richer hues which they demanded could be obtained in France, even though it was impossible or difficult in England. We read that they required the glazier, John Prudde, of Westminster, to work 'with glasse beyond the seas, and with no glasse of England.'"

On the strength of this he proceeds to draw a contrast between this and other work of the same date, of which he assumes the material to be of English manufacture. Let us quote Winston on this point:—

"I imagine that the use of foreign glass at this period was not infrequent. For I cannot perceive that the material used in these windows differs in texture or tone from much other glazing of the same date with which I am familiar. The small effect that the weather has had on it proves it to be of a very hard kind, but glass of an equally hard nature and of the same date may be seen elsewhere. Nor is there anything remarkable in the quality of the colours."

We cannot agree with Mr. Sherrill or with Mr. Lewis Day, whom he follows, in classing the great east window of Gloucester Cathedral choir as Perpendicular. The tracery, it is true, is Perpendicular—one of the earliest examples known—but the glass-worker has in this, as in some other cases, lagged behind the architect, for figures, draperies, and canopies are all typically Decorated work. The only sign of change is in the increased amount of white in the window, and this is not enough to warrant its being classed as Perpendicular.

In spite of these defects, Mr. Sherrill has supplied a real want in providing a most useful catalogue, with itineraries and maps, of the principal remains of stained-glass in England. Indeed, though Long Melford and Hessett should certainly not have been omitted, and the large amount of stained glass at Stamford, though much mutilated, calls for mention, still, the list is, on the whole, wonderfully complete, and the author's love of his subject makes the book extremely readable.

French Cathedrals. By JOSEPH and ELIZABETH PENNELL. Pp. 424. (London: T. Fisher Unwin. 1909. 20s.)

ALTHOUGH this work makes no claim to be technical either as regards the treatment of matter or drawings, there are few architects probably who, should the book come into their hands, will not read with pleasure the bright and enthusiastic record of the impressions that Mrs. Pennell has given us as the result of her repeated visits to the various cathedrals and cities described. Mr. Pennell is so well known as an able draughtsman in black and white that any work bearing his name carries a guarantee of artistic value. He contributes 183 drawings to the book, and, with few exceptions, they bear evidence of much patient labour and skill. Some are reproduced in half-tone from wash-drawings, others—the majority—are from line-drawings. The wash-drawings have been chiefly used in the illustration of the interiors, where breadth of treatment was necessary to give the effect of scale, such as the picturesque interiors of the Cathedral at Toulouse, Le Puy and Poitiers, Chartres and Albi. Perhaps Mr. Pennell has done nothing finer than the series of pen-drawings given in illustration of the imposing brick cathedral of Albi, so strangely unlike the other cathedrals of France. The picturesque grouping in the more distant views, the street scene, with the lofty western tower, the steps to the flamboyant south porch, and the porch itself, the richness of the carving looking richer by contrast with the massive and comparatively unadorned brick walls of the main building, and, lastly, the rood screen and side screens of the choir have given the artist subjects for his skill, of which he has taken full advantage, the knack of rendering elaborate detail without the loss of breadth. We can fully sympathise with the impression produced by the first visit to Le Puy, and the drawings illustrating it, and also those of Arles and St. Gilles, are no less beautiful in their way than those of Albi.

Notre Dame, Chartres, Rheims, Laon, Bourges, Le Mans, Rouen, and Amiens make a goodly list, and the final chapter deals with the incompleted cathedral at Beauvais—the "last word" in French Gothic. We should have liked further illustrations of Beauvais—the drawings given rather fail adequately to express the great scale on which the church has been designed or the richness of some of its details. Some day we hope Mr. Pennell will make further drawings of it. And we would willingly have spared the drawing of the central spire at Rouen—a monstrosity in iron, to which even Mr. Pennell's drawing cannot reconcile us—in exchange for a drawing of the tower of St. Romain at the north end of the west front, perhaps one of the most beautiful towers in France.

The great additional dignity given to these buildings by the flights of steps that in so many cases lead up to them is well brought out in the drawings of Arles and St. Gilles, Bourges, Rheims, Amiens, and Le Puy. Those at Albi have already been referred to. Rouen is an exception, and, splendid as its façades are, they suffer when compared with those that are more boldly raised above the surrounding levels. The nature of the site has no doubt in some cases necessitated the treatment, but the mediæval builders always appeared to have rejoiced in any opportunity of introducing them, as Mr. Pennell has been ready to realise their artistic value in his drawings. We have no space for a further detailed description of the drawings: there are few, if any, that we could well do without, and the distant views, the street scenes and market-places, with their cleverly-drawn groups of figures, lend a reality, charm, and scale to the drawings which the average draughtsman cannot hope to accomplish. Small ground plans of nearly all the principal churches described have been inserted in the text—for the most part from Viollet le Duc's "Dictionary." They supply just that technical item of information necessary to enable the reader to fully appreciate the points of view in the drawings, besides being in themselves a useful series of small comparative diagrams.

Memorials of St. Paul's Cathedral. By W. MACDONALD SINCLAIR, Archdeacon of London, Canon of St. Paul's. Pp. 482. (London: Chapman & Hall. 1909. 16s.)

THIS is a large and valuable book of its kind, but its value is not in a special sense architectural. The general architectural history of old and new St. Paul's is included in it, but it is to a great extent an ecclesiastical and social history of events and personages grouped around St. Paul's Cathedral, and having more or less direct relation with it. To this are added various chapters of special information; the diary of Green, who was for many years verger of the Cathedral, recording (from the verger's point of view) all the principal events which had occurred at the cathedral during his term of office; a list of the monuments with the names of their artists; a list of organists of the cathedral, with a little biographical information in regard to each, some of them having been very eminent names in their art.

As a history of events connected with the cathedral it is a work of great interest and full of information, but there is nothing new in regard to the architectural history or design of the cathedral, which is the side of the matter with which we are concerned; nor does the author appear to have any critical opinions to express, beyond a general admiration for everything (except, we admit, Wren's unhappy design with the spire on the centre of a dome). He hardly seems to be aware that the suitability of Sir William Richmond's mosaics for a Renaissance

Digitized by Google

cathedral is a point that is open to a good deal of discussion, or that there is anything to be said against the manner in which the visible choir has been shortened by the rather gaudy reredos, or the singularly inarchitectural device of placing a reredos which is semicircular in plan in front of a semicircular apse, or the clumsy way in which the cornice of the reredos is made to cut into one of the pilasters, without any attempt to connect it logically with the previously existing architecture.

These, however, are points which general readers care little about, and this is a book for the general reader. As such it is a mine of information, and will doubtless find place in many a library.

The book is illustrated by pen-line sketches by Mr. Louis Weirter, which are good and free in style as far as the illustrations of details and portions of the building are concerned, but the general views of exterior and interior are not equal to what one ought to find in a book of this importance.

Domestic Sanitary Engineering and Plumbing. By F. W. RAYNES, R.P. Pp. 474. (London: Longmans, Green, & Co. 1909. 10s. 6d.)

IF young plumbers and sanitary engineers fail to fathom the mysteries of their craft, they can no longer make the excuse that there is no one to teach them and no books from which they can learn. There are already many books written by teachers and others, and here is another book by another teacher—a book, be it said, from which the eager student can learn much. It is not a collection of disjointed lectures, but an orderly treatise on plumbing and sanitary engineering—not sanitary engineering and sanitary plumbing only, as the short title might lead one to think, but plumbing generally, including water supplies (cold and hot), and low-pressure hot-water heating apparatus, as well as sheet-lead work, drainage, and sanitary fittings and plumbing. It is a book of 474 pages with 277 illustrations, and contains fourteen chapters, an appendix, and a sufficient index. In its scope it includes materials and their properties, roof-work, pipe-bending and fixing, joints in pipes, solders and lead-burning, sanitary fittings, soil-pipes and waste-pipes, drainage, the treatment of sewage from country houses, water supply, pumps, and rams, hydrostatics and hydraulics, domestic hot-water supply, and low-pressure hot-water heating apparatus. The author has planned his work carefully, and no part of his subject has been treated at disproportionate length. Some branches of the plumber's work—gas-fitting, for example—are not discussed at all, but in a handy text-book of this kind it is obviously impossible to cover the whole ground. There are other omissions, however, which are on a different footing. The chapter on domestic hot-water supply occupies sixty-one pages, but not a word is said as to the materials to be used for the circulation-pipes, branches, feed-pipes, tanks, and cylinders. There is no reference in the index to wrought-iron pipes, tubes, or barrels, and we can find no detailed account of them in the text; the seven lines on page 19 do not explain the difference between the kinds known as gas, water, and steam, nor does the paragraph on pipe joints (page 110). In the chapter on water supply nothing is said about the weights of lead pipes for different sizes and pressures, and the weights of lead waste-pipes are not given in the chapter on soil and waste pipes. Drain gullies are somewhat inadequately treated; in the two drainage plans (Figs. 132 and 150) manholes are not shown at all the junctions, and the least that ought to be done would be to provide for these branches gullies with inspection arms and covers, so that the branches could be cleared without breaking the drain, but gullies of this kind are not mentioned. In the upper part of Fig. 132 two gullies and a vent pipe, within a few feet of each other, ought certainly to have been connected to one inspection chamber. Safety-valves are mentioned in connexion with domestic hot-water supply, but not with heating apparatus. These, however, are very trifling blemishes in an excellent book. We have no hesitation in recommending it, not only to the young plumber, but also to the master plumber and to the architectural student. The illustrations are clear, and the text combines theory and practice in a very interesting and useful way.

Domestic Sanitation and Plumbing. By A. HERRING-SHAW, A.R.S.I. Part I. Pp. 307. (London: Gurney & Jackson. 1909. 6s. 6d.)

THIS is another book on sanitation and plumbing by another teacher. In size and appearance it is almost exactly like Mr. Raynes's book on the same subjects reviewed above, but owing to the use of thicker paper and the inclusion of a number of half-tone illustrations printed on separate sheets there are only 318 pages of text. Mr. Herring-Shaw's book, however, is planned on a larger scale than the other, and will be completed in two volumes, of which the first lies before us. This deals with materials, pipes and pipe-joints, traps, soil-pipes, waste-pipes and vent-pipes, sanitary fittings and drainage. The second volume will treat of water supply, domestic hot-water services, warming, and ventilation. In his book Mr. Raynes has a long chapter on roof-work, but with this exception each author has set himself the task of writing on the same subjects, and somewhat curiously the subjects are discussed in almost exactly the same order. Mr. Herring-Shaw's two volumes, notwithstanding the omission of all reference to roof-work, may be expected to contain about 50 per cent. more text than Mr. Raynes's single volume, the result being that the subjects common to the two authors are on the whole more fully discussed by the former than by the latter. The 307 pages of text and about thirty-two pages of half-tone illustrations in Part I. of Mr. Herring-Shaw's book correspond with 200 pages dealing with the same subjects in Mr. Raynes's book. The advantage of this extension of space is seen more particularly in the chapters on sanitary fittings and drainage. Mr. Herring-Shaw has been able to include a large number of illustrations of sanitary fittings, many of them being half-tone blocks reproduced from excellent wash-drawings supplied by the manufacturers of the fittings; the drainage illustrations are also more varied.

But we have said enough by way of comparison. It is time to look more closely at Mr. Herring-Shaw's book. He has much to say of great use to the student, but he does not always express himself in the most elegant way; thus on page 149 the words, "shoulder of the socket" are repeated three times in four full lines, and on page 152 and elsewhere "may" is repeatedly used for "can." Figs. 83A and 115 do not tally with the text. On page 224 Beardmore's formula ($V = 55\sqrt{H2F}$) for calculating the velocity of flow in sewers is given, but there is no explanation of the term H, "hydraulic mean depth," and without this the formula is useless to the student. On page 228 it is written, "using formula $V = 55\sqrt{}$ H2F, it will be observed that a 9-in. drain laid with a fall of 1 in 90 will discharge 712 gallons per minute"; the student will find considerable difficulty in observing this in the absence of any information as to the depth of flow in the drain and of any explanation of the method of ascertaining the value of H; besides, the formula gives the velocity of flow, and not the amount of sewage discharged. On pages 301 and 302 we have an illustration and description of a *pervious* cesspool with walls of "brick 9 in. thickness set in cement mortar"; the more usual method of constructing a pervious cesspool is to dig a circular pit like a well and to stein it with bricks laid in sand with cemented bands every 4 or 5 ft. The impervious cesspool shown on page 303 has no other ventilation than that provided by the opening for the chain-pump at the level of the ground.

These are small defects which are mentioned so that they can be rectified in a future edition. They are trifling in comparison with the value of the book as a whole. Mr. Herring-Shaw is to be congratulated on having written a very interesting and useful work on a subject which is now somewhat hackneyed.

How Property is Valued. By MARCUS ESDALE. Pp. 250. (London: The Cable Printing and Publishing Company, Ltd. 6s.)

ALTHOUGH the author in his preface states that he has "made no attempt to write for professional readers," we venture the opinion that the "professional reader" will be by no means loth to avail himself of the information contained in this work, covering, as it does, almost every phase of the interesting subject of valuation of property that comes within the purview of the ordinary practitioner. The fact that it claims to be a "popular explanation" by no means detracts from its value.

The value of the work is enhanced by the many and varied examples given, and the author does well in pointing out how great a difference in the value of almost identical properties may be effected by varying circumstances. As the author truly says, "The work of valuation is not merely correct arithmetic. If it were so, any fourth-form schoolboy might claim to be a competent valuer," and proceeds to give examples bearing out his contention.

The examples given throughout the work are actual business transactions, with the locality mentioned. This greatly enhances their value from a practical point of view. A very useful chapter is that dealing with improved values and intermediate interests, which is well explained by concrete examples; while some useful information is contained in that of "Analyses of some Recent Sales." In fact, the whole work is thoroughly up-to-date—even the Finance Act of 1909 is referred to—and after a most careful perusal we have no hesitation in saying that, modest as is its description, and the circle of readers the author professes to write for, many outside that circle will find it a most useful addition to their professional bookshelf.

Small Estate Management. By ALBERT C. FREEMAN, M.S.A. Illustrated. Pp. 119. (London: Rebman & Co. 1909. 2s. 6d.)

THIS is a useful little book, but a considerable part, such as that concerned with the working of small holdings, is outside our limits. Those portions of it which touch on cottage and farm buildings will repay perusal, and will be found suggestive as guides in case it is contemplated to construct this class of buildings. It is very desirable in the case of cottages that plans and designs should be carefully considered by those who desire to erect them, because their comparative simplicity inclines landowners to think that these habitations can be planned by any well-meaning amateur. Comfort with good design are the two desiderata, and it is because sufficient care is not given to either of these objects that so many new cottages are often hideous and frequently inconvenient.

Building Construction. By CHARLES F. MITCHELL, Lecturer on Building Construction to the Polytechnic, Regent-street, London, assisted by GEORGE A. MITCHELL. Sixth Edition, revised and enlarged. Pp. 864. (London: B. T. Batsford. 1909. 4s. 6d.)

THIS well-known book on building constuction needs no further praise from us. The new edition contains a good deal of new matter on reinforced concrete, steel

Digitized by Google

construction, and other progressive branches of the subject. A special feature of the book is the number and excellence of the illustrations. Students preparing for the advanced and honours courses of the Board of Education and for other examinations will find it one of the most useful of text-books.

The Force of the Wind. By HERBERT CHATLEY, B.Sc. (London: Charles Griffin & Co., Ltd. 1909. 3s.)

IN this little book by Mr. Chatley the effects of wind-pressure are discussed in relation to structures, moving bodies, and power production. The first-mentioned aspect of the subject is that appealing specially to our readers, to whom we have pleasure in commending this treatise as a reliable guide which, among other merits, is thoroughly up to date.

MAGAZINES AND REVIEWS.

THE *Art Journal* contains the continuation of an article by Mr. Luther Hooper on "Coffers, Chests, and Caskets," illustrated with photographs of some fine examples of the various methods in which such articles have been decoratively treated. There is the flat method, as shown in a Dutch camphor chest of the XVIIth century and Sir Thomas More's money chest, and the method of sumptuous high-relief carving, as in a grand chestnut wood Italian coffer of the XVIth century; and the architectural treatment, shown in a French example of the XVth century. On the whole we prefer the Italian method; the architectural treatment is not really suitable to the occasion. "Mr. Pennell's Nocturne Mezzotints," the subject of an article by Mr. Lewis Hind, are studies in night effects, a kind of subject which lends itself very well to mezzo-tint.

The Christmas special number of the *Art Journal* deals with the works of Mr. J. W. Waterhouse, of which numerous illustrations are given, two or three of them in fine and successful coloured plates.

To the *Burlington Magazine* Mr. J. Tavenor-Perry contributes an article illustrated by his own sketches, on "Some Square Ambones in North Italy," a paper of real interest to the architect, and containing some illustrations of little known works. Among the objects of art illustrated in connexion with other papers in the issue are some bronzes from Dodona; Chinese "Wares of the Sung and Yuan Dynasties"; and a reproduction of an unpublished picture by James Barry, "The Education of Achilles," which gives a much more favourable idea of his powers than the wall-paintings at the Society of Arts.

The *Architectural Record* (New York) issues a "Country and Suburban House Number," giving many illustrations of country houses by American architects, which should be of some interest to English architects.

The *Berliner Architekturwelt*, like the *Architectural Record*, contains a number of illustrations of small country houses and street houses, and it is of some interest to compare the German treatment of such buildings with the American. The German houses, on the whole, are the more original, but they have a certain element of oddity which the American architects contrive to avoid.

The *Local Government Review* is the first issue of a new monthly, dealing with public bodies in their relation to public works. It does not appear to go into architectural subjects, for Mr. Charles Welch's article on "City Bridges and the Bridge House Trust" is merely a history of the latter and its administration. It is to contain "Monthly Notes" on special subjects, this month's being on "The Protection of Commons, Footpaths, Open Spaces, and Rights of Way"; and there is a series of questions and answers on points in Local Government Law and Practice. It seems likely to be a very useful publication.

Concrete and Constructional Engineering contains a short account of "The New Admiralty Works at Dover," with several good illustrations reproduced from *Public Works* and *The Sphere*. A third instalment of the series on "Tests on Reinforced Concrete conducted in Great Britain," summarises a few more of the results furnished by sporadic investigations in this country. It is to be hoped that the particulars given by our contemporary may have the effect of awakening architectural and engineering societies to the need for systematic tests of reinforced concrete on lines akin to those adopted on the Continent and in the United States. The same number contains a supplementary article, with numerous photographs and drawings of the Western District Post Office, built in accordance with the Coignet system of armoured concrete.

The *Illuminating Engineer* contains facsimiles of the Charter and Grant of Arms accorded to the Waxchandlers' Company by Richard III. Reference is also made to an ordinance of the Waxchandlers made in A.D. 1358 concerning the punishments to be inflicted upon those who adulterated the wax they used for candle manufacture. The editor remarks that, although he does not desire to revive the pillory for those who sell bad carbon filament lamps under the guise of metallic filament lamps, yet it is evident that until some standard conditions are enforced upon the vendors of electric lamps, fraud will continue to be practised. He mentions a case in which some overrun carbon filament lamps were sold in this way, the bulbs having been previously frosted to prevent the purchaser from seeing the filaments.

Scribner contains an article by Mr. W. T. Hornaday, Director of the New York Zoological Park, on "The New York Plan for Zoological Parks," an article from which European projectors of zoological gardens certainly have something to learn. The fine and ample character of the buildings, and the extent of range given to the open-air cages for wild animals, show things on a scale which we are not accustomed to here.

The *Century* contains an article by Mr. Brander Matthews on "The Dramatist and the Theatre" (we decline to adopt the ridiculous American spelling "Theater," which destroys the whole history of the word), which is chiefly interesting from the number of illustrations and plans of ancient theatres that are given, including views of the Roman theatre at Orange as recently adapted for modern performances. Mr. Ernest Flagg contributes an article on "Road Building and Maintenance," contrasting American with French and English systems. America is as famous for bad roads as France is for good ones, and Mr. Flagg makes no secret of his opinion of road-making in his own country. The article is illustrated with a great many diagrams of the sections and structure of French and English roads.

Harper's contains an article on "New York—a City of Romance"; rather a new idea to connect with New York, but the title is somewhat justified by Mr. Pennell's illustrations of the effect of the high buildings seen at night. The towered buildings look romantic by daylight, too, in a distant view of the city, though they are perhaps less so when seen closer.

The *Reliquary and Illustrated Archæologist* (quarterly) contains some "Notes on the Old Palace of the Archbishops of Croydon," by Dr. J. M. Hobson, and an article on S. Ambrogio at Milan, by Mr. H. Elrington with some photographic illustrations. He goes, among other things, into the vexed question of the date of the main fabric, which has been variously placed as of the IXth, the XIth, and the XIIth century, we are certainly of opinion that the IXth is too early; but the question of its date depends on a great many considerations which it is impossible to treat briefly. The article sums up a good deal of information.

The *Church Builder* (quarterly) contains an article on the remarkable church of St. Mary, Whaplode, with a plan. The article is partly prompted by the fact that the church is in need of structural repair which will cost 1,500*l.*, only about half of which sum has been at present subscribed. It is to be hoped that everything will be done to keep in a secure state a building of such exceptional interest. Mr. Caröe continues in this, as in some previous numbers, the "Occasional Notes on Church Furniture and Arrangement," which were commenced by the late Mr. Micklethwaite. The present issue contains a number of valuable practical suggestions on roof coverings, windows, and walls.

The *Antiquary* contains an article by the Rev. L. Maule Cole on Wetwang Church, in Yorkshire, a small church of considerable interest, and with a curious font decorated with the late Norman form of interlacing round arches. Mr. Arthur Hussey commences a series of articles on "The Hospitals of Kent," commencing with St. Nicholas at Harbledown.

B. T. Batsford's New Books.

Crown 8vo, cloth gilt. Price **7s. 6d.** *net.*

THE GROWTH OF THE ENGLISH HOUSE. A Short History of its Architectural Development from A.D. 1100 to 1800. By J. ALFRED GOTCH, F.S.A., F.R.I.B.A. With 267 Illustrations from Photographs and Drawings.

This Handbook embodies the first-hand knowledge of an architect who is known as a life-long student of domestic architecture. The subject is dealt with systematically, yet clearly and simply, and without undue technical phraseology, so that all who are interested in it, whether they be architects, architectural students, craftsmen, antiquaries, or travellers, will here find help in their inquiries.

Large 8vo, cloth gilt. Price **21s.** *net.*

WINDOWS: A Book about Stained and Painted Glass. By LEWIS F. DAY. Third Edition, revised and enlarged. With 300 Illustrations of the finest historical examples of all countries and periods.

"The illustrations are all good, and some the best black-and-white drawings of stained glass yet produced. It is a book which reflects great credit on all concerned in its production."—*The Studio.*

"The book is a masterpiece in its way . . . Amply illustrated and carefully printed, it will long remain the authority on its subject."—*The Art Journal.*

4to, art linen, gilt. Price **25s.**

ENGLISH LEADWORK: ITS ART AND HISTORY. By LAWRENCE WEAVER, F.S.A. With 441 Illustrations from Photographs and Drawings of the chief Examples of Art scattered throughout England, and including many beautiful specimens of Rain Water Heads, Cisterns, Fonts, Spires, Domes, Statues, Garden Figures and Vases.

A handsome volume of the greatest interest to architects, antiquaries, and garden lovers.

New Volume of the Survey of the Memorials of Greater London. 4to, in paper covers. Price **25s.** *net.*

THE PARISH OF CHELSEA. Vol. I., including Paradise Row and the river front from the Royal Hospital to the Old Church. By WALTER H. GODFREY, Architect. Containing a full account of the ancient buildings, with 130 full-page and smaller Illustrations reproduced from Photographs and Drawings.

The Edition is limited to 600 copies, of which 300 are reserved for Members of the Survey Committee.

*** *Illustrated Prospectuses of the above and Full Catalogue of Books on Art and Architecture sent free on application.*

B. T. BATSFORD, 94, High Holborn, LONDON.

Digitized by Google

London: Printed for the Proprietors of "THE BUILDER" by HORACE COX at Windsor House Printing Works, Bream's-buildings, E.C., and Published by JOHN MORGAN at the Office of "THE BUILDER," No. 4, Catherine-street, Strand, W.C.—November 20, 1909.

THE BUILDER

VOL. XCVII.—No. 3486. NOVEMBER 27, 1909.

Contents.

	PAGE
On the Value of Westminster Abbey	573
Surveyors, Auctioneers, Estate Agents, and the Budget	575
Notes	575
Preston Corporation Secondary School	577
The Architectural Association	578
An Early American Concrete Bridge	582
The Architectural Association: Visit to Orient Line S.S. "Orvieto"	583
The National Trust	583
London Master Builders' Association	583
The Avery Architectural Library, Columbia University, U.S.A.	583
National Welsh War Memorial, Cardiff	584
Architectural Societies	584
Archæological Societies	585
Engineering Societies	585
Metropolitan Asylums Board	585
Meetings	586
Fifty Years Ago	586
Illustrations:—	
South Transept, Westminster Abbey	586
The Surveyors' Institution	586
St. Margaret's Hospital, Wimborne	589
The London County Council	589
Applications under the London Building Acts, 1894 to 1909	590
The Institute of Sanitary Engineers	590
Legal Column	591
Competition News	593
Books Received	593
Correspondence:—	
Mr. Norman Shaw's Soil-pipe System	593
The Disconnecting Trap	593
Builders Taking Out Their Own Quantities	593
The Areameter	593
London County Council Education Committee	594
The Tribunal of Appeal	594
Court of Common Council	595
Projected New Buildings in the Provinces	595
London and District Borough Councils	595
General Building News	596
Sanitary and Engineering News	596
Miscellaneous	597
Capital and Labour	598
Law Reports:—	
Action by a Builder	598
Patents	598
List of Competitions, Contracts, etc., Open	599
Some Recent Sales	602
Prices Current	602
Tenders	603

Illustrations.

The South Transept, Westminster Abbey. From Drawings by Mr. C. A. Bassett-Smith.

1. The Interior End Elevation.
2. Plans of the same at different stages.
3. Mouldings and Decorative Details.

Illustrations in Text.

	PAGE
An Early American Concrete Bridge	582
Sculpture from the Welsh National War Memorial. Mr. Albert Toft, Sculptor	584
The Surveyors' Institution: "Town Planning Systems":—	
Evelyn's and Wren's Plans	587
St. Margaret's Hospital, Wimborne	589
The Areameter	593

On the Value of Westminster Abbey.

It is well now and then to have our thoughts directed to a fresh consideration of some great architectural monument which has been familiar to us all our days, and which becomes from that very cause almost too well known and too generally accepted for its real greatness to strike us as it would if we came to it as a monument seen for the first time. This is somewhat the case with Westminster Abbey. Partly because of this familiarity; partly because the exterior has unavoidably been a great deal restored; partly because the western façade is somewhat weak and completed with towers which are not in harmony with its style, and the north transept a work of modern Gothic (though very fine as such)—for these combined reasons we are apt to feel less enthusiastic about it than about such cathedrals as Peterborough, Lincoln, Durham, and Salisbury, all of them more homogeneous and striking in their exterior architecture than Westminster, besides having, in three out of the four cases at least, peculiar effectiveness in regard to site—Durham and Lincoln seated on the crests of hills; Salisbury rising from that expanse of level lawn which gives such effect by contrast to its aspiring lines. The magic of Westminster lies more in its interior than its exterior; it is after wandering about that in some hour of leisure, tracing out its history and comparing its multifarious features with each other, that we seem to realise afresh what a wonderful building this is which we habitually call "the Abbey," and which we are apt to forget somewhat from the very fact of the familiarity of its name and presence.

It seems to have been with something of this feeling—the desire to recall to mind the great and endless interest of Westminster Abbey both in the architectural and the historical sense, that Mr. Bond has produced his book, the latest addition to the somewhat extensive literature connected with the subject.* This is neither a purely architectural study nor a historical essay; it partakes of the nature of both; and though the author is not an architect, he has sufficient knowledge of architectural structure to treat that portion of the subject in a satisfactory manner; though he knows more about Gothic than he does about Classic architecture, or he would not have made a contemptuous reference to the Parthenon (as contrasted with a Gothic cathedral) as having windowless walls "and a hole in the roof to admit light, or a roof that was all hole." The "hypæthral" notion of the Greek temple is entirely exploded now, and it is all but certain that it was lighted from the doorway.

In the first place, after giving what history is available in regard to the first abbey at Westminster, that of Edward the Confessor (or perhaps we should rather say the second, as there was certainly a Saxon church before it), the author takes a very interesting and rather new line in his endeavour, in connexion with sketch plans of the church at three different dates, to enable the reader to realise to some extent what was the actual practical use of the church and the meaning of some of the details of its plan. For there are various peculiarities in the plan of Westminster. In the first place, the principal or most important entrance, architecturally, is not, as usual, at the west end, but in the north transept, where was placed the triple porch with deep recesses which is so usual a feature in the west front of French cathedrals, but which is here placed in the transept, while the west front has (most unusually) only one not very important portal. The explanation probably is that the portals of the south transept would be on the side nearest the royal palace, and thus formed a kind of state entrance to the church, easily accessible. A curious point is also that while the most eastern of the three portals has no actual doorway, a line of chapels being behind it, there is nevertheless a doorway into this chapel or leading through it, round the angle of the transept, on its eastern side; a doorway now unused and seldom noticed. To know the meaning of this door we should have to restore the plan of the conventual buildings at the time the church was built; the author does not suggest the use of the door in this unusual position, but he calls attention to its existence, which is often overlooked and is not even shown on most plans of the church. Another very unusual feature in the plan of Westminster is that although there are two aisles to the north transept, in the south transept the site of what should have been the western aisle is occupied by part of the east walk of the cloister, proving that the Norman cloister existed when the transept was built, and it was not desired to disturb its plan. It is also singular, as the author observes, that in the eastern aisle of the same transept there are no chapels, which is a position in which one would naturally have expected to find them, especially as they occur in the eastern aisle of the north transept. On the other hand, to remark on the absence of altars in the western aisle of the latter transept is rather superfluous; they would not be likely to be found in that position. The small doorway on the north side of the nave (fifth bay from the crossing) is probably connected with the extensive sacristy,

* *Westminster Abbey.* By Francis Bond. Pp. 318. London; Henry Frowde; 1909. 10s.

Digitized by Google

long since destroyed, which Henry III. is known to have caused to be erected adjoining the north side of the nave.

The author analyses the requirements of the plan in three chapters, headed respectively "Planning for the Monks," "Planning for Pilgrims," and "Planning for Royalty." In the first he has endeavoured to realise the order of service and of processions on great occasions, and to show how various features in the plan were either intended for, or fell into the scheme of, the ritual observances of the monks. Planning for pilgrims is not suggested to have been more than providing grilles and gates to keep them from doing mischief or going where they were not wanted. As "to planning for royalty," the most interesting point suggested in that connexion is the reason for there being no chapels in the east aisle of the south transept, viz.: that it was part of the royal processional route; the author's theory being that on the occasion of great functions the royal procession would enter through the north transept door, proceed down the north aisle of the nave as far as the sacristy door; turn to the left and enter the choir through the choir screen, up to the raised seat in the sanctuary, and after service would proceed through the east aisle of the south transept to the door in what is now known as Poets' corner. The theory serves at least to explain the absence of chapels, and to give a practical turn to the planning. On the other hand, we do not see that the present chapter-house necessarily arose, as the author suggests, from the encroachment of the new south transept on the Norman chapter-house. The southern wall of the transept would have about coincided with the northern wall of the chapter-house. But the desire was to have a more spacious and more architecturally effective chapter-house, and the quadrangular plan of chapter-house was, moreover, manifestly going out of fashion.

In the chapter on "Principles of Design" the author perhaps finds out a little too much, especially in undertaking to show that 511 ft. was just the right length for the church, and that the side-aisles were narrower than the centre because they were only for passage. For that purpose a much narrower aisle would suffice, as we see in many modern churches where the aisles are reduced to mere passages. The three-aisled arrangement, and the proportion of side-aisles to centre space, are not so much the result of any practical intent, as the conformity to long precedent, descending from the days of the basilica. The reason given for the comparatively close spacing of the piers at Westminster—that they followed the position of the previous Norman piers, is very likely the right one. The chapter is hardly one for architects, but in a book manifestly designed for the general reader it is a useful one, as at all events suggesting to them that there is reason in architectural design, and that it is not mere chance, although precedent has more to do with it than the author seems disposed to recognise. The analysis of the French and English element at Westminster is well carried out, and we agree with it in the main, except that we cannot regard the two capitals given on page 107 as manifestly French work; the left-hand one is completely French in manner, but the right-hand one, with the naturalistic foliage, is much more like English work, and recalls the Southwell carving. That "the church was planned and designed by an architect practising in France," though not proved, is at least probable. It has far more of the French element in it than any other English cathedral.

The author's remarks as to the intended arrangement of Henry VII.'s chapel by its founder, and the present arrangement due to Henry VIII. or his artists, are of some interest. A rough plan is given showing his idea of the originally intended arrangement. We may quote part of the description, which is stated to be based on the Will of Henry VII.; but if so, it might have been better to quote the precise wording of the will:—

"It was to contain a chapel of Our Saviour, or, as he calls it in an indenture with Abbot Islip, 'a closure of metall in maner of a Chapell'—*i.e.*, a chantry chapel constructed of bronze, but designed with buttresses, window tracery, pinnacles, etc., just as if it were of stone. At its east end was to be the altar of Our Saviour; its position may still be identified by the blank space where the running inscription inside the grille stops, and by the presence of a beam above to give support to a tester. Between the altar and the tomb room was left for the chantry priests to stand. The western part of the enclosure was to be occupied by the tomb below which Henry was to be buried, and to which the body of his Queen, Elizabeth of York, was to be transferred. This bronze chantry chapel, he says in his will, was to stand in the centre of the stalls. And it was because the bronze 'closure' is so broad, that Vertue had to make his nave broad, and the stalls narrow. . . . Sufficient space had to be left between the stalls and the grille to allow those in the stalls an uninterrupted view on either side of the grille on to the altar of Our Lady. As for this altar, so that it might be well seen from the stalls, it was to be placed much further east than it is now. Finally, there was the site to be allotted to Henry VI. The precedent of St. Edward's chapel was followed, where the shrine of the Confessor is placed at the back of the altar of St. Peter, but at some distance from it. So here Henry VI.'s tomb was intended to be placed east of the altar of Our Lady, and quite clear of it. . . . As one sat in the lofty stalls, one would have seen in front the magnificent bronze chapel of Our Saviour, which would have occupied so much of the nave that the latter would no longer have seemed unduly broad; then well to the east the altar of Our Lady, with a reredos probably kept low; then, towering up and behind it, the lofty chantry chapel of Henry VI., with his tomb below."

Henry VIII. is credited (or discredited) with having altered all this, and certainly Mr. Bond's description gives one the idea of a much finer climax than now exists in the chapel, and everyone must regret the insertion of the classical altar at the western end of the grille; the one thing there which is out of keeping with the rest. As to the chapel itself, taken as a whole, we hold that it is one of the most wonderful achievements of art that the world can show. A whole cathedral carried out in the same style would of course be wanting in breadth and grandeur; but the chapel must be regarded as what it was meant for—a kind of shrine, on which the greatest richness of detail was to be expended. We doubt if it is thought half enough of by Londoners. There is nothing in Paris to equal it; and we have had the judgment of a French critic to the same effect.

We are very much in sympathy with Mr. Bond's remarks, in Chapter XVII. and elsewhere, on what he calls "the mainspring of Gothic architecture," at all events as shown in such a building as this; the desire to produce something great and glorious, entirely independent of its mere practical use. As the author says on another page, "when we see a large modern church we know that it has been built for a large congregation; if we see a small one, we know that it is for a small congregation." But there was no such play of cause and effect when churches like Westminster Abbey were built. They were not suited to the size of congregations; they were made glorious for their own sake. "Let us," says Mr. Bond, "who are heirs to its glories, cease to regard and treat the Abbey as a public cemetery and sculpture gallery." We may cease to regard it as such, but the "treatment" of it as such has been done for us already. That the church is very much spoiled by the mass of often vulgar and incongruous monuments crowded into it, is pitiably true; but we cannot remove them now; they are part of history, both private and public. They were placed there at a time when people had no understanding of the beauty, either spiritual or artistic, of mediæval architecture, and thought their own monuments of much more importance. One can imagine how astonished Nelson would have been had anyone told him, when he uttered his memorable aspiration for "A Peerage or Westminster Abbey," that his monument might be an injury to the architectural effect of the Abbey. He could probably hardly have even understood the point of such an objection. Some of the author's remarks on the monuments, however, are open to question. He scoffs at the statue to Watt as that of a man "who made some improvements in the steam-engine." Watt invented the steam-engine, which is a large enough achievement for a monument, though we admit that the colossal figure is a hulking lump of a thing, and one is glad it is not in a prominent position. To call the Nightingale monument "the most abominable thing in the Abbey" is an exaggeration; it is too sensational, but it is the work of a sculptor of genius, which cannot be said of many of the monuments. We should have thought the small monument to Major André, with its refined architectural design (by Robert Adam) and well executed small figure subject in relief, was worth recognition; and Mr. Gilbert's monument to Fawcett, with its row of little symbolical figures beneath the portrait medallion, one of the most beautiful and poetic of modern monuments, deserved something more than casual mention as "a bronze to Fawcett." Few visitors know of this beautiful work, and its artistic value ought to have been pointed out. And in speaking of the south cloister walk, mention might have been made of the neatly-cut gravestone in the cloister walk (also known to few) to the memory of Clementi, the distinguished musician whose curious fate it was to be born in Italy, to make his fame in Germany, to spend the latter years of an honoured life in London, and to be buried in the precinct of an English cathedral.

In the present issue we give, as our lithographic plates, a very fine set of

Digitized by Google

measured drawings of the south wall of the south transept, by Mr. C. A. Bassett-Smith, which were purposely selected to appear in the same issue as this article, and form an illustration of its subject.

We observe that in the preface the author quotes the remark of Sir Lucius O'Trigger in "The Rivals"—"there's very snug lying in the Abbey," as a proof that the great church was then, as now, familiarly spoken of as "the Abbey." This is a mistake, though a very common one. The scene of "The Rivals" is laid in Bath, and the Abbey which Sir Lucius proposed as a place of interment for his friend was, of course, Bath Abbey church, not the more historic building at Westminster.

SURVEYORS, AUCTIONEERS, ESTATE AGENTS, AND THE BUDGET.

THE mass meeting of surveyors, auctioneers, and estate agents, held at the Cannon-street Hotel last week, came at a very opportune time. The public still have a very imperfect idea of what the land clauses in the Finance Bill involve, and the unanimous testimony of such a body of men as were assembled at that meeting should surely carry considerable weight. It was not a meeting of landowners, or of persons necessarily holding security on the land, neither was it a political gathering; on the contrary, it was a non-political meeting of those professional classes who, if the Finance Bill was carried, would derive direct benefit from the vast increase of work which would be placed in their hands. If all the land has to be valued, every private individual would require professional advice; and, as was pointed out at this meeting, the Bill has been described as "an Auctioneers' and Surveyors' Endowment Bill."

What is the testimony of these men who certainly have personally nothing to fear from the Bill, and indeed who might be expected to have a prejudice in its favour? They testify that its effects will be disastrous to the nation, that it is destructive of all confidence in what has hitherto been the premier security for investment; that the development of land for building will be seriously interfered with and to a great extent stopped, and that capital will be driven out of the country. But this is not all. These gentlemen embrace those most qualified to express an opinion on the feasibility of the valuations proposed; and they declare the proposals to be ill-conceived, unworkable, and often unintelligible; that the valuation of site values as is proposed apart from buildings would be purely theoretical; and that an enormous expenditure would be involved.

The Finance Bill has been put forward as having a principle involved in it beyond the mere raising of money; its authors assert that it will stimulate building development. It may then well be asked—Why has its shadow, only, caused such protest from another class who should, if that contention be true, have much to gain from it—the builders? And why has it paralysed the building trade? It was stated at the meeting that the accounts supplied by more than 1,000 builders showed a reduction of from 35 to 40 per cent. in the wage bills, and we have drawn attention week by week to the protests raised by the building trade from all parts of the country. It is to be hoped that such a body of testimony from those classes who speak without prejudice against the Bill, and who are supposed to be those most likely to benefit by its provisions, will carry more weight than the assurances of politicians who have no practical knowledge, and whose party interests are seriously involved in the measure. If the builders are not benefited by the measure, what becomes of the Government's assurances that development will be stimulated?

NOTES.

Contractors and Quantities.

IN reference to our article of a fortnight since (page 513 *ante*) on "Architects' Charges and Builders' Quantities," we find that some of our friends the builders object to our having referred to the subject of the non-supply of quantities as having been "discussed with some bitterness." In reading a report of proceedings one may get a different impression from the written words from what one would have got from hearing the speeches; the stress apparently laid on the word "hardship" gave the impression that there was a tone of complaint in the discussion; we are assured, however, that this was not so (or not so intended), and that the Master Builders' Association were desirous of putting their side of the case before the architects in the most friendly and conciliatory spirit. In remarking that there could really be no hardship in a builder taking out his own quantities, seeing that he could add something to his estimate to cover it, of course we were referring to single tenders, not to competition tendering, in which case only the successful tenderer could get any return for his quantities, and probably would not, as he would have to tender low to insure success. Equally of course, ten persons taking out the quantities for the same building (from duplicated drawings) would be a waste of labour. What we wished to point out was that the quantities are, after all, essentially and originally the contractor's business and not the architect's or his client's; that the present position is an artificial one brought about by the system of competition tendering. We have reason to believe that many builders would be only too glad that competition tendering should be wholly or partially abandoned, and a fair estimate asked for from one builder, to be accepted or not on the judgment of the architect; and such a custom would be far better for good architecture and good building. If wealthy corporations or individuals could only bring themselves to consider, when proposing an important building, not, "How can we get it done *cheapest?*" but "How can we get it done *best?*" the result would be better, in the long return, for all concerned—architect, builder, and building owner. Never in the history of architecture has cheap building been worth much.

Profitable Forestry.

EVERY department of German industry is notable for the thorough manner in which scientific knowledge has been applied. Forestry is no exception, and the results attained have been remarkably satisfactory. Of the 35 million acres of forest land in the Empire, about half belong to the State and public authorities, the bulk of the remainder being owned by private individuals. The practical value of systematic forestry is well shown by the returns for Government forests in Saxony, where the expenditure is about 8s. per acre, and the net revenue 21s. per acre. It is interesting to compare these figures with statistics quoted in a United States Bulletin, concerning the national forests, where it is stated that in 1905-6 the expenditure was ·33d. per acre, and the net revenue a deficit of ·005d. per acre; while for 1906-7 the expenditure of ·43d. per acre resulted in the net revenue of ·04d. per acre. In Wurtemburg the net revenue averages 24s. per acre, and even more profitable returns are secured in several smaller States. Austria, Hungary, Italy, and Switzerland have also reason for regarding outlay on tree cultivation as an excellent investment, and we trust that in due time similar experience may be furnished by the United Kingdom.

Trades for Boys and Girls in London.

THE Education Committee of the London County Council have made an interesting report on what it terms "apprenticeship"—that is to say in general words the training for trade purposes of those who have just left school. At present the situation is not as satisfactory as it should be, but one must remember that Rome was not built in a day. From the returns it is proved that little more than a third of the children when they leave an elementary school enter on a skilled occupation. The truth is that even after recent changes the opportunities for skilled education by those who have immediately left elementary schools are still insufficient. The so-called "half-time classes" also are naturally unpopular with employers, and many parents prefer that a boy on leaving school should at once earn some wages, however small, in an unskilled capacity, thereby handicapping his future, rather than that he should obtain technical education with a certainty of higher pay in years to come, and in the meantime be on his parents' hands. The problem is one of much difficulty, and it is chiefly by impressing on parents and pupils the advantages of a proper technical education that improvement can be made.

Smokeless Fuels.

THOSE who are not satisfied with gas as a fuel need not now resort to smoke-producing coal, for several forms of solid smokeless fuel are being offered this year to householders. All who are in sympathy with the smoke abatement movement should give one or other of these a fair trial. The latest smokeless fuel is called "charco," and consists of coke which is almost free from water. Ordinary coke is withdrawn from gas-retorts in a red-hot condition and is extinguished with the aid of water. "Charco" is coke which has been

Digitized by Google

extinguished by being smothered with dry coke breeze, and then separated from the breeze. When burned in an open grate it burns more readily and more cheerfully than wet coke. One of the chief objections to ordinary coke as a household fuel is the fact that it often contains over 10 per cent. of water; and the presence of this water makes it difficult to maintain a cheerful fire, and causes the coke to make an objectionable crackling noise while it is being heated. Another new fuel is called "coalexld," and this consists of coke produced by treating the coal in the retorts with certain chemicals. "Coalite" and "carbo" are forms of smokeless fuel which have been in use for some time. They are produced by carbonising coal less completely than is usual when the manufacture of gas is the principal object of carbonisation. These two latter fuels may be regarded as soft coke, and they burn with more flame and make a more cheerful fire than ordinary gas coke. Most of the coke sold by gas companies is used for industrial purposes, but probably more would be used as household fuel if the gas companies would sell broken coke guaranteed to contain less than 2 per cent. of water.

Portland Stone. WE have received from Mr. F. J. Barnes a paper read to the Incorporated Clerks of Works Association on "Portland Stone," with special reference to the variety which outcrops on the top of Portland. Although strata belonging to the Portlandian series appear along a large part of the Dorset coast and run inland through Somerset, Gloucester, Buckingham, Huntingdon, and finally disappear on the east coast of Yorkshire, none of them yield building stone possessing the same value as that quarried on the Isle of Portland. The author states that even the Portland stone found on the coast of Dorset only three or four miles from Portland itself, and being in every other respect identical, is an unmarketable commodity. A considerable part of the paper is devoted to an explanation of this somewhat curious fact. Mr. Barnes attributes the superiority of the local product to the silicious kernel forming the nucleus of the oolitic granules cemented together by carbonate of lime. Hence, he argues, if the calcareous envelope becomes split the insoluble core remains unaffected and the durability of the stone is not destroyed, as happens in the case of stone consisting of earthy materials readily disintegrated by exposure to the air. There is a good deal of interesting matter in this paper concerning the origin of Portland stone; relics of Roman, Saxon, and Danish occupation; and some ancient institutions still attached to the Royal manor of Portland.

Measuring Slating and Tiling. WE have received a complaint from a builder as to a circular of new rules for measuring up slaters and tilers' work (codified by the principal master slaters and tilers) to the effect that no notice has been given of these rules, the immediate application of which would considerably prejudice builders in regard to work at present in hand. We can hardly think it competent for two parties to enter into an agreement where a third party (in this case the builder) is concerned, without reference to that third party. Under any circumstances, in our opinion any contract entered into on the terms obtainable before the issue of the notice and circular referred to, would stand, and we greatly doubt whether it would be possible to enforce the system now proposed on the ground of "trade usage," without a considerable length of time being allowed to elapse for the completion of existing contracts. We cannot agree with the statement in the covering letter of the Hon. Secretary of the Special Committee that "with but small exceptions the two lists merely codify the measurements which have for many years past been customarily taken for all work in the south of England," and we can conceive cases where the system now proposed would make a considerable addition to the cost.

Coke Breeze Concrete. SOME recently-published tests by Mr. T. M. Lewis, Engineer to an American Coal and Coke Company, bear upon the compressive strength of coke concrete. The breeze used was made up in the form of columns, 30 in. long by 8 in. diameter, which were tested in a Riehle machine at Cornell University. The average breaking loads per square inch for different mixtures of concrete were as follows:—(1 : 2 : 3) 339·8 lb.; (1 : 2 : 4) 350·4 lb.; (1 : 2½ : 5) 315·3 lb.; (1 : 3 : 6) 237·5 lb. Mr. Lewis quotes for comparison the subjoined average results obtained by Professor McCausland with stone concrete:—(1 : 2 : 3) 374 lb.; (1 : 2 : 5) 296 lb.; (1 : 3 : 5) 301 lb. Of course, it is always unsatisfactory to compare tests of concrete made at different places and under different conditions, but the figures quoted show that coke concrete possesses considerable resistance to compression if carefully mixed and handled. The author admits that iron and steel corrode very rapidly when in contact with wet coke, and the consequent danger of that material as a constituent of reinforced concrete, two points which we hope will not be forgotten by architects and builders.

The Illuminating Engineering Society. THE inaugural meeting of the first session of the Illuminating Engineering Society was held in the hall of the Royal Society of Arts on the 18th inst. This Society has been founded with the object of investigating the various problems connected with the adaptation of light to the uses of man. It is hoped that many architects and surveyors will join the Society. Professor Silvanus P. Thompson, in his presidential address to the meeting, suggested that the Society should appoint a committee to draw up a lighting specification for the guidance of architects. We do not think that any such specification can be more than a rough general guide, for every building requires different treatment, and there will never be any general agreement as to what is the best artificial illuminant or what is the most suitable intensity of light for the use of the human eye. Nevertheless, the work of the Society should be watched and supported by all who are concerned with street lighting or the provision of artificial light in buildings.

Electric Lighting. THE paper on "The Present Aspect of Electric Lighting" which was read this week by Messrs. Handcock and Dykes to the Institution of Electrical Engineers is both useful and timely. They point out that the general use of metallic filament lamps has had the effect of diminishing the total receipts of most of the electric supply companies, although as a rule they have had to increase their lamp connexions. The average consumer, although the candle-power of his lamps has been increased, now pays much less to the company. In particular in those cases where "free wiring" has been adopted and the consumer pays for it by a small percentage on his meter bills the loss to the company has been serious. The authors therefore think that some remedy must be found if the electric-lighting industry is to be placed on a proper commercial basis. They suggest that this can be done by introducing a proper method of charging for the electric light. At present the consumer wants light, but is charged for electric current. They propose to charge the consumer a fixed sum per lamp per annum, quite irrespective of the number of hours it is used. This would avoid the necessity of meters and save a great deal of clerical work at the station. The objection may be raised that without the restriction of the meter bill the consumer will waste the commodity. As the authors point out, however, if this objection were valid the present system of water supply in London would be an impossibility. In the electric-lighting case the consumer who was always writing for lamp renewals would naturally be suspected of wasting current, and could be dealt with specially. Special lampholders would have to be used so that the 25-candle-power lamp supplied by the company could not be replaced by, for example, a 100-candle-power lamp. A method somewhat similar to this has been introduced at Harrogate, where small consumers are charged a fixed sum of 11s. per lamp per annum. If the light is only required from dusk to dawn, or during "periods of unusual darkness," the charges per lamp can be appreciably reduced. One great advantage of the author's method is that any improvement in the efficiency of the lamp will be of benefit to the supply company, and not, as at present, a loss to them. We think that this system will be of special use in extending the use of the electric light in small cottages in outlying districts.

Mulberry-street Viaduct, Harrisburg. BUILT to replace a steel bridge injured by fire several years ago, the reinforced concrete viaduct at Harrisburg comprises arches of various spans ranging from 40 ft. to 100 ft. carried on concrete piers. The viaduct proper is 1,800 ft. long by 44 ft. wide between parapets, the total length including an inclined approach being 2,400ft. This is the longest reinforced concrete bridge hitherto built, and with the exception of the Pont d'Esprit, near Lyons, commenced in A.D. 1265, it is the longest arched highway bridge

Digitized by Google

standing to-day. The magnitude of the work will be brought home to our readers by the statement that the Mulberry-street Viaduct is twice as long and exactly the same width as Westminster Bridge, another point worthy of note being that its cost was little more than one-eighth that of the latter structure. While a few people in this country profess lack of confidence in reinforced concrete as a trustworthy material for bridge building, American engineers are busy in the construction of monumental bridges and viaducts in that combination, which has in reality long since passed through the experimental stage. The Mulberry-street Viaduct was designed by Mr. James H. Fuertes, Consulting Engineer to the Harrisburg Board of Public Works.

City Planning in Pittsburg.

AN important body recently formed in Pittsburg, is the Civic Commission consisting of sixteen members, with an advisory board of engineers. City planning is one of the subjects engaging the attention of the Commission, with the object of enabling the community to regulate the growth of the industrial district on satisfactory lines. Closely associated with the question are those of railway extensions, main thoroughfares, and street railway operation, all of these reacting upon the design of new districts. The planning of local streets, the acquisition of land for parks and other open spaces, a study of the flood problem, water supply and drainage requirements, and the control of private building estates, are among other matters about to be investigated. Finally the Commission are inquiring into the financial, legal, and political situation affecting the provision of funds for improvement works. So far as we can judge, the municipal authorities appear to have set themselves a very big task, something like that awaiting our own long-expected Traffic Commission, with the duties of City planning thrown in. American cities are fortunate in being able to take action with regard to various important local matters, instead of having to wait for authority from an over-burdened Legislature, as happens in this country.

De La Hay-street, Westminster.

THE sale of the fittings and appointments, and they are of a highly ornamental and costly kind, of six houses in this street is a prelude to the demolition of the property for the erection of Government offices. The houses, now numbered 11, 13, 17, 19, 21, and 23, stand on the west or park, side; see the plan in our issue of October 3, 1896. No. 19 was built after W. Butterfield's designs; Nos. 13 and 17, by Messrs. Isaacs & Florence, have replaced Nos. 13, 15, 17, and the fine shell canopy over the doorway of (old) No. 17 was preserved and refixed (painted in white) in the new building. This, the northern, portion of the street was formerly styled Duke-street, in which stood the State Paper Office, built in 1829-33, after designs by Soane, and pulled down in 1862 to make room for Scott's India and Foreign Offices. The street was a fashionable quarter in its day; in his "NewView of London," 1708 Hatton describes it as being "a spacious and pleasant street between St. James's Park, north, and Long Ditch, south, mostly, especially the west side, inhabited by persons of quality." Bishop Stillingfleet, Archbishop Hutton, Pope, and Dr. Arnold, the composer, lived there; and Matthew Prior in a house opposite Charles-street. On the north side of Chapel-place, No. 2, St. James's-lodge, occupies the site of Duke-street Chapel, converted in 1769, *teste* Timbs, out of the justice-hall of Lord Chancellor Jefferey's's house (on the site of Nos. 7, 9, and 11, and pulled down in October, 1892), to which he added the two wings, with the range of steps, giving access into the park. The addition of the steps was a great privilege conceded by James II.; one of the two flights yet remains.

Vandalism and Anti-Vandalism.

WE regret to learn from statements in the daily papers, that all the efforts and representations that have been made to avert the destruction of Bath-street have been of no avail, and the demolition of the houses has been commenced. It is to be feared that is only a first step in the destruction of the unique character of Bath as a city; for an example of this kind is seldom without imitators. On the other hand, it is satisfactory to find that the Whitgift Hospital at Croydon has at all events been saved for the present. At a special meeting of the Croydon Borough Council on Monday, to consider the promotion of a Bill for powers to widen North End by removing the hospital, letters against the proposal were read from various archæological societies, and Mr. Pelton pointed out that the Royal Commission had virtually scheduled Whitgift Hospital as worthy of preservation, and that no Parliamentary Committee would sanction its destruction. In spite of this, twenty-five local representatives were willing to destroy the only building of historic interest in Croydon for the sake of widening a short piece of street. Fortunately twenty-nine righteous were found to vote against them, and so this stupid scheme of demolition has been stopped for the present.

PRESTON CORPORATION SECONDARY SCHOOL.

THE Corporation of Preston has held an open competition for a secondary school to be called "Preston Grammar School," and to be situated in a fine position overlooking the park. The site is an elongated one, 650 ft. by 108 ft., and the principal frontage, in which was to be placed the main entrance, faces across the park due north. The school is to accommodate 250 boys and to be in every way a complete and fully-equipped secondary school with a junior section, which was to be "planned so as to form an integral part of the school, and yet allow (if necessary) of different times of assembly, dismissal, and recreation without undue interference with the rest of the school."

The Corporation, while "desiring to study economy," suggest that stone should be freely used on the principal façade, and express a wish for a dignified design expressing the character of the building and its plan.

As regards the general plan of the school, a large assembly hall was to be provided of sufficient size to accommodate all the pupils, and corridors were to be avoided as much as possible—where used they were to be short, well lighted, and of sufficient width to allow space for exhibition, designs, models, etc. This requirement, together with the enumeration of rooms wanted, without any special stipulation about isolation of manual instruction room or gymnasium, practically formed the basis upon which the plan was to be built up. The chemical laboratory was to be placed on the first floor, but the physical laboratory to be left to the discretion of the architect. It will be seen, therefore, that the conditions were left in a very general state, leaving room for a considerable variety of treatment. Out of the 170 designs submitted, however, there was one type of plan which seemed to emerge as the general solution of the problem. The plan was symmetrical and consisted of a long, almost unbroken frontage to the south, along which were placed the classrooms; to the north of this range came a corridor which merged in the centre of the plan into the assembly hall; the latter, forming a large projection to the north, had a one-story block in front forming the main entrance and administration portion, with specialising rooms grouped to the east and west of it. It almost invariably followed in this typical scheme that the south, or less important, elevation was considerably more satisfactory than the north elevation to the park, which was broken by the different heights of hall and side wings and the various projections. There were quite half a dozen excellent plans submitted on these lines, any of which would have made a first-rate working school.

The assessor, Mr. Catterall, of Preston, has placed the designs submitted by Messrs. Woolfall & Eccles (of Liverpool) first, Mr. Greenwood (of Manchester) second, and Messrs. Packer, Drewitt, & Drewitt (of Southport) third.

Messrs. Woolfall & Eccles's plan is not on the lines of the typical plan already described, and we feel that it is largely the external appearance which has attracted the assessor. We may say at once that of its kind it is exceedingly well done. It is a heavy mullioned, battlemented Tudor design, recalling some of the old grammar schools found in the south of England—at Wimborne, in Dorset, for example. The plan to suit this Tudor style is distinctly irregular. The main entrance on the north front is to one side in a low gate-tower with a lofty oriel window over it; this feature is roughly balanced on the other side by a tall bell turret with a leaded cupola; between come the many transomed windows of the hall, which is lit to the ground, with a large bay in the middle recalling the dais bay window of the old mediæval hall; lower irregular buildings on either side of the towers complete the group. To the right of the main block is a long line of low buildings which cut the playgrounds longitudinally into two halves; this wing, which has a covered way on either side, includes first a closed-in court, then a vast bicycle shed (kept so large because in the future it is to carry over it the two additional classrooms), next the latrines, and finally the manual instruction room with the gymnasium over. In the main block corridors have been freely indulged in, in spite of the conditions. Not only is the assembly hall inclosed on three sides with insufficiently lighted corridors, but the two covered ways are continued through the main building to meet one of the cross corridors forming the separate approaches to the assembly hall for senior and junior boys. In fact, the whole plan reflects the mediæval character of the fronts; it is picturesque and interesting, but hardly that of a modern school. The lighting of the classrooms, for instance, appears to us inadequate, the jamb of the windows being 4 ft. 6 in. from the interior angle of the wall. The actual position of the various departments—the isolation of the juniors, the position of the chemical laboratory, etc.—is good, but then this extravagant multiplication of corridors greatly assists such separation and grouping; the problem was to do it with the minimum of corridor and the best lighting. The playroom, which

Digitized by Google

was to be placed in the basement and was to be the size of an ordinary classroom, is shown in the winning scheme 74 ft. by 30 ft., the size of the assembly hall. Of course there is no objection to a large playroom, except the "desire to study economy as much as possible." Unfortunately no reports or cubing were shown at the exhibition of drawings, so that we had no means of comparing the size of this scheme with that of others; but we should imagine that the contents with the large corridor space must be high, and the price per cube foot, including stone-mullioned windows throughout, could not be low.

The second premiated design, by Mr. A. T. Greenwood, shows a symmetrical and elongated plan. Practically the whole of the school is placed on the ground floor; the art-room, dining-room, and boys' common-room alone being on the first floor. The chemical and physical laboratories balance to the north, and the classrooms are all to the south. Future extension is well arranged for on either side of the hall on the first floor. Most of the specialised rooms are too small—the physics and chemistry rooms contain benches for twenty instead of the thirty asked for. The elevations are not particularly attractive, and the interior of the hall is overburdened with a long and heavy colonnade of unrefined design.

The third premiated design, by Messrs. Packer, Drewitt, & Drewitt, represents a good example of the typical plan before described. The classrooms range on the south side, with the cloaks and latrines for seniors and juniors at the extreme end of either wing. On either side of the hall are grouped the manual instruction room and gymnasium, and the physics and chemistry rooms. The position of the manual instruction room along one side of the hall is perhaps open to objection, and the junior classrooms open direct off the hall without any means of separation. On the whole, however, we like this plan the best of the three premiated, and the elevations are simple and school-like. Messrs. Russel & Cooper's plan was also on the same lines, and their elevations more attractive with the exception of an unfortunate central regimental pediment.

Perhaps the best plan on these lines, and one of the best plans we ever saw for a secondary school, was submitted by Messrs. Wills & Anderson. Their chief characteristic, as compared with the typical plan, was the placing of two cross-wings at the ends of the long range, containing *not* entrances and latrines, but chemistry, lecture-room, and physics on one side, and gymnasium, dining-room, and manual instruction room on the other. This arrangement would work excellently, and the whole school appeared to be thoroughly well planned. The elevations were very quiet but dignified.

Among designs on rather different lines was noticeable a very economical and simple plan by Messrs. Shepheard & Bower (Liverpool). In this case the corridor was taken out from the north side of the hall, giving the great projection to the south side, and the classrooms, being placed on three sides of the central hall, were not all exposed to due south light—this would be a distinct advantage in hot weather. At either end of the wings are the chemistry and manual room on the ground floor, and the physics and gymnasium over. The elevations were good, and there was a considerable degree of richness about the front entrance.

The distinctive characteristic of Mr. F. Q. Farmer's (Liverpool) scheme was the placing of all the classrooms on the assembly hall floor. In order to do this he used a sub-ground floor containing cloaks, dining-room, kitchen, common-room, workshop, and gymnasium. This produced a compact block for the building, and there was ingenious lighting to the staircase from the ends of both flights.

It was rather interesting to observe several sets of drawings taken almost directly from well-known types of schools—one of Mr. Arnold Mitchell's especially, which has been illustrated of late. The authors of these borrowings were fairly safe on the small scale ($\frac{1}{16}$-in.) drawings, but entirely came to grief on the $\frac{1}{2}$-in. detail, which showed a want of acquaintance with the treatment of architectural detail.

The drawings were on view in the Harris Institute at Preston on Friday and Saturday, November 19 and 20.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary fortnightly meeting of the Architectural Association was held on Friday last week at No. 18, Tufton-street, Westminster, S.W., Mr. Henry Tanner, President, in the chair.

The minutes of last meeting were read and confirmed, and the following gentlemen were elected as members of the Association, *i.e.*, Messrs. W. B. Stedman, Crouch End; R. G. Hopcraft, London; and W. Paramor, Brixton.

It was announced that a Debating Society meeting will be held on November 26, when a paper on "Competitions" will be read by Messrs. W. G. Wilson (on limited competitions) and K. Gammell (open).

The Architecture of the Incas of Peru.

Mr. C. Reginald Enock, F.R.G.S., then read the following paper on "The Architecture of the Incas of Peru":—

"A study of the architecture of the Incas of Peru takes us back into the interesting—almost fascinating—past of what we now call the "New" World. Upon the plateaux and slopes of the great snow-crowned Cordillera of the Andes, fronting upon the boundless Pacific Ocean, towards the setting sun, we encounter a series of ancient buildings and stone structures so remarkable as can only be compared with those of the Nile; to which, indeed, they have a certain analogy, as we shall see.

Topographical Conditions.

First of all, let us briefly consider—and it is necessary to a proper understanding of the subject—the topographical conditions surrounding the old Empire of the Incas. As we approach Peru from the sea we are confronted with a long, sterile shore, beaten by tearing surf between the few havens. There is no sign of life upon the seaboard, except the cry of the seals and the occasional flights of guano-producing sea-birds, which fly at times in veritable clouds upon the face of the water. As for man and his habitations, except for the few seaports and the streets and houses clustered around them, and the irrigated plantations in the vicinity of the few rivers which descend from the Andes to the sea, across the 80 to 100 mile wide strip of coast lands, there is nothing to be seen. The coast lands are mainly sun-beat deserts, which for hundreds of miles separate the valleys where agriculture is possible under irrigation. For the coast-zone of Peru, lying between the foot of the Andes and the Pacific Ocean, is a rainless region—rain never falls there—1,400 miles long, extending southwards into the appalling deserts of Tarapaca, in Chile. Nevertheless, it is upon this coast-zone, which enjoys a generally excellent climate in other respects, that the Spanish-American peoples have mainly taken root; and Lima, the handsome capital of the Republic of Peru, is situated thereon, a short distance inland, as well as other cities.

Crossing this dry coast-zone we rapidly ascend the Andes, and encounter climatic conditions exactly the reverse of those we have left below. Heavy rainfall and snowfall, bracing and rarefied air, and perpetual snow upon the summits are the characteristics of this lofty region, the roof of the South American world. Topographically this region consists of great, high, bleak plateaux, from 10,000 ft. to 16,000 ft. above sea level, absolutely treeless; and to reach these from the coast or from the interior, or indeed from each other, we have to cross the intervening ranges of the Andine Mountain system; vast parallel ranges whose passes are rarely less than 14,000 ft. above sea level, and whose summits rise in some cases to more than 20,000 ft. elevation, far above the line of perpetual snow. I have crossed these inclement plateaux, passes, and summits on many occasions, and retain strong recollections of toilsome yet pleasurable days and months spent on mule-back amid their alternating sunshine, rain, and snow. Some of the snowy passes and peaks, indeed, which I crossed or ascended on foot over the perpetual snow-cap had never been trodden previously by the foot of a white man, nor, indeed, of any human being. The mountain sculpture of the Andes is beautiful and striking; the rising or setting sun tinges the snow-crowned peaks with that ruby glow known only to the Andine or Alpine traveller, and the vast heavenward-pointing ridges of upturned strata of the Silurian or Cretaceous periods, and the great uplifts of plutonic rocks form mighty façades and far-reaching Andine towers and aisles—an eternal architecture which surmounts the work of man's hands that lies below, and perhaps has influenced its character.

Mural Remains.

I have dwelt thus upon the climate and topography of Peru because it bears in an important way upon the architecture of the Incas and pre-Incas who flourished there in past ages. The mural remains of these people, their great monuments in stone and sun-dried brick are found all over the region of the Cordillera, and to a lesser extent upon the coast; and their character varies much in accordance with their situation and climatic environment. Thus upon the rainless coast-zone the buildings were largely of adobe, or sun-dried earthen bricks; the well-known material used throughout Spanish-America to-day, whether in Mexico Peru, or Chile; whilst as we rise to the rainy region of the mountains we observe that they are of stone, shapen or unshapen. The adobe lasts for centuries on the dry coast plains; it would have perished long ago upon the rainy plateaux and become obliterated; and here it is that the beautiful examples of the stone-shaping art of these pre-Hispanic people is found in its perfection. The whole region over which these monuments are found may be taken as more than 1,500 miles long by 300 miles wide, extending throughout what is now Ecuador, Peru, Bolivia, and part of Chile—an enormous range of territory for a semi-civilised people to influence, and greater than that which included the civilisation of the Euphrates and the Nile together.

The Inca Empire.

The Inca Empire, it will be recollected, flourished, as far as can be ascertained, from the time of the first Inca, Manco Capac, who founded the dynasty at the beginning of the XIth century of our era, to the time of the arrival of Pizarro and the overthrow of Atahualpa, in 1532. But the Incas were not the first civilised people of Peru. They were preceded by, and probably inherited their civilisation from, the Aymaras, whom they probably overthrew. The various mural remains throughout the country are, therefore, of different people and periods—some only nine to five hundred years old, others being of much more remote epochs, measured possibly by thousands of years.

Roads.

The Empire of the Incas, at the time of the conquest of Peru in 1532, had as its main centre Cuzco—the word itself signifies "the navel"—in modern Peru, and Quito, the capital of Ecuador, upon the equator; and these centres were connected by the famous Inca roads, which some historians—generally those who have not seen them—have described as equal to the roads of the Romans, which statement is far from being true. They were, however, means of communication of the utmost value to the Empire, and although they were nothing more than

Digitized by Google

trails for the llamas, those wonderful camels of the Andes which were the only beasts of burden known to the people, who consequently possessed neither horses nor wheeled vehicles, they gave access from place to place, and were traversed by the remarkable system of posts and postmen maintained by the Inca Government. These roads, from Cuzco to Quito, were more than 1,100 miles long—a distance greater than that from the Euphrates to the Nile. Moreover, as engineering structures even, these roads were of considerable merit, crossing by rock-hewn steps the summits of the Andes above the perpetual snow-line, passing swampy lands by stone causeways, and rivers by means of the remarkable suspension bridges made of woven grass or osiers, and by stone structures.

Castles and Fortresses.

There were two main roads. They both traversed the country longitudinally along the line of least resistance paralleling the ranges of the Andes. One, the most remarkable, ran along the high plateaux and summits of the Andes; the other followed the lowlands of the coast. The groups of buildings which we are to consider are in some cases disposed along the line of these roads, or are adjacent thereto, portions of the roads only remaining here and there. The structures consist mainly of castles and fortresses, temples, palaces, astronomical observatories, tombs, and groups of habitations or towns. All of these are now abandoned and in ruins, with the exception of some which form part of recent Spanish-American structures at Cuzco. In passing, it may be said that the Moorish type of building inherited from Spain looks exceedingly incongruous and evanescent in comparison with the solid massive Inca masonry beneath it, in the few instances where the two are encountered together.

Lake of Titicaca.

To describe first the ruins of most notable occurrence. These are situated in the neighbourhood of Cuzco, and upon the region bordering upon the great Lake Titicaca. This lake, it will be recollected, is of its kind the most remarkable in the world, being 12,350 ft. above sea-level, and so large that we may navigate upon it out of sight of land. It is remarkable also in being, in company with some other lakes, a hydrographic entity, which has no outlet or means of exhaustion for its waters, except that of evaporation, as far as is known.

City of Cuzco.

Cuzco is about 200 miles from the lake, and was the great Mecca of the people and the seat of government. Overlooking the city—which to-day is an important, populous place, standing 11,000 ft. above sea level—is what is perhaps the most remarkable prehistoric building in the New World, and indeed in some respects in the whole world. This is the fortress of Sacsaihuaman. It consists of a series of four or more great walls, from 12 ft. to 25 ft. high, forming terraces up the hillside 1,800 ft. long. The walls are built as great revetments, with twenty salients at regular intervals, the masonry being formed of Cyclopean worked stones, which in some cases are nearly 20 ft. high, weighing many tons. Indeed, we are at once struck on observing the walls of this fortress, as well as those of others of the Inca buildings, with the remarkable character of the masonry, not so much by the size of the monoliths as by what is either a singular disregard of uniformity and alignment in the joints, or is a curious, purposeful variation of these. Thus we see that each stone is an individual, not a counterpart; a polygon, not a cube. In many cases the stones are cut out to fit each other in a way such as must have involved much labour, especially when it is recollected that the Inca masons probably had no means of laying out angles; so that presumably the stones were made to fit each other by the laborious method of constantly removing and replacing. It has occurred to me, although I may be wrong, that this giving of an individuality of form to each stone was a nice and purposeful art, or carried out for some now unknown reason. Notwithstanding this diversity of surface, the contact between the stones is generally so perfect that a knife-blade cannot be inserted; and there is no mortar. In some of the temples—it is stated by the Inca historian, Garcilaso—gold and silver was used as a bedding material for the stones. Whatever may have been the reason for this lack of uniformity in the Inca masonry, it is singularly beautiful and unique, and the walls have well resisted the ravages of time and the elements. In the streets of Cuzco some well-preserved examples of Inca walls form part of modern buildings, as before mentioned. A good example is the wall which was the base of the Palace of Huayna Capac, one of the later Inca emperors. Here massive stones are encountered, polygonal in form, fitting perfectly into each other. One of these, it will be observed, is a twelve-sided polygon. This wall forms part of an Inca street which is used to-day. In the city of Cuzco there are various other buildings, notably the remains of what was the Temple of the Sun. Overlooking the valley we have also the singular steps or terraces, cut out of the living rock, which is termed "the seat of the Inca," and it is stated that the Inca Emperor took his seat here to watch the construction of the great fortress.

Yucay Valley Fortress.

At about a day's ride from Cuzco we reach the head of the Yucay Valley and see its base 4,000 ft. below. Upon the slope of this remarkable valley—it is one of those which drain into the affluents of the Amazon—the ruins of another remarkable fortress are encountered—that of Ollantaytambo. This also consists of great terraces of Cyclopean masonry. We also observe here, in this structure, a common feature of Inca architecture—the series of niches in the walls, with their characteristic trapezoidal form, giving a unique and handsome effect. No style of building could accord so well with its environment as these massive structures of the Incas. Possibly the builders were influenced by the mighty mountains which overhang their valleys, as I have before averred, and strove to adapt their work to the stupendous Andine architecture on every hand, fashioned by the "Unknown God" to whom their temples were raised.

Other Fortresses.

Another remarkable group of ruins in the same region is that of Intihuatana and Pisac. The latter is another imposing fortress upon the summit of the mountains, a remarkable situation with an extensive view of the surrounding cañons. But this fortress of Pisac had its own sacred purpose. It enclosed—and still encloses—the temple wherein stands the famous astronomical stone or pillar of Intihuatana. This word means in the Quechua tongue, "the seat or throne of the sun," or the place "where the sun's rays are collected." The pillar was, in fact, the instrument by which the Inca astronomer-priests determined the solstices. The column, now broken but still existing, is worked out of the solid rock. It is enclosed by a circular tower, and in this the priests observed the shadow of the column upon an east and west line inscribed upon a circle which surrounded it. When the day approached great feasts were celebrated, and a golden stool was placed upon the shaft so that "Inti," the sun, might "sit down" upon it, for the solstice. There were others of these astronomical pillars throughout Peru and Ecuador, but they were generally destroyed by the Spanish priests after the conquest, as "things of the devil"! The fortress and buildings surrounding the column-chamber are beautifully executed—stone-built corridors, halls, and chambers; whilst the whole place, surrounded by beetling precipices and protected by revetments of granite masonry, are impregnable. In the rock walls of the valley are seen ancient tombs in absolutely inaccessible positions to-day. These great fortresses commanded the valleys leading down to the region of the Amazonian forests below, and were to protect the empire from the incursions of the savage tribes dwelling there. Even to-day the forest region beyond the Andes is a savage, unexplored territory in great part, inhabited by bands of Indians, although the business of rubber gathering is opening it up to some extent.

Ruins of Tiahuanaco.

We shall now leave the regions of Cuzco for that of Tiahuanaco, near the southern end of Lake Titicaca, about 300 miles away on the border of Bolivia. Here we find ruins which in a sense are more remarkable than those of Cuzco, because far more antique. The temples and fortresses of Cuzco date only from the beginning of the XIth century, as stated, of the Christian era, when the Inca dynasty came to being; those of Tiahuanaco and others are of unknown age, and doubtless were built by the Aymaras at the time of their greatest culture before their overthrow. Some writers, indeed, have maintained that they were contemporaneous with Babylon or Assyria. But be it as it may, they are of a different type to that which the Inca stone-shaping art produced, and they form the ruins of the oldest city in the New World. here upon this high, bleak, sterile plateau of Titicaca, more than 2 miles vertically above the level of the sea.

The ruins of Tiahuanaco consist mainly of the outline of a great temple, shown by rows of upright monoliths, foundations, parts of stairways, a great stone doorway, and some colossal stone figures. It has been a question how these great monoliths were transported here, but if we take into account the hydrographic conditions of the site, which might have been formerly an island when Lake Titicaca was more extensive than even now, it is conceivable that they were floated to the spot, and possibly their quarries were nearer at hand than has been supposed. Indeed, quarry sites have been established in the neighbouring hills. But, on the other hand, some of these monoliths, both here and at Cuzco, have been transported for great distances over the most broken country imaginable, and their carriage presents the same question as has been aroused concerning the monoliths of Egypt. Near Cuzco is an enormous stone which had been abandoned on the road, and an Indian tradition says that the stone "wept tears of blood" at being left there. These great stones of Tiahuanaco, unlike the Inca walls, are often very richly carved. The most remarkable of them is the monolithic doorway of Akapana, with its carved figures, the central one of which has been taken by Peruvian archæologists to represent the mystic deity Huirakocha. Some of the lesser figures have human bodies, hands and feet; some human heads, others heads of condors; some wear crowns and carry sceptres, and they appear to be in an attitude of adoration of the central figure, which itself holds sceptres, carved with the heads of tigers and condors, which were probably symbolical of strength and power. This central figure of Huirakocha (or Viracocha) was the supreme god of the Andine people, typical of the "Abyss of the Waters," as was "Ea" among the Chaldeans. Among other notable monoliths of this group of pre-Inca ruins is a great stone image, about twice the height of a man, which stands upon the plain.

Ruins on Islands of Lake Titicaca.

Upon the islands of Lake Titicaca there are other remarkable ruins, both Inca and pre-Inca. From this island it was that Manco Capac, the first Inca, whose virgin birth as a redeemer of man is part of the Inca mythology, set out to civilise the savage tribes of the Andes. There are many ruins

Digitized by Google

on this island, as also upon that of Coati; ruined temples to the sun and the moon, the former of which the Inca worshipped as symbolical of a greater Deity. There was, indeed, much that was chaste and ethereal in the Inca religion. They imagined a Supreme Being, an "Unknown God," who pervaded everything but who could have no visible or tangible form or likeness; and they did not set up idols, nor were human sacrifices performed. The image of the Creator was represented at Cuzco by an elliptical plate of gold set on the wall of the temple. In the Titicaca region there is also a remarkable ruin, known as the "Temple of Huira-kocha"—huge walls which probably were never completed; work of the Aymaras.

The Region of the Upper Marañon.

If now we leave this part of Peru and Bolivia and journey to the north some 700 miles—or about 400 from Cuzco—we reach the region of the Upper Marañon River, where we encounter several other beautiful examples of the Inca and pre-Inca stone-shaping art. Indeed we shall have passed other vestiges of their time upon the way, such as the monoliths of Huaitara, and ruins of prehistoric villages in many places. The modern capital of this region is the town of Huaraz, a typical Andine city, 10,090 ft. above sea level, and overhung by the snowy Cordillera to the east. There are many vestiges of the Inca period here, but we shall cross the main range of the Cordillera; and one of the passes which I have traversed on various occasions is an old Inca pass of rock-hewn steps at an elevation of nearly 15,000 ft. We then descend to an affluent of the Marañon, upon which is situated the remarkable Castle of Chavin. This castle, which I explored, is largely in ruins, but there are numerous singular underground chambers and passages, the purpose of whose construction it is difficult to understand. The walls are of blocks of hewn stone. But the main point of interest here is the singular carved monoliths, doubtless of pre-Inca origin, which exist or existed here. One of these, a beautifully-carved stone about twice the height of a man, was transported over the Andes and down to Lima, on the coast, where it stands in the Exhibition Park. Another in the form of a column yet remains in place, and there I examined it.

The whole of this remote region of the Upper Marañon is dotted with the ruined dwellings of the former occupiers of the land. Houses, streets, fortresses, sometimes in the most inaccessible positions, upon appalling crags, towards which the night-mists from the Marañon roll up in fleecy folds like a mysterious pall, and from them these ruined castles and walls start suddenly as we behold them, like the ghosts of the dwellings of a vanished race—which indeed they are—weird and unique. I have, upon my expeditions with my men and mules, often been obliged to sleep in these ruined places, sheltering from rain and snow, and my men have cooked the evening meal in the old fireplace of perished Inca chiefs! The disposal of these numerous ruins, often about a central fortress commanding the heads of valleys, and surrounded by the abandoned "andenes" or terraced fields of these people, goes to show that the inhabitants lived as clans, or "Gentiles," and their ruined dwellings are termed by the Indians of the Andes to-day "casas de los Gentiles," or "houses of the Gentiles." These "andenes," or cultivated terraces, are a most striking feature of the Andes. I have journeyed among these interminable slopes in many places, and at sunset especially the "andenes" come into view, giving a singular rippled appearance to the sides of the profound valleys. They go to show how every available foot of ground was cultivated under the Incas, who were splendid agriculturists, and how extensive must have been the population in pre-Hisparic times of these vast regions, where, since the advent of the European, only scattered villages and mouldering ruins now exist. It has been calculated that the population of the Inca Empire might have reached 90,000,000 souls, but I consider this greatly overestimated. It is not difficult, however, to conceive a people as numerous as that of Great Britain to-day.

Ruins of Huanuco Viejo.

The most remarkable group of ruins in this region is that of Huanuco Viejo, of which I made a special study. It stands upon a broad, flat plain upon an arm of the Marañon, at an elevation of about 12,000 ft. above sea level, and consists of an extensive palace, a fortress or temple of the sun, baths; and a extensive village of streets, with a singular series of round and square dwellings, alternating, in long rows. The chief architectural feature of the buildings is a series of stone doorways, really beautiful examples of Inca masonry, and the castle or temple. In the palace there are six of these doorways, all standing in a line at considerable distances apart, so that the observer who takes his stand in front of one of them is enabled to see through the whole series. The line so taken through them is about east and west. The total length across the courtyards or halls to which these doorways give access is about 400 ft. The doorways are of typical Inca tapering or trapezoidal form, with quoins and lintels of beautifully-fitted stones of the more or less polygonal form previously described, and so closely fitted that a knife-blade cannot be inserted in the joints. No mortar has been used. The lintels are monoliths of nearly 7 ft. in length in some cases, and the thickness is about 3 ft., which is that of the walls of which they form part. The characteristic niches, also of trapezoidal form, are a marked feature of the walls of these ruins.

The castle, which stands in the centre of what was a huge square, around which the palace or palaces are disposed, is a building of different character. It is rectangular in form, about 100 ft. wide and 170 ft. long, very solidly constructed of cut stone blocks surmounted by a cornice, whose moulding is composed of a fillet and cavetto, as in the Doric order. The whole plain in the vicinity is covered with the ruins of small habitations, generally of unhewn stone. All the masonry of these ruins is composed of blocks of silicious limestone, which have been extracted from a stratified hill at the edge of the plain.

This plain and its hills, and the ruins of the palaces, castles, and dwellings are absolutely uninhabited, except for an occasional Indian shepherd, and these, I was informed by my men, occasionally vary that occupation by horse-stealing. I pitched my tent under the shelter of the palace walls, and in the night a commotion among my mules seemed to suggest that some prowling robber might be about; and as a warning I lifted up a corner of the tent canvas and fired a couple of revolver shots out into the night air. When morning dawned we found tracks of sandalled feet, but nothing was missing. I sketched the chief features of the place, and rode along the abandoned streets of the Inca village, where even as late as the time of the Conquest the Incas maintained a population of 30,000 souls. Now the wild oats waved above the entablature of the palace of the Incas, and the declining rays of the sun fell softly across their ruined walls as I ascended the range of hills above the Marañon. These ruins of Huanuco Viejo are of much interest, and as far as I am aware they had never been previously examined and depicted. My photographic films had become exhausted, and I have only my sketches to illustrate them, which, however, were made with exactitude. One remarkable fact we must recollect in regard to these great stone structures of the high plateaux—they are in a region at a vast elevation above sea level where there is little vegetation, absolutely no timber, and where corn or other cereals will not grow.

Ruins on the Coast.

We will now leave the high region of the Sierra and descend to the coast. The principal ruins of the Incas, pre-Incas, and other semi-civilised former occupants of the land, such as the Chimus, are mainly of buildings constructed of adobe, and have remained—where they have remained at all—due to the dry climatic conditions as before mentioned. The most famous of these ruins formerly was that of Pachacamac, which at the time of the Conquest was a splendid temple raised to the "Unknown God"; and great spoil of golden vessels and plates was secured from this place by the Spaniards in the ransom of Atahualpa. The name, "Pachacamac" signifies in Quechua—the language of the Andine people—"He who gives animation to the Universe." To-day nothing remains of this great temple but a mound of rubbish, a day's ride from Lima. Proceeding along the coast-zone to the south we shall reach a group of ruins known as "Incahuasi," or "the house of the Inca." These, unlike the coast ruins generally, are of stone, although they lack the beautiful workmanship of the mural remains we have visited in the Andes. But they are unique in one respect—they contain a row of columns. This is an architectural feature absolutely unknown in the Inca and pre-Inca ruins elsewhere, for, except in this case, the column was unknown to the Andine people, as was the arch. The columns of Incahuasi are not monoliths, however. The building probably dates from the XVth century. Still further to the south, slightly inland from the port of Pisco, we encounter an extensive group of adobe ruins in a good state of preservation, consisting of long walls with characteristic trapezoidal-formed doors and niches, and corridors, halls, and rough stone foundations. I took a careful sketch of these features. The niches are still coloured with some red pigment, possibly vermilion from the great quicksilver mines in the Andes to the east, for vermilion was obtained from the cinnabar to paint the faces of Inca beauties, we are told by Garcilaso, the Inca historian.

Still further south in this coast-zone of Peru I encountered remains of long aqueducts, a line traceable for 80 miles along the hill-slopes, for the Incas were expert in hydraulics and irrigation works. There are other long ruined aqueducts in other parts of the country also.

Taking our way now far to the north, we come to the region where the Chimu people flourished, who were overthrown by the Incas. They were a powerful semi-civilised coast people, and numerous ruins attest their skill in mural construction. Among these the most notable are the ruins of Chan-Chan, whose walls show florid decorations, elaborated in cement. These ruins are not far from the modern city of Trujillo, and would repay careful study.

Inca and pre-Inca Architecture.

It would be impossible within the space of this paper to dwell at greater length on the ruins of the early Peruvians I have enumerated, and those others scattered throughout the land; and I must content myself now with a few general particulars. As we have seen, the Inca and pre-Inca architecture differ much, to those who have made a study of them. The first lack any iconographic carvings, such as we have seen at Tiahuanaco and Chavin. Monoliths of considerable size were common to both; one of those at Cuzco is 27 ft. long, 15 ft. wide, and 12 ft. long, and there are others of almost equal size. The stones vary as to their geological composition according to the region; some are of granite, as at Cuzco, some of trachyte, sandstone, or basalt, whilst others are of a hard, silicious limestone. It is to be recollected that this remarkable stone-shaping art was performed without the use of iron; but the Incas possessed bronze, termed *chumpe*, and copper tools. Indeed, they were skilled metallurgists in copper, gold, and silver.

Digitized by Google

As previously stated, the Incas were unacquainted with the arch, but nevertheless they constructed dome or "beehive" roofs, both to their tombs, at times, and to their conical houses, whether of stone or adobe. They also employed the principle of corbelling-out over openings, and to form the abutments of small bridges. In general terms the principal characteristic of the Inca architecture is its great solidity. It would seem that the builders had desired to bequeath to posterity these chapters in stone of their history; and, indeed, it is safe to say that these may be expected to outlast any of the modern structures of America, whether the architectural work of Colonial Spain—good and solid as this is generally—or whether the evanescent skyscrapers of the Anglo-Saxon on the Northern Continent. Solid as these walls are, however, the roofs of the large buildings have perished long ago; as their builders do not appear to have been able to advance beyond sloping roofs of poles covered with grass thatch; or, at any rate, in the absence of anything else we can only assume this to have been the case. Their buildings, with small exception, are never of more than one story. Nor were they acquainted with the use of burnt brick, although their ceramic art was an advanced one, as we know from the beautiful and abundant Inca pottery. In the shape of their vases (as well as in the form of some of their buildings) they showed a curious knowledge of acoustics. There were no doors to the houses, the openings being covered with a mat. The interiors of the temples were covered with plates of gold, of which the Spaniards secured great booty.

The Land System.

In conclusion, we will now cast a brief glance at the land system of the Andine people, which, in view of the present controversy in Britain regarding land tenure and small holdings, is of much interest. The land laws of the Incas were exceedingly philosophical. All the land was measured and surveyed; every available hillside was banked up and terraced, forming the "andenes" already spoken of; a portion of the land was set aside to be worked for the benefit of the Sun, or let us say the Church, another portion for the Inca or the Government; whilst the bulk of it was portioned out among the people, each head of a family receiving his holding, with an added plot for each addition to his family. Everyone was obliged to work his holding, and destitution did not exist; nor was begging permitted, as every citizen was provided for and could support himself and family by his own crops and herds of llamas. Taxes were payable in goods, not money, and the whole system was a prosperous and beneficent one, under monarchs who had the welfare of their people at heart. Indeed, the organisation of land, food supply, and work, without waste or poverty, was so beneficent a one as has never existed under the rule of any Christian nation or monarch. The advent of the Europeans destroyed this promising system, and the only useful remainder which the poor dweller of the Andes inherits to-day from his Inca forbears is the system of land tenure, which is wisely perpetuated by the modern Government of Peru. That is to say, the small holding of the peasant is inalienable by law; so the Cholo of the Andes lives in undisputed possession of his little holding, wrested from rocks and thorns; but it is safe to say that he owes this security partly to its inaccessibility. Otherwise his land would doubtless have been snapped up long ago by the large landholders, after the custom of other American and European peoples. The social system of the Incas, whilst it had its excellent points in that destitution was impossible, did not tend towards social advancement, although what might have been evolved if the civilisation had not been destroyed it is impossible to say. Their social *régime* has been described as a species of Socialism, under a beneficent autocratic Government.

The Origin of the Incas and pre-Incas.

A few words as to the origin of the Incas and pre-Incas, and I shall have finished. I do not think anyone who has made a study of the matter will deny that the stone-shaping art and some other arts (not only of these people, but of the Mexicans, 3,000 miles away to the north) must have been inherited rather than evolved. More—the people themselves must have been immigrants originally, rather than autocthonous. But from where? The generally assigned origin is from Asia, and the Mongol cast of face is very noticeable among the pure indigenes both of Peru and Mexico. As to their arts, an origin has been assigned in Egypt and in Mesopotamia. We have seen the tendency to the pyramidal in the Inca structures, giving some atmosphere of the buildings of the Nile. A host of other analogies have been adduced. The use of copper tools, the custom of embalming the dead, for mummies are common objects in the Inca tombs; the Indian canoes of Lake Titicaca, with their turned-up prows and mat sails, which are the counterpart of such a craft figured on the tomb of Rameses II.; religious customs, including sun-worship and moon-worship; matters of design upon pottery and woven textures; the wearing of sandals; and, above all, their stone-shaping art and their transport of monoliths. Into this fascinating field it is beyond the province of this paper to trespass further. The theory of Asiatic or Egyptian origin has been strenuously denied and strenuously supported, and the approaching shores of Behring Straits, where America touches the fringe of Asia, have been pointed to as the probable path which these prehistoric immigrants followed, when, bearing in their bosom the germs of a civilisation and a religion from the ancient world, they passed down these 10,000 miles of Pacific littoral and inclement Cordillera of America. Well may we ponder on their mystery, as, standing amid the ruins of these bygone empires of the Andes, we watch the sun-god of the Incas sink in the Occident."

Mr. R. Phené Spiers, in proposing a vote of thanks to the lecturer, said he had never been in Peru, but he was much interested in the subject. There seemed to have been two kinds of buildings in the country, *i.e.*, those of sun-dried bricks, or adobe, in the lower portions of the valley, or coast, where rain did not fall; and those built in the rainy upper parts, where there was plenty of stone, but no timber, and where the builders covered their stone structures without the ordinary means of covering over such buildings. The lecturer had drawn attention to the raking walls of some of the ruins illustrated and to certain forms which he thought might have been derived from Egypt; but those raking walls were in stone, and were copies of the earliers structures in unburnt brick, where the wall were always thicker at the bottom. It was quite certain that the sloping sides of the doorways in the illustrations shown could not have been derived from the sun-dried brick buildings, and it was a mistake to suppose that the doorway was like an Egyptian doorway, for no Egyptian doorway was ever built with sloping jambs—the sides must have been vertical, for crude bricks would not carry if leaning over. The inclined jamb of the Inca doorways must have originated in stone material, and the rake was employed in order to lessen the bearing of the stone architrave, especially necessary as the Incas did not seem to fear putting large stones and weight on the top. A singular point, and one as to which he was not at all satisfied, was how the Inca builders covered over their buildings. Mr. Enock suggested that poles carried sloping roofs—perhaps because he was able to show photographs indicating the same. But he (the speaker) did not think that was the ancient way, and he thought that the roofs in the valley houses were always flat or domical—most likely flat, because when covered with earth they would form a pleasant place to sleep in at night, and throughout all eastern countries they were flat or domical. As to the sculpture, he was afraid he could not suggest any origin for it. He could not recognise any trace of another race influencing it. In one of the illustrations they had seen what was known as the Greek fret, but that existed in other countries independently, and he thought it had a natural occurrence. As to the cyclopean walls they had seen on the screen, the extraordinary resemblance to some of those in Greece was astounding; there was no difference at all. Each nation or race must have used the material the best way they could, thus evolving similar construction; horizontal courses of stone were introduced when out of stratified rock. So it was always the material which determined the construction. He had great admiration for some of the examples of masonry the lecturer showed them, and it must have involved immense labour to have produced the bossing-out in the centre of the huge blocks of masonry used. M. Choisy had shown how such great blocks of stone were used; those at Baalbek in Syria were larger than those used by the Incas, and it was certain that some means of transporting these blocks was employed of which we had no information.

Mr. F. D. Clapham seconded the vote of thanks, and referred to the extraordinary civilisation of the people under the rule of the Incas. Their roads and bridges must have been marvels of engineering, and they had left behind them ruins of remarkable monumental buildings and works.

Mr. G. Leonard Elkington supported the vote of thanks, and said that the architecture of the Incas, *i.e.*, subsequent in date to the advent of Manco Capa, was distinctly disappointing. The buildings of this period which had been thrown on the screen had chiefly impressed him by a similarity to the structures associated in one's mind with Tibet and Central Asia. The examples of pre-Incal architecture, however, were quite superior in interest, and indicated clearly that an advanced civilisation had existed in Peru from an early date which could not now be fixed definitely. He thought the Inca domination had been overrated; not only had Peruvian architecture failed to advance under it, but in the short space of 400 years that that domination obtained the people themselves had become such that Pizarro and his handful of Spaniards were able to master them without any difficulty. The lecturer had touched upon one of the enigmas of ethnology—who were these early people and whence came they? Like Mr. Spiers, he (the speaker) had closely followed the illustrations of the architecture given, in the hope of detecting some characterisitic of construction or some element of design which might serve to narrow down the possible solutions of that problem. Mr. Spiers had dealt with some of these features. In Peruvian art the use of the fret ornament was accompanied by two distinguishing characteristics—the pattern was not continuous as in Grecian examples, but was repeated in short lengths, and its lines were formed in a peculiar stepped manner. It was of course true, as Mr. Spiers had observed, that the use of the fret ornament was practically universal, and it was possible that such use might have been derived from an accidental but general observation of the meshing in weaving, but it was also easy to account for such use and for many of the other analogies mentioned in the paper by an original common parentage of the pre-Incas with an Old World people. One of the slides shown, a large carved human figure, was strongly reminiscent of those found on Easter Island, and for which the natives cannot account, even by legend. The profuse

Digitized by Google

use of carving on other examples seemed to point to the theory of Asiatic origin, whilst the cyclopean walls and the use of the vaulted dome recalled the prehistoric Pelasgic cities such as Tiryns, Mycenæ, etc. In this connexion it was a curious fact that the Argives themselves had a legend that, a long while after their foundation and before the building of Mycenæ, a race of Phrygian princes, *i.e.*, from Asia Minor, came amongst them and established a strong kingdom. If the common parentage theory can be maintained, the point of how the stock was transplanted in the New World arose. Early communication with Asia, *viâ* the Behring Straits, had been mentioned, but it was equally feasible to imagine that perhaps some of the first navigators had been carried by stress of weather far from their native lands, just as had happened to Ulysses on his homeward journey when Troy had fallen. As bearing on the overseas theory might be instanced the belief in a lost Atlantis, a vast island fabled to have existed where America was subsequently found, which undoubtedly obtained amongst the Greeks; he believed Solon wrote thereon, and Plato in his incomplete "Critias" also treated the same subject. Pizarro, too, found his task the lighter, it is said, because of an extraordinary and almost pathetic readiness on the part of Atahualpa and his people to welcome the Conquistadores, as the long-expected white men from over the waters of the Inca legends. These matters of course were purely romantic, but were an interesting outcome of the paper that evening. On the point of the estimated population of the Inca empire, it was difficult to imagine that so great a number of people as 90 millions, or even the lesser figure of Mr. Enock, could have subsisted in so sterile a country, even making every allowance for their energy and skill in works of irrigation and cultivation.

Mr. H. W. Brittan asked whether there was any purpose, as far as was known, in the niches of one of the great works shown.

The Chairman, in putting the vote of thanks, said that the architecture of the Incas was of a primitive character, but of great interest. The builders of the time must have had a very reliable mortar.

The vote of thanks having been heartily carried.

Mr. Enock, in reply, said as to the roofs, in the rainy districts he did not think they could have been flat because they would not have kept the rain out very well, though probably they were flat in some places. In one of the views he had shown there was the appearance of a double gable end, as if a sloping roof had been used. It was generally held that poles, covered with thatch, must have been the form of roof used; and though that would have looked primitive on cut-stone walls there was no other conclusion to arrive at, and as far as we knew the Incas used no other form than that used by the inhabitants of the Andes. As to the rake or batter of the walls having been evolved from similar construction in sun-dried bricks, he thought that was so; but if it were, the idea might have been brought from somewhere else. Moreover, the trapezoidal form of doors and the raking walls were not in the sun-dried brick buildings, but only in the cut-stone ones. Reference had been made to the woven bridges of the Incas, some of which still existed. They were remarkable structures, crossing enormous ravines, it might be 200 yds. long. As to the niches, it was not known what they were for, but probably they were something in the nature of panelling or ornament, though they might have had some other purpose.

The Chairman announced that the next meeting will be held on December 10, when Mr. F. C. Eden will read a paper entitled "Varallo, Orta, and Varese."

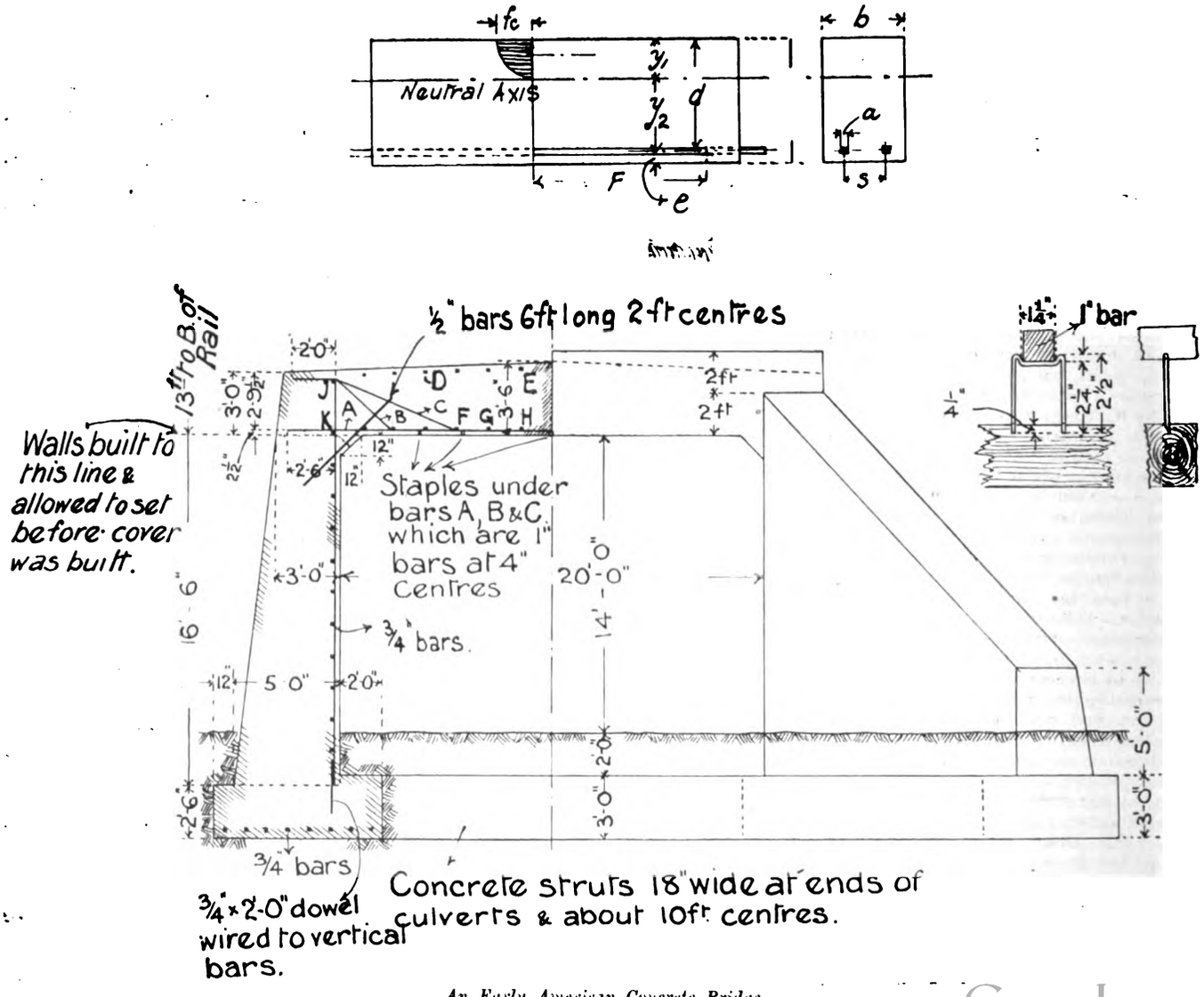
The meeting then terminated.

AN EARLY AMERICAN CONCRETE BRIDGE.

THE American engineers were amongst the first to make use, to any considerable extent, of reinforced concrete. The figure, taken from a paper read before the Western Society of Engineers by Mr. J. J. Harding in 1905, with the data used in its design, is given below, and will probably be interesting as showing the method adopted by these pioneer designers in working out their early designs, the great grasp they had of the subject, and the rapid strides made in its manipulation. These data I have worked out more carefully, showing all the steps. This bridge is called "a culvert for a highway undercrossing," and has a span of 20 ft. in the clear, constructed to carry heavy railroad traffic; the details are as shown in the figure.

It was built in three periods, the footings being put in first with short projecting-rods to connect up the second part, *i.e.*, vertical sides, which were erected after the footings had set, and the third period during which the "cover," *i.e.*, the lintel or decking was erected after the walls had set.

Covering the bridge is a depth of 10 ft. of earth, the "cover" being taken as 3 ft. thick (the "cover" is the reinforced slab spanning from side wall to side wall), the extra depth of mortar added at the centre being introduced to throw off the water, and was



An Early American Concrete Bridge.

Digitized by Google

not considered as taking part in resisting the compressive stresses.

The formula adopted was as follows:—

(1) $y_1 + y_2 = d$.
(2) $y_1 = 0{\cdot}34\,d$ ~ average value as determined by tests.
(3) $y_2 = 1{\cdot}94\,y_1$ ~ from 1 and 2.
F = 54,000 lb. per square inch = elastic limit as assumed for twisted and corrugated bars.
(4) $\frac{a^2 b}{s} = 0{\cdot}0075\,bd$, or total area of steel is assumed as 0·75 per cent. of the area of the concrete above the centre line of steel.
(5) $M = \frac{Fa^2b}{s}(y_1 + \frac{1}{3}y_1)$ = maximum resisting moment in inch pounds.
Substituting values,
$M = 350\,od^2$.
(6) $d = \sqrt{\frac{M}{350\,b}}$
M = bending moment in inch pounds.

Taking the earth at 100 lb. per cubic foot, and the weight of concrete and reinforcement at 150 lb., the load on 1 sq. ft. of bridge = $10 \times 100 + 3 \times 150 = 1{,}450$ lb. per square foot.

Considering a 1-ft. strip of the bridge the total load = $20 \times 1{,}450$ lb., and the bending moment being for a distributed load = $\frac{WL}{8}$ (L = span in feet and W = total load), we get $M = \frac{WL}{8} = \frac{(20 \times 1{,}450) \times 20}{8} =$ 72,500 ft. lb., which in inch pounds = $12 \times 72{,}500 = 870{,}000$ in. lb.

The maximum live load was taken from tables to be 6,200,000 in. lb. per track, which is assumed as being distributed over 8 ft. at base of rail, and spreading from there to the bottom of the "cover" (a vertical distance of 13 ft. through earth and concrete), at the rate of 6 in. to every foot of depth. Therefore, this load is distributed over 8 ft. + 13 × 6 in. = 8 ft. + 6½ ft. = 14½ ft. at the "cover."

On the slab taken, which is 1 ft. wide, the bending moment due to live load will be $\frac{6{,}200{,}000}{14{\cdot}5} = 427{,}600$ in. lb.

Taking a factor of safety of three for the dead load and five for the live load, we get $3 \times 870{,}000 + 5 \times 427{,}600 = 2{,}610{,}000 + 2{,}138{,}000 = 4{,}748{,}000$ in. lb., as the bending moment to be allowed for M.

From formula 6, $d = \sqrt{\frac{M}{350\,b}}$ and as b is 12 in. wide, then $d = \sqrt{\frac{4{,}748{,}000}{350 \times 12}} =$ 33·62 in. The area of the steel being taken as ·75 per cent. of the area bd of beam, then as $bd = 12 \times 33{\cdot}62 = 403{\cdot}44$ sq. in., we have 75 per cent. of $403{\cdot}44 = 3{\cdot}03$ sq. in. of steel necessary to take the tension. Three 1-in. bars spaced at 4-in. centres were employed to meet this stress.

The horizontal bars in the "cover" running across the bridge as A, B, and C in the figure were held in position by staples, as shown in enlarged sketch, the staples being fixed in the wooden shuttering, and, of course, remained in the concrete after the shuttering was removed. The ¾-in. vertical bars in the walls are 17 ft. 6 in. long, except one every 5 ft., which is 19 ft. 6 in. long, and extends into the "cover" to support the diagonal bars. The other ¾-in. diagonal bars in the "cover" D, E, F, G, H, J, K are wired to uprights and used to support the other horizontal and diagonal bars. The bars C and B were bent up, as shown, to assist in resisting shearing stresses as they neared the abutments, but it will be seen that no short vertical members were introduced to take the shearing stresses as they now are in the best present-day practice.

H. S.

THE PLUMBERS' COMPANY.—At a special meeting of the Court of the Plumbers' Company, held on the 19th inst. at the Mansion House, a report from the Company's examiners on the work of indentured apprentices registered by the Company was approved, and awards were made to Nathan C. Myers and William Jarvis (bracketed) and Frank H. Randall (second) for regularity of attendance at technical classes and evidence of progress in practical work. The Lord Mayor (Master of the Company) was in the chair.

THE ARCHITECTURAL ASSOCIATION: VISIT TO ORIENT LINE S.S. "ORVIETO."

A SPECIAL visit of rather unusual character was that to the above liner recently completed and lying at Tilbury. Quite a large number of members made the journey for the purpose of inspecting the interior fittings designed by Mr. A. N. Prentice, and executed by Messrs. H. H. Martyn & Co., The Bromsgrove Guild, and Messrs. Singers & Sons, of Frome. Some of the work had been seen in preparation at Messrs. Martyn's works at Cheltenham during the annual excursion.

The interiors are generally very successfully treated, though any detailed description is useless without illustrations. The principal rooms are the lounge, dining-saloon, music-room, and smoke-room, and though each is panelled and covered by a domed skylight with some plaster enrichment, a pleasing variety of treatment has been secured. The stained sycamore used for panelling the lounge is a particularly beautiful material, silver-grey in colour. It is veneered on mahogany in the panels, and the carving is free Georgian of spirited character. The dining saloon is in mahogany, painted white; the music-room (also mahogany) is restfully painted in grey and white, and the smoke-room is in oak, which has been sand-blasted and slightly waxed. It may be gathered from the description that expense has not been spared, but restraint in design quite prevents any appearance of ostentatious costliness. It was pointed out that the work had been executed at extreme pressure by the various firms concerned.

THE NATIONAL TRUST.

A MEETING of the National Trust was held at the rooms of the Royal Society on Tuesday afternoon, the Princess Louise in the chair. There was a very large attendance.

The first business was the following resolution, moved by Sir Robert Hunter and seconded by Mr. Lionel Cust:—

"That this meeting endorses the appeal of the Council of the National Trust, an appeal which has the support of H.M. The King, for funds to purchase the land now offered for building lying between the Alexandra Gardens and the Curfew Tower at Windsor, in order that the greensward and trees may be preserved and the beauty of the famous view of Windsor Castle from the Thames may thus be saved from serious injury."

Sir Robert Hunter, in his speech, went through some of the principal points which are embodied in the Trust's Report of 1908-1909, printed copies of which were in the hands of the audience. He referred, among other points, to the importance of putting an end to the devastation of Cheddar Cliffs by quarrying, and to their hopes that the two principal landowners, Lord Bath and Mr. Long, would support the Trust in its action; to the gift by Miss Chichester of 50 acres of land on Morte Point, North Devon, to be preserved intact for public enjoyment; to the success which the Trust had had in regard to rendering Derwentwater, both lake and banks, accessible for public enjoyment; to the gift of 70 acres of Leigh Woods, opposite Clifton, by Mr. Wills, which would prevent a beautiful neighbourhood being spoiled by building; and to the purchase which had been accomplished of Coleridge's cottage at Nether Stowey: and he strongly urged the importance of the immediate object of the Resolution, the purchase of the land near Windsor Castle, the trees and open fields on this site forming an important element in the most beautiful view of the castle, which would be entirely ruined by the removal of the trees and the erection of small houses on the site.

The next resolution was the following:—

"That this meeting congratulates the Council of the National Trust upon the progress of the work of the Society, and notes with pleasure the increasing number of properties acquired. The meeting endorses the view of the Council that a larger working income from annual subscriptions is required, and commends the claims of the Trust to the attention of the public."

This was moved by Lord Burghclere and seconded by that veteran upholder of the cause, Miss Octavia Hill, in a speech of real eloquence. Both resolutions were unanimously adopted.

A resolution of thanks to Her Royal Highness for taking the chair, and to the Royal Society for lending their rooms, brought the proceedings to a close.

LONDON MASTER BUILDERS' ASSOCIATION.

THE ordinary monthly Council Meeting was held on Thursday, the 18th instant, when the President (Mr. F. G. Rice) occupied the chair. The meeting was of a lengthy and discursive character, and was protracted till a late hour.

After reading the minutes of the ordinary Council Meeting, held on October 21, and of the special Council Meeting on November 4, the Council proceeded to consider a long and important agenda.

The question of a builder, who is appealing against the decision of an Arbitrator, was considered. The opinion of counsel was read, and a certain course of action decided upon.

On the report of the proceedings of the Organisation Committee a long discussion took place as to the eligibility of subcontractors for associate membership, the same firm frequently trading both as builders' merchants and as subcontractors specified by architects, and therefore exposed to the same attacks as the master builder himself. Under such circumstances, it was considered hardly fair for the builder to have to do all the fighting in the event of a trade dispute, while the subcontractor could stand aloof, and even extend his operations.

It was proposed by some that those who are likely to compete with the builder should give an undertaking to take the same chance as he does and support him in case of need. It was well known how much disorganisation is caused by some subcontractors. They treated the builder as of no account, used his plant, and, indeed, rode rough-shod over him, while the builder had to bear all his annoyances without satisfaction to his general operations, and with little or no profit.

After remarks by Messrs. F. Higgs, J. Carmichael, Wr. Lawrence, jun., Ernest J. Brown, W. F. Wallis, Frank May, Col. G. Haward Trollope, F. L. Dove, the Council agreed that those firms who are specified by architects to carry out work usually done by the building contractor be considered subcontractors.

One firm was elected as ordinary member.

Messrs. R. Woollaston & Co., Limehouse, and sixty-eight associate members were elected.

The President produced his draft of the addition to the history of the Association to be given in the 1910 "Diary and Hand-Book," and the Council approved it.

The question of a trade paper being issued free to every ordinary member of the Association was considered and referred to the Finance Committee for consideration and report.

THE AVERY ARCHITECTURAL LIBRARY, COLUMBIA UNIVERSITY, U.S.A.

IN the letter of gift printed in the introduction to the Catalogue of the Henry O. Avery Memorial Architectural Library (Library of Columbia College, 1895) occurs the following paragraph:—

"It is our wish that the purchases made for the Avery Architectural Library be made exclusively by a Commission of three persons, namely, the Librarian of Columbia College, the Professor or acting Professor of the Architectural Department of the School of Mines, and Mr. Russell Sturgis, of New York, whose successor, in case of his declination at any time, is to be selected by the other two members of the Commission as above, to be always an architect and not immediately connected with Columbia College."

In this way the founders of the Library gave to Mr. Sturgis a controlling position in its management, which was proper, as the conception of a standard architectural library in the City of New York was primarily

Digitized by Google

his. During the last ten years of his life Mr. Sturgis approved every purchase made from the income of the Avery Fund. Mr. Sturgis's death has left this honourable position vacant. As his successor the surviving members of the Purchasing Committee of the Avery Library, the late Dr. Canfield of the Library, and Professor Hamlin of the Architectural Department, have elected Mr. Glenn Brown, Secretary of the American Institute of Architects, and author of the monumental "History of the United States Capitol." This selection is approved by Mr. Sturgis's friends, and by Mrs. Avery and her son, and will commend itself to all those who are interested in the architectural profession and in the standard architectural library.

The Avery Library, in Columbia University, is the standard collection of the architectural profession in the United States. It is well endowed, and protected by provisions of the letter of gift of the founders. It proposes to include all the best books on architecture. In addition to its architectural books, a large amount of material on subjects of collateral interest has drifted into the collection; works on painting, sculpture, and decorative design in general.

In the Avery collection there are between 18,000 and 19,000 volumes. In addition to this, the University Library possesses in its circulating department an indeterminate mass of artistic material which is probably equivalent to 10,000 volumes. Altogether, the University library contains between 28,000 and 30,000 volumes on various subjects connected with the fine arts. Thanks to the consideration and self-control of its readers, it has been found practicable to make all this material freely accessible to the general public, and especially accessible to the University public.

NATIONAL WELSH WAR MEMORIAL, CARDIFF.

THE illustrations show two of the figures on the National Welsh War Memorial just erected at Cardiff, of which Mr. Albert Toft is the sculptor.

The architectural portion of the memorial, which was also designed by the sculptor, is a Portland stone stele rising from a flight of steps, and surmounted by a figure representing Peace. Of the two side figures, of which illustrations are given, that on the left represents "Warfare," with the significant motto—"Peace on these terms, or war." The other figure represents "Grief." The latter was exhibited at the last Royal Academy, and was one of the best pieces of sculpture of the year. On the front of the pedestal is the inscription:—"To the memory of the Welshmen who fell in South Africa, 1899-1902. Erected by public subscription."

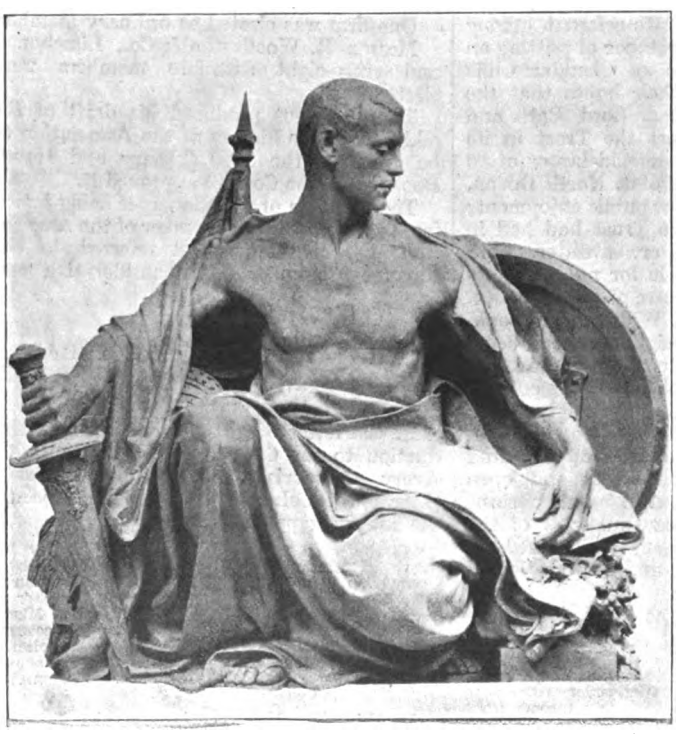
Architectural Societies.

THE ARCHITECTURAL ASSOCIATION CONVERSAZIONE.

The annual Conversazione of the Architectural Association, held last Wednesday evening, passed off with even more than the usual success. The Octagon Hall at Tufton-street was gaily decked out for the occasion. Refreshments (by Messrs. Harrods', Ltd.) were served on the ground floor. Round the walls of the first-floor gallery, where the President, Mr. Henry Tanner, received the guests, were hung the exhibits of the Camera and Sketching Club. The photographs shown were technically almost perfect. Among the sketches we noticed in particular the water-colours of Mr. A. Douglas Robinson; Mr. A. Snow's Caudebec sketches deserve special remark, as also Mr. T. C. Andon's studies of shipping, which are uncommonly truthful. In the lecture-room were hung a collection of water-colours and drawings of more than ordinary interest, including several works by the late Mr. Fulleylove, kindly lent for the occasion by Mrs. Fulleylove. The Corporation of the City of London lent the remarkable series of drawings of Old and New London Bridge, by E. W. Cooke, a veritable artistic treat; their fidelity and delicacy is marvellous. The etchings which Cooke made after them are comparatively well known; the sight of the original drawings was to us not the least enjoyable feature of a well-spent evening. Another notable loan was Mr. Axel Haig's drawings of William Burges's scheme for the decoration of St. Paul's Cathedral. Chief among the other exhibits in this room were Mr. Ernest George's water-colours. "The Rialto" is a fine impression, though some may prefer the more romantic qualities of the view of "Limburg." Mr. Leslie Wilkinson's drawing of the west doorway of S. Trophime at Arles was perhaps the best example of his work to be seen on the walls. Drawings of Penshurst by the late George Devey deserved inspection. The top-floor gallery was hung with examples of the work of the students; some of the first-year work is of surprising excellence. Pitman's Blue Viennese Orchestra supplied a musical setting to the proceedings, while in the lecture-room members of the Architectural Association Musical and Dramatic Society sang in chorus and quartette.

LIVERPOOL ARCHITECTURAL SOCIETY.

The first members' meeting of the session was held on the 15th inst. in the rooms of the Society, 13, Harrington-street, when Mr. F. E. G. Badger (Liverpool Deputy Building Surveyor) read a paper on "Reinforced Concrete and Steel-frame Buildings," illustrated by lantern slides and drawings. The chair was occupied by Mr. E. P. Hinde, Vice-President. A "frame-building," the lecturer explained, was one where all the loads on each individual floor, including the outer walls, were transmitted to the foundations by means of beams and columns. To the proper development of that method of construction the building regulations in force in the principal towns in the United Kingdom had been a great obstacle, but a reformation was taking place, and many towns had followed in the footsteps of Liverpool and obtained Parliamentary powers to relax or modify the provisions of the building regulations. With regard to material, the lecturer said that unless proper precautions be taken steel had two very undesirable characteristics. First, a loss of effective area of metal, due to oxidation; and, secondly, complete inability to sustain itself when subjected to the temperature of ordinary fires. If the steel is properly encased, say, in concrete or cement, it would serve the double purpose of protection from fire and oxidation, as cement is well known to be one of the best preservatives of steel. In that case, the steel must not be painted or oiled, as the cement would not adhere. It was, however, reinforced concrete that would occupy attention in the future. Our cousins across the Atlantic had to a great



Warfare.

Grief.

Sculpture from the Welsh National War Memorial, Mr. Albert Toft, Sculptor.

Digitized by Google

extent been the cause of the comparatively slow development of reinforced concrete in this country. If shavings and pieces of wood are carelessly left at the foot of a column and concreted up, they could not expect anything but disaster. Another cause of delay in the acceptance of reinforced concrete as a method of construction had been due to the fact that one effect of our changeable climate on a large superficial area of a reinforced concrete building is the cracks which were visible in the thin walls, and these, unfortunately, had given rise to alarmist reports by irresponsible persons. The first advantage attaching to reinforced concrete construction was economy, and other advantages were strength and capacity to resist fire. A vote of thanks to the lecturer was proposed by Mr. W. E. Willink, and seconded by Mr. Hastewell Grayson. In the discussion Professor Reilly, Mr. Alexander (City Building Surveyor), Mr. S. R. Surtees, and Mr. A. C. Ardern took part.

EDINBURGH ARCHITECTURAL ASSOCIATION.

A lecture on "A New Theory of Proportion Applied to the Façades of Grecian Temples" was delivered by Mr. G. S. Aitken, architect, to the Edinburgh Architectural Association on the evening of the 17th inst. After allusion to Vitruvius and to the work done by Sir James Pennethorne and Mr. Penrose on the optics and refinements of Greek architecture, and to the system of proportion formulated by Mr. Watkiss Lloyd, reference was made to Mr. D. R. Hay's labours in the middle of the XIXth century, and Professor Kelland's approval of them. It was found, however, that Mr. Hay's interesting theories did not accord with the facts of the Parthenon to which he applied them. A solution was sought in a letter of Sir Isaac Newton, where a remark about the sides of polygons quadrating with rectangles furnished a workable basis. The remainder of the lecture was devoted to this, and took the form of applying the angles of 60° and 30° which arose out of the hexagon, and of 67½°, 45°, and 22½° furnished by the octagon to a series of thirty-one Greek temples, in which it was shown that they could all be built up from the given basal line of the upper step of the stylobate by using these angles or combinations of them with arcs of circles to determine the heights of the columns, and of the entablatures and pediments. The Theseum, for instance, is worked out by employing an angle of 22½° for the lower part, and of 30° for the upper part of the façade. A divided line of 60° fixed the diameter of the columns, and intersecting angles of 45° and 30° determined the depth of the stylobate. The application of the angles varied according to the effect which the Greek architect desired to produce. It was pointed out, in conclusion, that the use of the law which regulated the design of the Greek temples would be to the æsthetic advantage of modern architecture, and that successful acoustics depended upon the acknowledgment of it.

MANCHESTER SOCIETY OF ARCHITECTS.

The annual dinner of the Manchester Society of Architects was held on the 17th inst. at the Midland Hotel, the President, Mr. P. S. Worthington, presiding. There were present Mr. Ernest George (President of the Royal Institute of British Architects), the Lord Mayor of Manchester (Mr. Behrens), Mr. A. Hopkinson (Vice-Chancellor of Victoria University), Professor Capper, Mr. Isaac Taylor (Hon. Secretary), Mr. W. Cecil Hardisty, Mr. Edgar Wood (Vice-Presidents), and others. The President, in proposing "The Royal Institute of British Architects," spoke of the work accomplished by the Institute during the last twenty years. This year the number of Fellows of the Institute was 888, Associates 1,338, and students 466, whereas twenty years ago there were only 466 Fellows, 723 Associates, and no students. In the matter of members the Institute was clearly flourishing, and becoming more and more representative of the profession throughout the country. In Manchester their numbers had increased to perhaps an even greater degree. With the extension of the Institute the provincial societies would be largely represented, and the Institute would take into consideration the problems which provincial societies had to deal with. With that stronger position and with the appreciation which he thought was shown by the public to architecture, they might assume that architecture would take its place among the arts more than in the past. Mr. Ernest George responded.—The "City of Manchester" was proposed by Mr. Paul Ogden, and replied to by the Lord Mayor, Mr. Behrens, while Mr. Roger Oldham proposed "The University of Manchester," and Vice-Chancellor Hopkinson replied. Mr. S. F. Butcher, President of the Manchester Law Society, responded to the toast of "The Legal Profession," submitted by Mr. A. J. Murgatroyd.

NORTHERN ARCHITECTURAL ASSOCIATION.

A meeting of the students of this Association was held last week when Mr. J. G. Smith read a paper on "Portland Cement Manufacture and Testing." After giving a brief outline of the history of its manufacture, Mr. Smith dealt with the great progress made in recent years in the grinding of cement, his remarks being accompanied by practical demonstrations of passing cement through a sieve of 32·400 holes per square inch. The lecturer also described the expansion test which has been welcomed by manufacturers, who see in its adoption the more equal consideration of a cement whose strength is progressive, and one which, while giving a superior result on the seven days' tensile test, deteriorates afterwards. During the evening students were afforded an opportunity of examining a testing machine, a number of briquettes being tested for tensile strength.

Archæological Societies.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

The opening meeting of the Session was held at 32, Sackville-street on the 17th inst., Mr. R. H. Forster in the Chair. Mr. Emanuel Green read a paper on Somerset Club Brasses, and pointed out that the custom of carrying a rather large ornament of brass on the usual club staff of the village friendly society was apparently peculiar to that county. Several examples were exhibited, and these, which were for the most part of an armorial character, are now somewhat scarce and difficult to obtain.

Engineering Societies.

ENGINEERING AND SCIENTIFIC ASSOCIATION OF IRELAND.

At a meeting of this Association last week Mr. A. W. Brown read a paper on "Mill and Factory Chimney Construction." He said brick was the best material for chimneys. Steel chimneys were going out of favour because of the inferior draft capacity, high maintenance costs, short life, and difficulty of repair. Ferro-concrete chimneys had not been a great success, owing, no doubt, to temperature difficulties. Further, the ordinary difficulties of construction were serious. When they considered that the range of temperature might run from 1,200° Fahr. to 300° Fahr., it was only to be expected that trouble would arise in ferro-concrete chimneys. Formerly the construction of factory chimneys was in the hands of architects; now most large or important chimneys were designed by specialists. The following points must be considered:—(1) When the chimney is to be built; (2) the purposes for which it is to be used; (3) the amount of heat to be dealt with. In chimney construction, given a certain size, the first problem was to design with least materials to give stability, *i.e.*, to build at lowest cost. If ordinary square bricks were used, bonding was poor, waste was great, and the chimney must be square, otagonal, or hexagonal. The speaker then went on to describe two chimneys, one octagonal and the other circular, and gave the following particulars. The chimney to be 200 ft. high, 6 ft. 6 in. internal diameter at top, to be built of perforated bricks, and to withstand a gale of 100 miles per hour; maximum stress at lee edge not to exceed 15 tons per square foot; maximum load on foundation due to dead weight not to exceed 12 tons per square foot; firebrick lining to be 55 ft. high; flue inlet 9 ft. by 4 ft. at ground level. The author then proceeded to go into the detail of design of the two chimneys, showing that the circular chimney was 25½ tons less dead weight, and was a much stronger erection.

METROPOLITAN ASYLUMS BOARD.

At the fortnightly sitting of the Metropolitan Asylums Board on Saturday last week the following matters were dealt with.

Accommodation for Motor Vehicles.—A letter from the Local Government Board was received approving of the plans relating to the provision of accommodation for motor vehicles at the Eastern and South-Eastern Ambulance-stations.

Cleaning and Painting Works. — The Hospitals Committee reported having forwarded to the Works Committee for their observation and suggestions, schedules of the cleaning and painting works and repairs which it was proposed to carry out at the infectious hospitals and wharves during 1910, and it was agreed that such painting and cleaning works as might be authorised by the Committee should be carried out either by direct labour or by contract, as they might determine after consultation with the Works Committee.

Caterham Asylum.—The Local Government Board having approved of an expenditure not exceeding 845*l.* on the work of converting into infirmaries the three floors of block E on the female side, of block F on the male side, and the ground and top floors of block D on the male side of Caterham Asylum, the Works Committee reported having, on the recommendation of the Chief Engineer, authorised the works being carried out by temporary labour under its supervision.

Darenth Asylum.—It was agreed that Messrs. Aldwinckle & Son be appointed as architects in connexion with the erection of additional workroom accommodation at the Darenth Asylum, at a commission at the rate of 5 per cent. on the total cost of the works.

Additional Buildings at the Children's Infirmary.—A long report was submitted by the Children's Committee on the successful result of the experiment of utilising the Southern Hospital for the treatment of sick, convalescent, and debilitated children, and a number of recommendations were made for increasing the accommodation by providing additional buildings. The proposals include the provision of isolation wards and school buildings for the patients, extra staff accommodation, the installation of a heating system, and the repair of roads. The recommendations were that the Works Committee be asked to prepare plans and estimates for the work. For the repair of the roads the estimate was 3,570*l.*

Professor Smith moved that the report be referred back, on the ground that the report had only been before them forty-eight hours, and they had not had time to consider proposals which he understood would cost something like 50,000*l.*

Mr. Lilo seconded the reference back.

Mr. Eckroyd pointed out that the adoption of the recommendations would not really commit the Board to any expenditure.

Mr. Lower said that they would have to spend 10,000*l.* on heating even if the other proposals were not carried.

The amendment was defeated on a division.

After considerable discussion the recommendation for the provision of a hall and schoolrooms was referred to the General Purposes Committee, and the other recommendations were adopted.

INTERNATIONAL EXHIBITION OF FINE ARTS, VENICE.—The municipality of Venice has decided to hold the ninth Fine Arts Exhibition in the course of May next, instead of in the spring of 1911. The arrangement is made in order that the exhibition shall not clash with that which will be held, in 1911, in Rome.

Digitized by Google

NOVEMBER 27, 1909.

TO CORRESPONDENTS.

"RUSTIC" (should have enclosed name and address).
E. A. R. & Co. (next week).

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

MONDAY, NOVEMBER 29.

The Royal Institute of British Architects (Business Meeting).—The following matters will be brought before the meeting:—By Mr. Wm. Woodward: (1) The London County Council's General Powers Bill, 1909, and the note thereon on page 643 of the *Journal* for July 24, 1909; (2) architects' responsibility in connexion with dry rot in buildings; (3) the necessity of assessors in competitions adhering strictly to the cost limits laid down by promoters; (4) the advertisements of "stores" and other firms as regards the employment of establishment architects; (5) the advisability of admitting reporters to our business meetings; (6) to inquire what has been done by the Council in connexion with the proposed new bridge over the Thames.—By Mr. G. A. T. Middleton: (1) To move that reporters shall be admitted to the meeting; (2) to introduce to the consideration of the Institute a suggested Registration Bill for Architects, and to move its adoption by the Institute clause by clause. Mr. E. Greenop: To call attention to the unsatisfactory position of the present Institute schedule of charges, and its inadequate provisions for many of the circumstances arising in daily practice, and propose a resolution. 8 p.m.

London Institution.—Mr. H. Beaumont on "An Architectural Journey from Noyon to Rheims." Illustrated. 5 p.m.

TUESDAY, NOVEMBER 30.

The Institute of Sanitary Engineers (Students' Lecture).—Mr. H. W. G. Macleod, B.Sc., on "Water and Water Supply." 7 p.m.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. IX.—"Greek Architecture. IX.—The Parthenon, Athens." 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy"—VII. 6 p.m.

WEDNESDAY, DECEMBER 1.

Edinburgh Architectural Association (Associates' Meeting).—Mr. A. Pordage, Firemaster, on "Effects of Fire on Fire-resisting Construction." 8 p.m.

Society of Arts.—The Hon. R. C. Parsons, M.A., on "Resilient Wheels for Vehicles." 8 p.m.

Institute of Sanitary Engineers.—Mr. R. Horton on "Petrol Air Gas Lighting." 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

THURSDAY, DECEMBER 2.

Builders' Benevolent Institution.—Sixty-second annual dinner, Whitehall Rooms, Hotel Metropole, Charing Cross. 6.30 p.m.

FRIDAY, DECEMBER 3.

Glasgow Architectural Craftsmen's Society.—Mr. A. Smith on "The Restoration of a Newfoundland Cathedral." 8 p.m.

Institution of Mechanical Engineers.—An extra meeting, when the discussion will be resumed on Mr. Herbert A. Humphrey's paper on "An Internal-Combustion Pump, and other Applications of a new Principle." 8 p.m.

SATURDAY, DECEMBER 4.

Edinburgh Architectural Association. — Associates' morning visit to Messrs. A. Ballantine & Son's Glass Staining Works, 42, George-street.

Fifty Years Ago.

FROM THE *Builder* OF NOVEMBER 26, 1859.

COMPETITION DRAWINGS.

THE motto system, even in the point of view of the objects of the promoters of a competition, has been shown to be not merely useless, but prejudicial; and in the present case, the stipulation that the motto should not be in the author's handwriting has been, equally as usual, inefficacious for concealment. Some of the best designs are at once to be referred to certain authors, from treatment and character, and the manner of drawing; and in others, the same mottoes, and, we think the same handwriting, are used as were appended to designs, obviously of the same authorship, which were reported upon by us at Westminster, Manchester, or elsewhere. The identification is assisted by the description of mounting, and that in spite of the careful prohibition by the committee at Cambridge of "ornamental margins." The system, simply, gives prominence to some competitors, and does not give to others that which may be their due by merit. It is retained because committees, not aware of the objection to it, are under the idea that it is consistent with fairness, and is acceptable to architects. We trust, however, if competitions are to be continued, we may shortly be able to speak of the use of mottoes as merely optional. It may be said the effect would be to direct attention to designs by architects having a reputation. But, with professional assistance in selection, we do not think that would be the objection; whilst, without such assistance, we are prepared to show, not merely the objects of committees, but probably those of the profession generally and of each architect, would be better served had the name and experience of an individual just so much weight as a committee are compelled to place in the balance when they come to actual building—so much as will constitute a design something more than a picture—a mere unacted drama—a *vox et prætera nihil*. The whole, however, adds to the argument otherwise in favour of the professional assistance.

*** The above quotation shows that we argued in favour of the appointment of a professional assessor a quarter of a century before the idea came into practical working.—ED.

Illustrations.

SOUTH TRANSEPT, WESTMINSTER ABBEY.

THIS fine and complete set of measured drawings of the end wall of the South Transept of Westminster Abbey is by Mr. C. A. Bassett-Smith. We have had the drawings lithographed for some time, but reserved their publication for some occasion when they would have a special reference to an article on the paper. As we are reviewing this week Mr. Bond's new book on Westminster Abbey, they come in fittingly as contributing an important illustration of the subject.

The wheel window is a restoration, but otherwise this is a record of English mediæval work of the finest type; and the plans of each story, and the numerous sections of mouldings, provide a very complete illustration of the architectural structure of the design, and our readers will no doubt join in our thanks to the author of the drawings for enabling us to publish them.

THE SURVEYORS' INSTITUTION:
TOWN PLANNING SYSTEMS.

AN ordinary general meeting of the Surveyors' Institution was held on Monday, at No. 12, Great George-street, Westminster, S.W., Mr. A. Rose Stenning, President, in the chair, when a paper was read by Mr. W. R. Davidge on "Town Planning Systems."

Mr. Davidge, who showed a number of interesting lantern views and plans, said London owed something to the Great Fire, and might have owed much more had the rebuilding been carried out in the way Wren and others would have had it; and it was instructive even now to compare the schemes proposed by John Evelyn and Sir Christopher Wren for the rebuilding of London. Vienna, Paris, and Berlin were all indebted to the sacrifices, and often to the sufferings, of the past, and it was possible that the development of these cities would not have been so complete or so satisfactory had they been constructed at their earliest inception on the lines of some general plan instead of by the troublous and slow development, piece by piece, they had been forced to follow. Town planning, as we know it, was but a development of the best points in existing systems, and their adoption to a greater or less extent to the special requirements of the particular community. With the exception, perhaps, of the newer parts of Edinburgh, Eastbourne, Bath, and one or two smaller towns, very little definite planning had been carried out in Great Britain; but the subject was a living one, and it behoved us to profit to the utmost of our powers by the experience of continental and other nations who had adopted previous systems of town planning.

The author then considered some German examples, and remarked that town plans, whether complete or only partially so, would generally resolve themselves into one or other of the following, *i.e.*, rectangular, triangular, radiating (constituting the formal systems), and irregular or picturesque school, with variations made up from the use of several or all of these systems.

He then dealt with these systems at some length, giving a number of illustrations, and then spoke of provision for future development. Speaking of irregular outlines, he said that modern requirements demand that the streets shall be of ample width, and there could be no two opinions that the tree-planted street with its welcome shade and refreshing greenness was to be preferred to the narrow street of the older type or to the barren and scorching wilderness of dust or paving which was unfortunately so often typical of the modern city. It sounded almost sacrilege to say it, but it was just possible that our Building Acts and by-laws might be in some way a mistake, that our rigid enforcement of building lines and regulations apparently aiming at establishing a perfectly straight unbroken expanse of blank wall—miles of it—without a projection of any sort if it could be avoided, might be misguided.

In laying out a new town or portion of a town the necessities of the future would naturally have precedence over all other considerations, and due regard must be given to:—

1. The lines and widths of main routes and directions of principal subsidiary streets, having regard to prevailing winds, traffic requirements, preservation of views, etc.
2. Public buildings to be provided, churches, schools, public halls, theatres, baths, libraries, post-offices, municipal buildings, and such-like—their number and probable size.
3. Open spaces to be provided for
   (*a*) Playgrounds, parks, and recreation grounds;
   (*b*) Public squares, having regard to probable extent and grouping of public buildings, monuments, etc.
4. Districts to be reserved for factories and dwellings, and zones for limits of heights of buildings (if any).

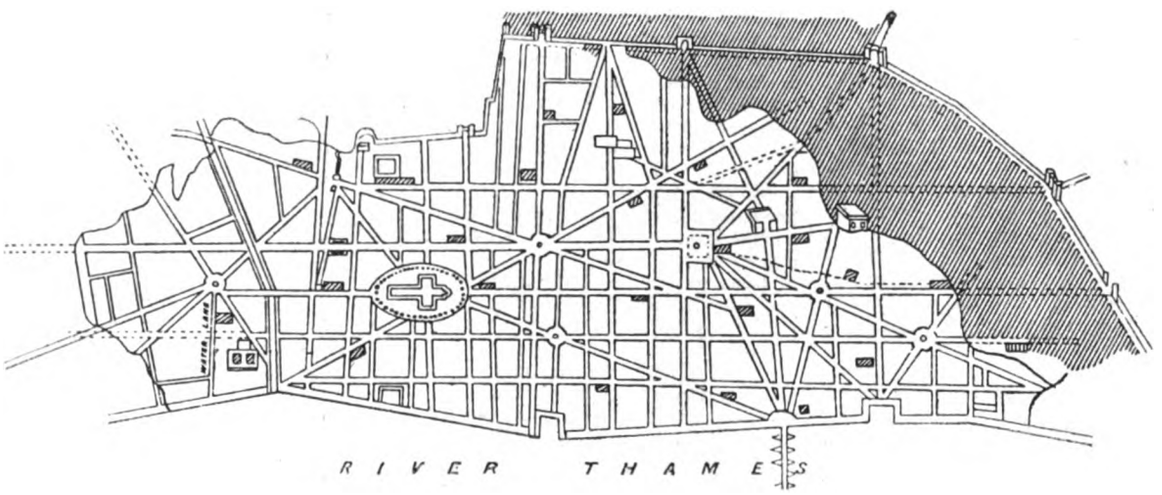
In considering the difference between English and German conditions, he said that the above considerations and any others dictated by special local circumstances should naturally be taken into account in any plan

Digitized by Google

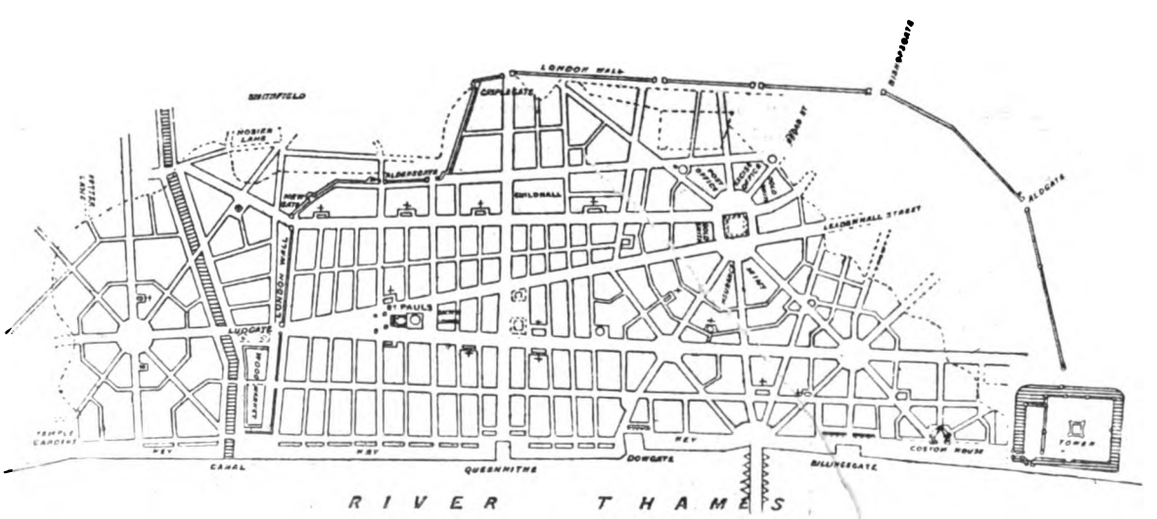
for town extension. In our own country the Englishman's house was, at any rate in theory, still his castle, and the ambition of the thoughtful artisan or other worker was to occupy a cottage pleasantly situated in the country or in the outskirts of the town in which his work lay. In Germany it was the rule rather than the exception for the artizans' dwellings to be of the tenement type, and, despite other improvements, overcrowding in that sense was much more rife even than in England. It followed from this fact that the population was much less closely housed in this country, that our English cities, and particularly their suburban districts, occupy a much greater area than a similar population would require in Germany. The problem of development was thus if anything a more complex one, and any schemes for town planning should provide for future development in a much more expansive way than was necessary with our neighbours. The throwing down of the town walls and fortifications within comparatively recent times in many continental cities had given an opportunity for a belt of public grounds or broad tree-planted boulevards within comparatively easy reach of the centre. The ducal or autocratic control so common in many of the German cities had also to a large extent enabled the problems of town development to be undertaken on comprehensive lines and on broad principles. We in England had no town walls to demolish and we were not under such autocratic sway. The great ground landlords of many of our large towns could nevertheless do much for the public good in this direction if they would but unite forces with the representative local authorities of their districts. We had nevertheless other compensating advantages for the purposes of town planning in the larger area and more convenient proportions of our enclosures, and, as a rule, in the fewer number of owners with whom negotiations must be opened. The cottage dwellings and other two-story buildings so usual in this country also rendered unnecessary in the majority of cases any special legislation or regulation, so common in Germany, for limiting the height. Fresh air and prevailing winds alike found easy access to dwellings under such conditions if sufficient open space was provided around the buildings. But the density of population allowed or rather encouraged by our present model by-laws might be anything up to 300 or more per acre for even our ordinary two-story cottages, and it would certainly seem advisable that some improvement in the amount of the private open spaces to be provided, as well as those of a more public character, should go hand in hand with any scheme worthy of the name of town planning.

Modern traffic requirements demanded that all parts of a city shall be accessible to rapidly-moving vehicles and, particularly since the advent of the motor, the idea seemed to be general that these streets should be as straight as a dart. The widths to be provided for the various classes of streets were of the utmost importance, and the possible direction of future lines of route should as far as possible be anticipated. The lesser subsidiary streets would naturally be planned in each case with due regard to the contour of the ground, direction of prevailing winds, access to railway-stations and other points, and the question would have to be considered whether a straight or curved street was to be adopted. The cost of making up streets, macadamised or paved the full width, was considerable, and it would in many cases be cheaper and more effective to make up only the width necessary for the actual traffic, leaving grass margins at each side. Broad straight thoroughfares were naturally best adapted for monumental avenues leading directly to some national or civic building of sufficient importance, and possibly it might also be added for main through roads conducting one to important towns. It was at least questionable, however, whether long straight streets did not lose much of their effect if constructed in too great profusion, and without any special objective. Such an avenue should have some special *raison d'être* to justify its existence, and it should terminate in something more inspiring than a dust destructor or a house of refreshment. The typical irregularity of the streets of nearly all old cities was attributable to their gradual historical development, and their sometimes astonishing twists and turns might generally be ascribed to practical causes, such as the presence of an ancient way or watercourse. But it must be borne in mind that the irregularities of a plan which looked so strange on paper were not necessarily disagreeable in actual execution, but often gave an added interest or more picturesque effect to the street. Regularity of plan was by no means essential.

With streets as well as with squares it was frequently desirable to frame or limit the view, and this was most generally achieved by forming a break or curve in the line of sight; the junction of Regent-street with Portland-place would serve to exemplify this, and the construction of quadrants and curved façades was another expression of this general feeling. With a strongly-marked curve (such as the quadrant in Regent-street) there might possibly be a tendency to irritation if the length was unnecessarily prolonged, but with a slightly



Evelyn's Plan for St. Paul's and its Neighbourhood.



Wren's Plan for St. Paul's and its Neighbourhood.

Digitized by Google

curving frontage there was ample opportunity for a continually varying horizon, for a moving picture of continual charm. This was particularly the case where numerous objects or buildings of interest existed on the same line of route. For a tree-planted street, a slightly curved line not too regular in form gave perhaps the most pleasing effect, and for suburban streets in particular this method of planning with its continual green vistas of trees was worthy of the utmost encouragement. The most successful of the garden suburbs had in many cases been designed on such lines—a maximum of garden, a minimum of suburb. Even in this case, however, the curved streets should not be overdone. Nothing was more bewildering to a stranger than to find himself in a labyrinth of streets curving in every direction except that in which he wished to go. In a town street a curved or irregular line of frontage might be made to provide just the spaces for cabstands, sandbins, public ambulances, telephones, fire escapes, fire calls, and the other conveniences which were so essential to the comfort of life in a modern city. In a less crowded street the continual change of view, due to the irregular frontage, helped to break the thoroughfare up into short sections; the foot traveller felt conscious as he passed landmark after landmark on his way that he was indeed making good progress, and pressed forward with encouragement, very different to the unfailing weariness produced by a mile of straight road both on mind and body. In modern towns irregularities of planning had not perhaps always been a success, their artificial character was too apparent, and in many cases the irregularities were simply cut-away plots of triangular shape produced in connexion with street improvements, or perhaps due to the parallel shape of plots forcing the houses into *echelon* formation. The crooked street of our forefathers was perhaps too crooked for modern ideas, but it should at any rate be possible for us to grasp some of the principles which consciously or unconsciously must have guided the men of the past. With the advance of sanitation and the increase of traffic we demanded wider streets and more breathing space. Straight streets were undoubtedly necessary for many purposes; if wisely used they gave an air of stateliness and a sense of fitness and monumental grandeur; but the so often reiterated use of the rectangular or draught-board pattern of street planning, without consideration to the shape or contour of the ground or to any other local circumstance could not but be regretted.

The lecturer then referred to the question of traffic centres, and in this connexion he noted the suggestions recently made in a Report upon the street traffic of Paris. The suggestion was not so much a constructive one as for the regulation of existing traffic, and to enable two or more streams of traffic to cross at any angle without confusion. It was suggested that at important street junctions circuses should be formed with a central island of some size, the traffic being made to circulate solely to the left, or in one direction only. Some such system of traffic regulation was at any rate worthy of a trial, and with the assistance of the London policeman should not be difficult to carry out. The main drawback appeared to be that traffic proceeding from one road to another immediately on the right would have to make almost a complete circuit of the space. It might be advisable, also, in cases of any heavy traffic to provide subways or other facilities for foot passengers. The French proposal suggested that the central space might be entirely open at a level of about 10 ft. below the street, short subways being constructed from this to staircases at the various street corners.

Parks must always be provided for the public, and these should be in as easy communication as possible with the most congested portions of the town. It was not too much to say that public gardens or tree-planted spaces were a vital necessity for the health and well-being of the community, and there could be no question that the beauty of a town was greatly enhanced by the presence of a sufficiency of trees and well-kept gardens. Ample space should also be provided for the purpose of playgrounds for the children, and these should be of a pleasant character and something more than gravel or asphalt wildernesses. A point that was not always borne in mind in designing squares or open spaces was the proportion which the space should bear to the surrounding buildings, and particularly to the dominating building which was to abut upon it. The charm of the older cities was in hardly any case obtained by the use of large open spaces; their pleasing result was attained by a judicious grouping or arrangement of comparatively small spaces. Sitte, who had made a close study of a large number of mediæval and other towns whose charm was undeniable, stated that in front of a building such as a church of considerable height in proportion to its breadth, in which the vertical note predominated, the place or open space should be *deep* and narrow, while in front of a long façade such as that of a town hall or other building of considerable length the open space should be *wide*, rather than deep. Experience showed, he said, that the minimum dimensions of a place should be equal to the height of the principal edifice fronting thereon, and that its maximum dimensions ought not to be more than double such height.

As to the possibilities for London, the first necessity was for co-ordination of effort among the many authorities in whose tender mercies the hapless Greater London was situated. Some such co-ordination should be possible under the direction of a central authority invested with sufficient powers. Given such co-operation, the next thing was evidently to take stock of our present advantages—our parks, open spaces, watercourses, commons, country lanes, and main highways, and to make all such assets as accessible and convenient as possible. Of Garden Suburbs we had already a few, but they needed to be increased in all directions. In parks and open spaces London was apparently well provided, but many of these were concentrated in the better-class neighbourhoods, and whole tracts of bricks and mortar still existed with hardly a tree-planted street, and only an occasional spot of green grass in the shape of a disused burial ground. Areas which might be utilised as public parks were steadily absorbed by factories and rows of mean streets, each individual owner naturally striving to make his land return as much as possible by crowding the bricks and mortar as closely as Building Acts would allow. Apart from the question of improving and widening many of the existing roads out of London, and of providing new routes where necessary, one of the first considerations should undoubtedly be to bring the larger parks and as many other green open spaces as possible within easy reach of all sections of the community. A broad boulevard or ring strasse might be formed, somewhat on the lines that have made Vienna and other cities so magnificent. The suggestion would provide for the connecting of the principal parks by a broad tree-planted avenue, with green grass and gardens at frequent intervals. Imagine the improvement effected if Hackney Marshes, for example, were transformed from a plain bare wilderness of parched grass with straight ugly canals, into a veritable Bois de Boulogne intersected by beautiful waterways. We did not make half enough of our present assets and with expert assistance there would be innumerable fields for the beautifying of London. The Regent's Canal was in many places one of the most beautiful of London's ways, but it meant little, if anything, to the thousands of Londoners who caught but a glimpse of it from the top of an omnibus over the parapet of a high-walled brick bridge, or through the chinks of an advertisement hoarding. What a glorious series of shady walks might be made by its banks with a little thought, a little sacrifice! Very few great cities were more finely situated by nature than London, if we could but realise it. Both on the north and south it was girdled by hills, and the broad expanse of heath at Hampstead and the hills of Sydenham and Forest Hill were splendid fringes for a splendid city. On the east and west we had already an almost continuous chain of truly beautiful parks, and yet the main roads lined closely on each side by houses in many cases thread their way through the closely-built area between the parks, almost within reach, yet entirely out of touch with the green grass and green fields. The remedy was clearly to open out all such parks so that they could be appreciated and utilised to the fullest possible extent.

No planning, however, could hope to be of real service in beautifying our cities unless the architecture of the buildings was in accord with its needs and worthy of its purpose. Some efficient architectural control there must be, but at the same time it was evident that in England at any rate as free a hand as possible should be given to individual tastes. With our present methods this might appear well-nigh impossible, but with a better and more general appreciation of the art of building it would not be an impossible ideal to reconcile these conflicting schools. Although perhaps in the central and more important areas it might be necessary to require buildings to be to a strictly regulated and restrained design, in the outskirts there was no reason why much more latitude should not be allowed for individual ideals. The garden suburbs, which had been formed in various places around our great cities, were many of them delightful in their planning and surroundings.

The lecturer, having referred to town planning authorities, gave a brief summary of the conclusions to which one was led:—

1. Each town must have an individuality of its own.
2. Natural assets, such as hills, woods, and water, must be preserved and extended.
3. Main lines of route must take direction required by traffic and contour of ground.
4. Geometrical planning must not necessarily be adopted as satisfactory.
5. Long straight streets, when adopted, should have a definite motive.
6. Slight curves or irregularities in frontage lines might, in many cases, be adopted with advantage.
7. Line of sight should, in most cases, be restricted within reasonable limits, *i.e.*, lines of long streets, except as mentioned above (No. 5), should be broken, and all views should as far as possible be framed in a suitable setting.
8. The grouping or arrangement of the principal buildings and open spaces should in all cases be specially studied with a view to securing the best effect for the whole.
9. No planning scheme could be considered as complete without a sufficiency of open spaces, and due regard must be paid to proportion and to architectural design.

Mr. Leslie Vigers, in moving a vote of thanks to the lecturer, said it was a great pity that Wren's principle of rebuilding London had not been carried out, and they could not help feeling that Wren's mind went far beyond his time. The general tendency of legislation was far too much in the direction of concentration in the hands of Government Departments and Borough Councils, and that was very much the case in regard to the Housing and Town Planning Bill. We were bound too much by the theories of men who happened to be in office and with no means of getting outside what they enforced. And we suffered, to some extent, from what he would call the 2-ft. rule reading of the Building Acts, though in that particular case there was the right of appeal to the Tribunal of Appeal, consisting of men of experience and of independent mind; but still there was too much of this 2-ft.-rule way of carrying out the Acts. He had the greatest sympathy with garden city associations and companies in the work they were doing, but he did not think we had got the people up to a condition to appreciate what was being done. As to streets, he thought that the breaking-up of the roof line of streets was a great advantage from an architectural

Digitized by Google

point of view, and the greatest advantage was the breaking-up of the circulation of the air.

Mr. Henry Lovegrove seconded, and said he had visited many of the places on the Continent referred to by the lecturer, and he had always been struck by the fine open spaces and the splendid arrangement of the streets in many of those places. We did not get chances of planning new towns, but we had to deal with the enlargement of existing cities, generally, in which were factory chimneys and miles and miles of dreary streets. Bath always struck him as a particularly well-designed and planned city. Many picturesque cities on the Continent grew up accidentally, so it seemed to him, but what would happen to them in the event of a fire, especially to a city like Berne? Mr. Davidge's scheme for connecting the parks was a fine one, but had he thought of the poor ratepayers? The tendency of the present day was to take the people away from the centre of London right into the country, which was a very good thing in one way, but it interfered with the trade of London.

The President said they were to have a paper on January 10, by Mr. Wilmott, on the "Housing and Town Planning Act," as he called it, and it was proposed to adjourn the discussion on Mr. Davidge's paper and to take the discussion on the two papers on January 24.

The vote of thanks having been agreed to,

Mr. W. Woodward moved the adjournment of the discussion, and, this having been agreed to, the meeting concluded.

The next meeting will be held on December 6, when a paper will be read by Mr. C. P. Hall on the subject of the "Direct Payment of Rates."

ST. MARGARET'S HOSPITAL, WIMBORNE.

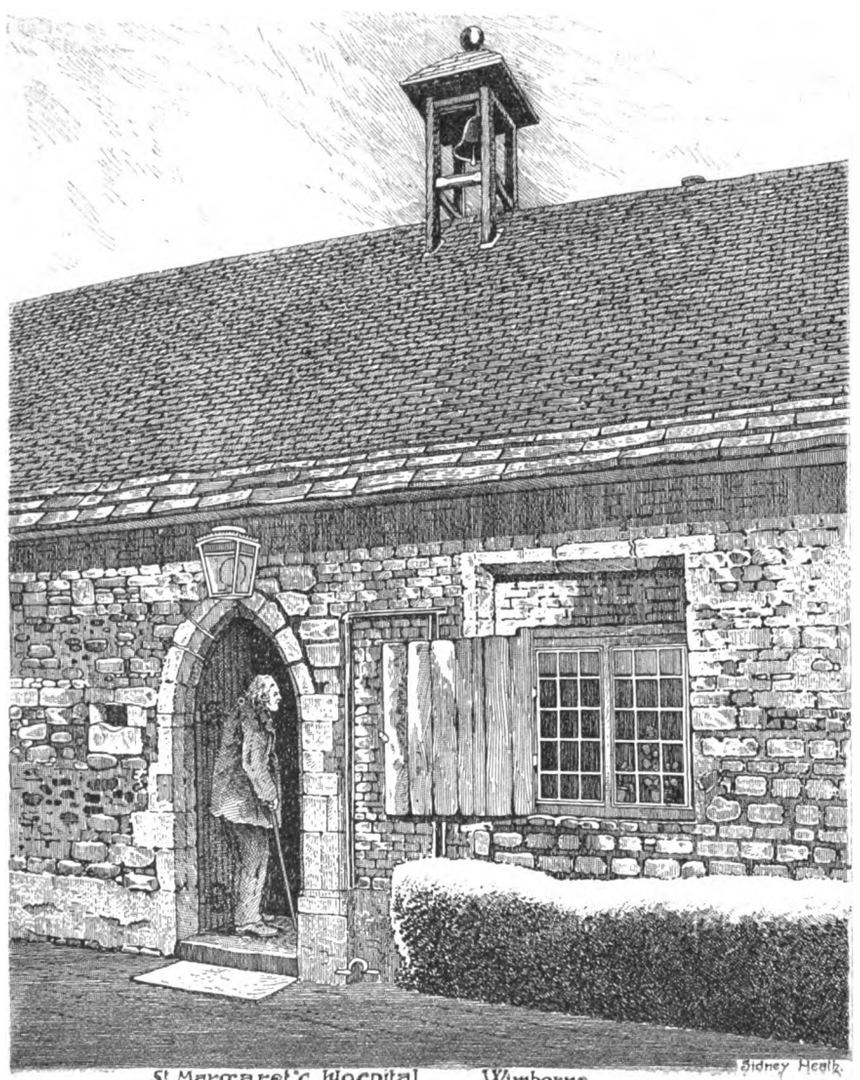
LIKE so many of our really old charitable institutions, St. Margaret's Hospital, situated a quarter of a mile to the north-west of Wimborne, appears to have been founded originally for lepers. Tradition gives John of Gaunt, son of Edward III., as the founder, but what slight documentary evidence exists seems to indicate an early XIIIth century institution. The foundation was not one of the well-endowed, and it appears to have been largely, if not altogether, maintained by the gifts of the charitable, who, in return, were granted various indulgences, as is set forth in a deed dated XVI. Henry VIII., wherein we learn that

"Pope Innocent IV., in the year 1245, by an indulgans or bullo did assoyl them of all syns forgotten, and offences done against fader and moder, and all swerynges neglygently made. This indulgans, granted of Petyr and Powle, and of the said pope, was to hold good for 51 yeres and 260 days, provided they repeated a certain specified number of Paternosters and Ave Marias daily."

The chapel joins one of the tenements of the almsmen, and here comes one of the Minster clergy every Thursday afternoon to conduct service. The interior has been refitted in recent years, but the windows, walls, etc., remain in their original state. There are three doors in the north wall, the doorways of which are chamfered and have pointed heads. The east window has a semicircular head, plain wooden tracery dividing it into two lancets with an opening above them. On the south side some pointed doorways and a lancet window help to determine, together with the deed already quoted, the XIIIth century origin of the building. Some traces of frescoes, both geometrical patterns and figures, remain on the inside walls. The roof is an open one of timber, with the beams running across at the level of the wall plates. To the left of the doorway selected for illustration will be seen a very good outside holy-water stoup, the surface of the stone having been worn into a deep hollow by contact with generations of hands. This stoup is quite perfect, a very rare thing with exterior stoups, while its lefthanded position is rarer still, that is assuming that it is now in its original position, as is highly probable, for had the wall been rebuilt since the Reformation the stoup would have been destroyed. The only other outside stoup in Dorset with which the present writer is acquainted is an equally good example in the wall of the side porch of Broadmayne Church, near Dorchester.

The tenements attached to this little hospital are nine in number—three occupied by married couples, three by men, and three by women. The walls of these dwellings are at present a mixture of stone, rubble, and modern brick. The old stone mullions have been pulled out for the insertion of more modern windows, but portions of the old framings remain, as do a few wooden door frames embedded in the walls, and one or two courses of the enormous slabs of stone that originally covered the roof.

SIDNEY HEATH.



THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Sir R. Melvill Beachcroft, Chairman, presiding.

Roller Skating Palace and Club, Maida Vale.—It was agreed to grant a certificate with regard to the Roller Skating Palace and Club, Delaware-road, Maida Vale, on being satisfied that the premises have been completed in accordance with the two drawings, submitted by Messrs. Gregg & Detmar.

Remuneration of Quantity Surveyors.—The following recommendations were agreed to:—

That Messrs. Northcroft, Neighbour, & Nicholson, quantity surveyors, be allowed 2 per cent. on 2,000*l.* of the amount of the contractors' estimate, 2,140*l.*, for "works to existing buildings" as detailed in the bills of quantities for the enlargement of Amberley-road school (Paddington, N.).

That Messrs. Young & Brown, quantity surveyors, be allowed 2½ per cent. (i.) on 1,000*l.* of the amount of the contractors' estimate, 1,114*l.*, for "tar-pavement, latrines, and drainage," and on 279*l.*, (ii.) the estimate for "exterior painting and repairs" as detailed in the bills of quantities for the structural improvement of the Marner-street school (Bow and Bromley).

Kensington Improvement.—The Improvements Committee recommended that application be made to Parliament in the session of 1910 for authority to widen Church-street, Kensington, to the south of Clarence-mews: and that provision be made in the Bill to require the Kensington Royal Borough Council to contribute one-half, not exceeding 25,000*l.*, of the cost.

Epileptic Colony: New Villas, etc.—The Asylums Committee recommended that, subject to the approval of the necessary plans by the Home Secretary, the estimate of expenditure on capital account of 13,304*l.*, submitted by the Finance Committee in respect of the erection and equipment at the epileptic colony of two additional villas (one for fifty male and the other for thirty-eight female patients), and a general bathroom, and of extending the accommodation for staff in the administration block, and equipping the additional accommodation thus provided, be approved.

Ground Plan of London.—It was reported that up to September 30, 1909, the ownerships of 113 square miles, 338 acres of the administrative county of London had been dealt with, and the boundaries of 33,009 estates (each estate representing one owner) had been defined on the ownership section of the ground plan of London.

Re-erection of Crosby Hall.—The Improvements Committee reported as follows:—

"Drawings have been received showing the proposed re-erection by the University and City Association of London, Ltd., of Crosby Hall, on part of lots 1 to 4, Cheyne-walk, which are surplus lands from the Battersea Bridge improvement, and on adjoining land. It is intended to use all those portions of old Crosby Hall which have been preserved. These consist of (i.) a moulded and panelled ceiling,

Digitized by Google

(ii.) mullions, jambs, and tracery of windows, and (iii.) an oriel window and vaulted roof. A new roof will be constructed to support the old timbers, ceiling, and roof covering. We think that, subject to compliance with the London Building Acts, etc., and to certain general conditions, the drawings may be approved. We have informed the Local Government, Records, and Museums Committee of the facts.

The Committee recommended accordingly.

Apprenticeship.—The Education Committee recommended:—

(*a*) That, in the opinion of the Council, if new duties connected with the apprenticing of boys and girls are entrusted to local education authorities, corresponding grants should be made; that, inasmuch as industrial training is a national and not a local question, technical institutions and technical scholarships should be supported to a much larger extent than at present out of funds provided by the national exchequer, and that the Board of Education be so informed.

(*b*) That a copy of the foregoing report be forwarded to the Board of Education, the Board of Trade, and the Local Government Board.

(*c*) That the foregoing report on the apprenticeship question, submitted by the Education Committee on November 9, 1909, be placed on sale.

Mr. Cyril Jackson moved the adoption of the report, and the Hon. W. Peel moved as an amendment:—"That, while not expressing an opinion upon the suggestions contained in the report, the Council considers that if new duties connected with the apprenticing of boys and girls are entrusted to local education authorities, corresponding grants should be made; that, inasmuch as industrial training is a national and not a local question, technical institutions and technical scholarships should be supported to a much larger extent than at present out of funds provided by the national exchequer, and that the Education Committee be instructed to consider whether it should confer with the Board of Trade with reference to the establishment of employment agencies for children leaving school in conjunction with the new labour exchanges of that body."

Mr. Cyril Cobb seconded the amendment.

Mr. F. L. Dove said that while it was true that elementary education had gone beyond the "Three R's," it had also largely neglected them, with the result that thousands of children were being turned out on the world every year without even an elementary education. He was afraid that not much was to be hoped from trade schools. The age when boys wanted their preliminary training was not fourteen or fifteen, but eleven or twelve. He should like to see the report go back, and an effort made to get in touch with the employers' associations and such interested bodies. All the Committee had done in that respect was to go to the polytechnics, which were not much good; but if the Council got in touch with the men concerned, a scheme might be evolved which would be of advantage.

Mr. Cooper said he believed the Government ought to make grants in order that workmen might keep their sons longer at schools learning their trade instead of going out into the world at the earliest age to earn their living. While the training of the children was most desirable, still one must not look to that alone for the abolition of unemployment, as many skilled workers were unable to find work. Owing to existing economic conditions the parents were only too glad that a boy should go to work as early as possible, in order that there might be an addition to the family purse and added comforts in the home. He was convinced that the real reason why the apprenticeship system was breaking down was that all trades were becoming so much more specialised than they were a few years ago.

The amendment was adopted as the substantive motion. Consequently, after further debate, the Council rejected the recommendation "B," and in place of "C" a resolution was adopted to the effect that the Education Committee should be instructed to prepare for publication a report, together with any reports on the subject by the Finance Committee, it being made clear that the Council had not expresed any opinion on the details.

Withdrawn Tenders.—Mr. Johnson inquired the number of tenders which had been withdrawn since "the protection of the Works Department had been removed."

Mr. Greenwood said fifty-four had been withdrawn, as follows:—Thirty-eight for education work, eight for highways, four for housing, one for improvements, and three for main drainage.

The Preference Clause.—Mr. Johnson questioned the accuracy of a statement that the Education Committee, in the contract for the new school at Haverstock-hill, had insisted upon a clause for the preference of employment being given to London men.

Mr. Cyril Jackson replied that the statement was not then quite correct, but that since then the contractors had agreed to give preference to London unskilled and casual workmen.

Handicraft Centres.—A report of the Education Committee proposed that ten new handicraft centres should be built every year, the average cost of a centre being 650*l.*, exclusive of the cost of site.

The recommendation was agreed to, an amendment in favour of twenty centres a year being rejected.

It was mentioned that it will take twenty-six years, at the rate of progress of ten per year, to complete the accommodation necessary.

Having transacted other business the Council adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1909.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1909. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Bermondsey.—That the application of Messrs. G. Elkington & Son for an extension of the periods within which the erection of buildings on the site of Nos. 117, 118, 119, 120, 121, 122, 123, and 123a, Grange-road, Bermondsey, was required to be commenced and completed, be granted.—Consent.

Brixton.—Additions at the Stockwell Brewery to abut upon the north-western side of Stockwell Green, Brixton (Mr. W. E. Davies for Messrs. C. Hammerton & Co., Ltd.).—Consent.

Brixton.—One-story shops in front of Nos. 414 and 416, Coldharbour-lane, Brixton (Messrs. Style & Winch).—Consent.

Clapham.—A one-story building at the rear of No. 73, Lavender-hill, Clapham, to abut upon the western side of Rush Hill-road (Mr. A. R. Westworth for Mr. J. Soper).—Refused.

Hackney, Central.—A shop front at No. 149, Lower Clapton-road, Hackney (Mr. G. Stapley for Messrs. Barrett & Power).—Consent.

Hackney, Central.—A wood and glass roof over the sunk area in front of No. 26, Church-road, Dalston (Mr. F. Garick for Mr. F. Hilling).—Consent.

Kensington, North.—A one-story shop at the rear of No. 1, Ladbroke-grove, Kensington, to abut upon the northern side of Holland Park-avenue (Mr. G. W. Clarke for Mr. H. Ashcroft).—Refused.

Lewisham.—Porches and wooden bay windows to seven houses on the western side of Fermor-road, Lewisham (Messrs. Norfolk & Prior for Mr. C. Walker).—Consent.

Lewisham.—A vicarage and parish hall on the western side of Clarendon-road, Lewisham (Messrs. Greenaway & Newberry for the Rev. J. C. Morris).—Consent.

Lewisham.—A house on the northern side of Micheldever-road, Lewisham, to abut upon the western side of Wantage-road (Mr. G. A. Lansdown for Messrs. W. J. Scudamore & Sons).—Consent.

Strand.—The retention of a projecting sign at No. 195, Wardour-street, Oxford-street, Strand (Messrs. N. Burt & Co., Ltd.).—Consent.

Wandsworth.—A building on the eastern side of Ramsden-road, Wandsworth (Mr. J. H. Tuppen).—Consent.

Lines of Frontage and Construction.

Battersea.—Retention of a wood and iron shed at the flank of No. 70, Rosenau-road, Battersea, abutting upon the southern side of Ethelburga-street (Messrs. J. A. J. Woodward & Sons for Mr. J. Booth).—Refused.

Line of Frontage, Projection, and Construction.

Rotherhithe.—The erection over the public way of Shad Thames, Rotherhithe, of a steel tube grain conveyor between two parts of the premises known as Cole's Upper Wharf (Mr. J. M. Kennard for Messrs. A. & P. Keen).—Consent.

Width of Way, Frontage, and Construction.

Marylebone, East.—An iron and glass shelter on the southern side of Castle-street East, St. Marylebone, at the premises of Messrs. Waring & Gillow, Ltd. (Mr. R. F. Atkinson).—Refused.

Width of Way and Deviation from Certified Plans.

Whitechapel.—Deviations from the plans approved for the re-erection of a building known as the "Alma" Brewery, on the western side of Spelman-street, Whitechapel, and the northern side of Booth-street (Mr. W. Stewart).—Consent.

Formation of Street.

Hampstead.—That the Council do consent to the application of Messrs. Farebrother, Ellis, & Co., for permission to define the roadway of a new street for carriage traffic leading from Redington-road to West Heath-road, Hampstead, by twelve concrete posts.—Consent.

Space at Rear and Alteration of Buildings.

St. George, Hanover-square.—An iron and glass winter garden over the space at the rear of No. 32, Grosvenor-square, St. George, Hanover-square (Mr. R. G. Hammond for Mr. J. Garlick).—Consent.

Alteration of Building.

Kensington, South.—The covering in of the open yard at the rear of No. 2, Cromwell-place, Kensington (Mr. W. C. Poole for Col. C. Mathew Dinaldson).—Consent.

Uniting of Buildings.

City of London.—The uniting of Nos. 9 and 10, Fell-street, City, by an opening at the second floor level (Mr. W. O'Neill).—Consent.

Cubical Extent.

Clapham.—The erection at the premises of Ross, Ltd, North-side, Clapham Common, of a division to exceed in extent 250,000 cubic ft., and to be used only for the purposes of the manufacture of scientific instruments (Messrs. Searle & Searle for Ross, Ltd.).—Consent.

Marylebone, West.—A further deviation from the plans approved in respect of the erection upon a site abutting upon Oxford-street, Duke-street, and Somerset-street, St. Marylebone, of a building with divisions to exceed in extent 250,000 cubic ft., so far as relates to the erection of a fire-resisting glazed screen (Mr. R. F. Atkinson).—Consent.

THE INSTITUTE OF SANITARY ENGINEERS:

ANNUAL DINNER.

THE annual dinner of the Institute of Sanitary Engineers was held on the 17th inst. at the Holborn Restaurant, W.C., Mr. W. H. Prescott, A.M.Inst.C.E., President, in the chair. There were also present:—Sir Ernest Clarke, M.A., his Honour Judge Rentoul, K.C., Professor W. R. Smith, M.D., D.L., Professor E. G. Coker, M.A., D.Sc., Professor Henry Adams, Messrs. Hamar Greenwood, M.P., Llewelyn Williams, M.P., Alderman Sir D. Burnett, D.L., H. T. Wakelam, W. J. Dibdin, F.I.C., A. Fidler, E. T. Hall, J. A. Howard, Baldwin Latham, T. W. Aldwinckle, H. D. Searles-Wood, E. J. Silcock, Dr. A. Wynter Blyth, A. S. E. Ackermann, S.Sc., E. White Wallis, A. J. Martin, H. M. Hodgson, C. McArthur Butler, G. W. Chilvers, G. Trotman, E. R. Palmer, J. Lawrance, N. W. Hoskins, Hon. Secretary, and others, including several ladies.

The loyal toasts having been honoured,

Sir Ernest Clarke, M.A., proposed the toast of "The Houses of Parliament." He said the time had come when the relationship between the two Houses and the work they had to do would have to be seriously considered. The work of the Empire could not be done in that abominable air which prevailed at Westminster, and the trivial matters often considered could well be done by lesser bodies. It was a pity that we could not do something to approach the great problems of the Empire; and when matters settled down it was hoped that the public health affairs of the country would have attention if we were to retain our physical welfare.

Mr. Hamar Greenwood, M.P., and Mr. Llewelyn Williams, M.P., both responded.

Professor Henry Adams, Past-President then proposed the toast of "Kindred Institutions." He said it had been suggested that when the Institution of Civil Engineers had its new premises they should take under their wing the various kindred institutions which existed.

Mr. H. T. Wakelam, President-elect, responded.

Professor W. R. Smith, M.D., D.L., also replied, and said that not one of the institutions referred to could claim any great antiquity, the oldest of them being only about eighty-one years of age. But when they came to realise the amount of work which had been done by all these public health associations and societies during that time they were struck with the magnitude of the success which had attended their efforts.

Digitized by Google

During that period great attention had been paid to the causation and prevention of disease with marked success. The expectation of life was very much greater, and the whole conditions of the people had been raised and improved. It was gratifying to know that one of the youngest of the societies referred to, the Institute of Sanitary Engineers, had shown that they were desirous of working with the greatest harmony with all other associations.

Alderman Sir D. Burnett, D.L., then proposed the toast of "The Institute of Sanitary Engineers," coupled with the name of the President. He referred to the excellent work done and being done by the Institute and its President, and expressed the belief that there was a great work before the Institute.

The President, in response, said he was glad to be able to announce that the work of the Institute continued to make progress in every department, thanks to their energetic and able Hon. Secretary, Mr. Hoskins, assisted by a progressive and competent Council. The membership in particular had shown a more than usually satisfactory increase during the past year, and now it was nearly 700, with further indications of steady growth. The Institute was never in a better position, both financially and numerically, and they had reached this position from the smallest beginnings. The present position of the Institute proved the necessity for it. They were living in an age of specialists, and although they recognised that the Institution of Civil Engineers was the parent institution, still it was deemed desirable, having regard to the special character of the sanitary engineer's work, to have an Institute of their own. The many and varied societies had done no harm to the parent institution; on the contrary they had it on the authority of the President of the Institution of Civil Engineers that their work in the main had been productive of much good. He (the speaker) claimed that the work of the sanitary engineer had resulted in a great improvement in the health of the nation. As sanitary engineers they were responsible for the sanitation and healthful surroundings of municipalities, and they kept before them the ideal of a municipality in which every citizen who observed the ordinary laws of health would have an equal chance with others of living the whole days of his life. The work of the sanitary engineer had made great progress, but much had yet to be done. Still, they had vastly better conditions than they had in the past, sanitary measures were much better understood, and they were not now familiar with those high death-rates of which one heard so much in days gone by.

Mr. W. J. Dibdin, F.I.C., F.C.S., then proposed the toast of "The Visitors." In the course of his remarks he said that they had heard about the oldest engineering institution that evening, but there was an institution much older than eighty-one years, *i.e.*, the microbe—rightly understood, the greatest friend of man on earth. Mr. Dibdin referred to the help of Mr. Llewelyn Williams, M.P., in getting "Ltd." eliminated from the title of the Institute. With the toast he coupled the name of his Honour Judge Rentoul, K.C., LL.D., who responded.

The concluding toast was "The Ladies," proposed by Mr. A. J. Martin and acknowledged by Mr. H. M. Hodgson.

PROPOSED SUBWAYS, LONDON.—Statutory notices are given of applications which will be made to Parliament in the ensuing session by the Baker-street and Waterloo Railway Company for the construction of a subway at Oxford-circus, between Great Castle-street, on the north side of Oxford-street, and their station at the corner of Argyll-street, with a reconstruction and improvement of the station; and by the London County Council for subways at the lower end of Northumberland-avenue, with communications between the two sides of Victoria-embankment and the eastern platform of Charing Cross Railway-station.

Legal Column.

WORKMEN'S COMPENSATION: WHAT IS A WORKMAN?

THE decision of the Court of Appeal in the case of Walker *v.* The Crystal Palace Football Club, Ltd., is one of considerable importance, since it raises for the first time since the Workmen's Compensation Act, 1906, came into force the question whether the term "workman," is to be interpreted in its ordinary sense, as it would commonly be understood, or whether under the defining section of the Act it is to be given a wider meaning. The applicant in this case was a professional football player, and he had entered into an agreement with the respondents, which was to be in force for a year, to play for the club in all matches when required by the club, not to engage in certain other businesses or sports, to observe all the training and other regulations of the club, and to be subservient to the captain when playing, and his salary was to be 3*l.* 10s. a week. He met with an injury whilst playing in a match and claimed compensation, and the Court held that he was a "workman" within the meaning of the Act. This decision raises a most important question as illustrating the very wide scope of the present Act.

Under the Act of 1897 "workman," though defined in very wide terms, had this important limitation, that it only embraced persons engaged in any employment to which that Act applied, and the employments were specified. That definition ran:—"'Workman' includes every person who is engaged in an employment to which this Act applies, whether by way of manual labour or otherwise, and whether his agreement is one of service or apprenticeship or otherwise, or is expressed or implied, is oral or in writing." Even under that Act the majority of the Court of Appeal in Bagnall *v.* Levenstein (December, 1906) held that a skilled expert engaged under an agreement somewhat similar in terms to the above, in dye and chemical works, and whose duties involved some manual labour, was not a workman.

The terms of the new Act are wider; it extends to "any employment," and "workman" is defined to mean "any person who has entered into or works under a contract of service or apprenticeship with an employer, whether by way of manual labour, clerical work, or otherwise, and whether the contract is expressed or implied, is oral or in writing." Then there are the exceptions. It does not include a person employed otherwise than by manual labour whose remuneration exceeds 250*l.* a year, or a person casually employed otherwise than for the purposes of the employer's trade or business, or a member of a police force, an outworker, or a member of the employer's family dwelling in his house. In the case under consideration the man was not receiving more than 250*l.* a year, therefore the question as to manual labour did not directly arise, although the Master of the Rolls expressed the opinion that playing football was being employed by way of manual labour! The question really amounts to this: Is everyone who serves under a contract of service in any capacity whatever to be deemed a "workman" under the Act and entitled to compensation, and are employers to insure on this basis? In Simpson *v.* Ebbw Vale Steel, Iron, and Coal Company (the *Builder*, February 18, 1905), Lord Collins, then the Master of the Rolls, drew attention to the title of the Act of 1897: "An Act to amend the law with respect to compensation to workmen," which, he said, had some bearing on the question, and he laid it down that the Act must be construed reasonably, and that its main purpose was apparent on the face of it, as, although the definition makes it possible to apply it to a person not engaged in manual labour, still that person must be a workman. Lord Justice Mathew also said that from the title of the Act and all the way through it was apparent that the intention of the Act was the protection of "workmen," using that term in its ordinary and popular sense. The title to the Act of 1906 is the same as that of the Act of 1897, then under discussion, and a decision of the House of Lords as how the definition is reasonably to be interpreted will be awaited with interest. Certainty is of importance, and some limitation must be imparted into the definition, having regard to the subject matter of the legislation in which the definition occurs. Legislation, for example, dealing with building structures, would not be extended to ships merely because the definition given in an Act of "building structures" was capable of being read so as to include such structures as vessels.

POWERS OF MUNICIPAL CORPORATIONS.

A small point interesting to Municipal Corporations has been decided in the case, Mayor, etc., of Scarborough *v.* Cooper. The Corporation desired to dispose of a portion of the ancient corporation land in consideration of the grant of a perpetual yearly rent-charge. The agreement was dated May 11, 1909, but the purchasers declined to complete on the ground that the Corporation could only dispose of the land in fee simple in consideration of lump-sum payments, and the Corporation brought this action for specific performance. The matter is governed by the Municipal Corporations Act, 1882, sect. 108 of which restrains, with certain exceptions, the corporations from leasing their land without the consent of the Treasury—now, under sect. 72 of the Local Government Act, 1888, the Local Government Board, unless authorised by Act of Parliament. Sect. 109, however, gives them powers, with the consent of the Local Government Board, to dispose of any corporate land either by way of absolute sale or by way of exchange, mortgage, lease, or otherwise, and in this case the consent had been obtained. The Court decided in favour of the Corporation, and the case seems absolutely clear, but the doubt seems to have arisen by considering the powers of local authorities under sect. 175 of the Public Health Act, 1875, but that section, as the Court pointed out, is totally different and only contemplates a sale or exchange.

ACQUISITION OF PROPERTY FOR STREET WIDENING.

A curious point seems to have arisen in the case of Wild *v.* Woolwich Borough Council in connexion with the Act 57, Geo. iii., c. xxix, known as Michael Angelo Taylor's Act, which gives powers to local authorities to acquire property for widening streets. The plaintiffs in the action were trustees of certain house property which was subject to certain leases. The defendant Council had in the first instance approached them to sell so much of the property as was required for the street-widening operation, but as they were trustees without power of sale the defendants resorted to the Act and gave notice to treat for the acquisition of the property. The plaintiffs objected to the notice on the ground that it would be improper for them to comply with it, as it would leave a strip of land on their hands which would be useless; they also raised the point that they were only reversioners subject to leases of some duration, and they threatened to take proceedings to restrain the defendants from acting upon the notice. The matter then remained in abeyance, but about ten months later the defendants served a fresh notice to acquire the entire property the subject of the first notice. This the plaintiffs objected to on the ground that it included property wholly unnecessary for the street-widening scheme, and they threatened proceedings. The defendants therefore withdrew the notice, and the Court below and the Court of Appeal have held that it was open for them to do so after

Digitized by Google

repudiation of the notice by the plaintiffs. The plaintiffs could not accept part and repudiate part, they must accept or repudiate the notice as a whole; and it was held that they had repudiated both notices. As to the right to acquire portions of a property under the above Act, see the cases referred to in our Notes, the *Builder*, August 19, 1902; January 6, 1906; and July 17, 1906.

Building Estates and Restrictive Conditions: Land Transfer Acts.

An interesting point to builders was raised last week in the Chancery Division in the case of Willé *v.* St. John and others. Fourteen acres, forming part of the Du Cane Estate, were conveyed by trustees to one of the defendants, the deed containing amongst others a condition that no building should be erected on the lands so conveyed other than private dwelling houses. This defendant shortly afterwards caused himself to be registered as the owner of the land, but no entry was made as to the restrictive conditions. Some two years later this defendant sold the plaintiff a plot, the conveyance binding the plaintiff to observe the conditions contained in the original conveyance of the 14 acres to this defendant, and also others imposed by this defendant, and on the same date this defendant registered under sect. 84 of the Land Transfer Act, 1875, as amended by the schedule to the Land Transfer Act, 1897, the restrictive conditions contained in the original conveyance to him. About a week later the plaintiffs' plot was registered. About two years later this defendant conveyed another plot to some of the other defendants, the conveyance being expressed to be subject to the conditions of the original conveyance to him, but he agreed that as far as he was concerned he should raise no objection to the erection of a church. These defendants erected a church and priest's house, and the plaintiff brought this action against all the defendants and sought a mandatory injunction for the removal of these buildings. To succeed in this claim it would be necessary for the plaintiff to show that there was a general building scheme affecting the whole of the land. In Elliston *v.* Reacher the principles governing such schemes so as to create rights between the several purchasers were considered, and they are set out in the *Builder*, September 12, 1908. Shortly summarised they are (1) both plaintiff and defendant must derive title under a common vendor; (2) previous to selling the vendor must have laid out the estate, or a defined portion thereof, including the land acquired by the plaintiff and defendant, for sale in lots subject to restrictions intended to be imposed on all the lots and which, though varying in details, are intended to be consistent and consistent only with some general scheme of development; (3) these restrictions must be intended by the common vendor to be for the benefit of all the lots intended to be sold whether or not they are intended to be for the benefit of other land retained by him; (4) both plaintiff and defendant, or their predecessors in title, must have purchased from the common vendor on this undetstanding. Applying these principles to the facts of the present case it will be seen that there was no building scheme and that the conditions sought to be enforced were not imposed by a common vendor, but by the previous vendors, the trustees of the Du Cane estate. The defendant who had sold to the plaintiff had formulated no scheme, nor had he imposed any consistent restrictions on his purchasers. The new point to be decided, however, was whether the registration made any difference. Sect. 84 of the Land Transfer Act, 1875, provides for the registration of conditions as annexed to the land, and "the first proprietor and every transferee and every other person deriving title from him shall be deemed to be affected with notice of such conditions." The Court held that registration did not suffice to annex conditions to the land so as to be enforceable by an owner of part of the land against an owner of another part, the section assumed that they had been annexed by some legal method; it gave notice to every subsequent transferee of the conditions imposed under the original conveyance, but in no way affected the legal position created by those conditions, and the action therefore failed.

Gas Companies and Tramway Companies.

The case which arose out of an arbitration between the Bristol Gas Company and the Bristol Tramway Company (noted the *Builder*, July 24) has now been considered in the Court of Appeal. It involved a construction of sect. 32 of the Tramways Act, 1870, which regulates the rights of local authorities or companies to break up roads along which tramways are laid for the purpose of repairing, altering, or removing some portion of their fixed plant. The claim was made by the Gas Company in respect of additional expense incurred by the company by reason of the existence of the tramway in (1) laying down a new service-pipe and connecting the same with a main laid down before the construction of the tramway; (2) repairing, altering, etc., a service-pipe connected with a main laid before the tramway, the service-pipe itself having been laid since the tramway was constructed; (3) repairing, etc., a service-pipe or main laid before the tramway was constructed.

The Court of Appeal affirmed the decision of the Court below, which, in its turn, had affirmed the findings of the Referee appointed to arbitrate under sect. 33 of the Act. The result as regards the above heads of claim was that the expenses of laying down new service-pipes was disallowed, but not those of connecting them with the existing main. The Court below had some doubt on this latter point, but the Court of Appeal held the connexion to be an alteration of the main. Expenses of altering, etc., service-pipes laid since the tramway, were disallowed, but not those incurred in connexion with service-pipes laid before the tramway.

One other point remains to be noticed. It was contended that the work for which the extra expenses could be recovered, under sub-sect. 5 of sect. 32 of the Tramway Act, must be work "whereby the traffic on the tramway will be interrupted" as prescribed by sub-sect. 2. This view had not been accepted in the Court below or before the Referee, but the Court of Appeal placed that interpretation on the section. It made no difference to the judgment because it had been found that as a fact there had been interruption of the traffic, such interruption being that for one day the traffic was worked on a single line, and that at various times the cars had had to be slowed down or stopped to enable the workmen to leave the trenches.

Valuation of Property for Different Purposes.

Judgment has now been given in the case to which we referred in our issue for October 23. Surveyors received instructions to value certain warehouse property as between a willing vendor and a willing buyer for a fee of ten guineas. They valued the property at 2,000*l.*, but, subsequently finding that the valuation had been made to enable the defendants, who had instructed them, to raise 1,250*l.*, by mortgage on the premises, they communicated with the solicitors of the proposed mortgagees to the effect that they did not consider the property suitable as security. The surveyors sued the defendants for their fees, as they explained, as a matter of principle, and the defendants defended the action on the ground that the plaintiffs had stultified the object for which their report was required. The judge of the City of London Court referred the matter to the President of the Surveyors' Institution, who reported that the plaintiffs were entitled to recover, and judgment was accordingly returned for the plaintiffs. Such were the facts as reported in the *Times*, but the grounds upon which the President of the Surveyors' Institution based his report were not published. In the interest of all parties it would seem desirable that where a report is stated to be required for a specific object it should not be used for one quite different, and it is obvious that an open valuation obtained as such would vary from that made as between a willing buyer and a willing seller, and that when the valuation is made for the purposes of mortgage entirely different considerations arise. The advisers of any party are entitled to be treated with openness and candour.

Workmen's Compensation: Operations on Workmen.

The position under the Workmen's Compensation Act of employers and workmen where the question arose as to whether or no incapacity could be cured were the workman to submit to an operation for a long time remained in uncertainty, but four recent decisions have now made the matter tolerably clear. The first of these cases was Warncken *v.* Richard Moreland & Sons, Ltd., which we noted in our issue of December 12 last, in which the Court of Appeal laid it down to be a question of fact whether the incapacity was due to the accident or to the workman's unreasonable refusal to submit to an operation. Next came the case, Shirt *v.* Calico Printers' Association, Ltd. (the *Builder*, April 17), in which the Court of Appeal held that if a workman does so reasonably submit himself to an operation and death ensues under the operation his dependants are not debarred from claiming compensation as resulting from the accident. Then came the case of Tutton *v.* Owners of the Steamship *Majestic* (the *Builder*, April 17), in which the Court of Appeal had to consider what was reasonable conduct, and they then laid it down that the question the arbitrator had to consider was not the balance of medical testimony as to whether the operation might reasonably be performed, but the reasonability of the patient. In that case the man was suffering from Bright's disease, and his own doctor, and also an anæsthetist, had advised him not to undergo the operation, and the Court held that he was reasonably entitled to follow that advice. In that case there was no allegation either that the doctor was incompetent or that the man was malingering, and, as a matter of fact, the other doctors who advised an operation were not in such a good position to judge of the danger, as they had no special acquaintance with the man's idiosyncrasy and previous history. The latest case on this subject is Marshall *v.* Orient Steam Navigation Company, Ltd., decided by the Court of Appeal last week. A man had suffered a burn on his right hand, some septic matter formed in one of the fingers, the ship's doctor suggested an operation which, in his opinion, could have saved the finger, but the man refused to undergo it, and in the end the man's finger had to be amputated in hospital. The County Court judge found that the man's refusal was unreasonable, and thus far the case would seem to fall under the principles laid down in the cases cited above; but here another element was introduced, as another doctor gave evidence that the finger was so implicated that the operation could not have saved it. In this direct contradiction in the medical evidence the judge felt himself placed in a difficulty, but he awarded the man compensation on the ground that the employers had not been able to prove that the incapacity was not the direct result of the accident, and the Court of Appeal affirmed his decision. The law is now therefore clear. Two things have to be proved to the satisfaction of the Court. (1) Did the workman take reasonable steps to cure his incapacity; was his refusal to submit to an operation reasonable? (2) Is the incapacity due to his unreasonable conduct? The burden of proving these two

Digitized by Google

points is laid upon the employer, because when once the workman has proved that he has suffered personal injury by accident arising out of and in the course of his employment it is then for the employer to prove that the chain of causation was broken, and that the incapacity is due to some other cause than the accident. It is the same principle as is applied where the employer sets up the defence of serious and wilful misconduct.

Competition News.

GLAZED BRICKWORK DESIGNS.

A Committee of Glazed Brick Manufacturers are inviting designs for works to be executed in glazed brickwork, and also essays as to the advantages to be derived from the use of this material. Prizes of 100 guineas, 50 guineas, and 25 guineas are offered, and further particulars will be found in our advertisement columns, page iv.

TECHNICAL SCHOOL, KENDAL.

The competitive plans for this building have been on view at the Town Hall, and the General Purposes Committee of the Council have awarded the premiums as follows:—(1) Mr. W. L. Dolman, Windermere; (2) Mr. Malcolm G. Shaw, Kendal; (3) Mr. Stephen Shaw, Kendal.

BOOKS RECEIVED.

THE SCULPTURES OF CHARTRES CATHEDRAL. Text in English and French. By Margaret and Ernest Marriage. Pp. 270. (Cambridge University Press. 12s.)

THE ELEMENTS OF REINFORCED CONCRETE BUILDING. By G. A. T. Middleton, A.R.I.B.A. Pp. 111. (Francis Griffiths. 4s.)

NATURE AND ORNAMENT. Part II. Ornament the finished product of design. By Lewis F. Day. Pp. 274. (B. T. Batsford. 1909. 7s. 6d.)

Correspondence.

MR. NORMAN SHAW'S SOIL-PIPE SYSTEM.

SIR,—Will Mr. Norman Shaw tell us how he manages to get over the sanitary authorities' by-laws, which generally demand that there shall be a trap immediately under the water-closet basin, and there shall not be one at the foot of the soil-pipe, where he puts it; also that soil-pipes shall be at least 4 in. diameter?

What is more important—how is it possible to prevent soil from remaining in the trap at the foot of the soil-pipe (as I have known it to do), there setting up a most foul stink just under the windows of ground floor rooms?

I daresay it is a queston of method of connecting, or, rather, discharging, the soil-pipe over the trap in some exact and careful way. I presume that there is no grating on the gully, or that if there is the soil-pipe discharges under it.

Another point not clear is what Mr. Shaw means by "no disconnecting tank."

W. B. HOPKINS.

Berkhamsted.

THE DISCONNECTING TRAP.

SIR,—The disconnecting trap cannot be claimed as an invention by any person. It is a product of evolution.

I first knew it as an ordinary siphon (dipped pipe) with a 2-in. water seal, and it was placed within a few feet of the sewer (buried like a coffin), and was a source of income to the jobbing builder to bring his rods to clear it, or to dig up the garden or road to get at it, and was gradually moved nearer the building, and improved by adding a cleaning hole on top.

Roger Field's letters to the *Times*, 1874-5, called attention to the then existing unsatisfactory state of the connexion between the internal and external drainage of houses, and from that time till now there has been continuous improvement, but no invention.

It is refreshing to hear that Mr. Norman Shaw's system, which met with such ridicule thirty years since, is practically efficient, as theoretically it is opposed to all sanitary experience.

ROBERT PHILLIPS.

BUILDERS TAKING OUT THEIR OWN QUANTITIES.

SIR,—In your editorial columns of November 13 issue you discuss the above matter, but, with due respect, I regret, hardly, in my view, do it justice. For instance, you argue that when builders compete for the erection of a building that it is not good for "architecture" and tends to a "skimpiness" of construction. Surely this has nothing to do with "competition"? The client and the architect settle this between them; the former requires certain accommodation and has only a certain sum to spend, therefore the architect cannot indulge (as you mention) in the luxuries of the XVIIth or XVIIIth century, so "cuts his coat according to his cloth."

The client cannot understand that the 1½ per cent. for the surveyor is at all necessary, when the architect can send to the competing contractors sets of the drawings and copies of the specification (for which, of course, the architect charges), and you express your astonishment if the builder does not add his charges for taking out the quantities himself; and, again, when the builder calculates the cost of the building himself there is no properly-priced schedule for the variations to be adjusted on at the completion of the work. I ask where the hypothetic saving to the client comes in when the work is done in this slap-dash style?

It seems a hard saying, but the probable explanation is that the architect imagines that he may probably get a lower tender from a builder who wants the job badly than he otherwise would do if the builder had a proper set of quantities from a surveyor, who, if respectable, looks impartially after the builder's interests as well as those of the client.

A SURVEYOR.

*** Our correspondent hardly understands our argument, and we did not "express astonishment" at all; we merely said that if a builder took out the quantities himself it was to be presumed that he added something to his estimate to cover that. But see our further Note on the subject, page 575 (written before we received the above letter).—ED.

THE AREAMETER.

AS A simple and inexpensive form of the planimeter, the instrument placed upon the market by Mr. A. E. Mallandain is of interest to architects and surveyors. The areameter is supplied in sets of two celluloid or zinc curves shaped so that a figure bounded by curved lines, or having a straight line as one boundary, can be divided into constant and equal areas. The smaller curve gives areas of ½ sq. in., and the larger one areas of 1 sq. in., the former insuring greater accuracy, and being recommended for measurements within its radius. Two methods of using the areameter are illustrated by Figs. 1 and 2. Referring to Fig. 1, the procedure is as follows:—Place a pin to serve as an axis at the centre of the plot, apply either of the curves with the notch against the pin, prick two points on the boundary of the plot one at each side of the curve, rotate the curve about the pin so that the edge previously at the first pricked point comes over the second pricked point, prick off a third point at the outside edge of the curve, and repeat the same process until the curve has been rotated through a complete circle. It will then be found that the boundary of the plot has been divided so that lines drawn from the points to the centre would divide the plot into triangles of equal area, or all of equal area except the last triangle of the series. The width of any such smaller triangle can be expressed as a decimal fraction of the width of the triangles on either side of it, as will be explained later.

No lines need be drawn from the pricked points to the centre of the plot, the only thing necessary is to count the number of equal spaces, adding the fractional value of the last space if smaller than the adjoining spaces. The actual area of the plot is the number of spaces multiplied into the constant for the curve used. Thus, if a plot divides up into 50·5 spaces by means of the larger curve, the area is 50·5 sq. in., and if another plot divides into the same number of spaces by aid of the smaller curve, the area is 50·5 × ½ = 25·25 sq. in.

Supposing the plot measured has been drawn to the scale of 8 ft. to 1 in., or 64 sq. ft. to 1 sq. in., the actual measured area must be multiplied by 64 so as to give the area represented by the drawing.

To facilitate the measurement of the last space where less than the width of the curve at the boundary line of the plot, a proportional scale is engraved on the larger of the two instruments, by which the decimal value required can be readily ascertained.

Referring now to Fig. 2, the procedure is to mark off areas with parallel sides by sliding the curve along the base line of the plot to be measured, pricking off points as before, all the areas being of equal size. The actual dimension of the plot is twice the product of the number of spaces and the constant of the curve. Proportional parts are estimated in the manner already described.

We have tested the areameter, and find it simple and efficient, but the printed instructions for use should be revised, as they do not explain the method of procedure quite so clearly as could be desired.

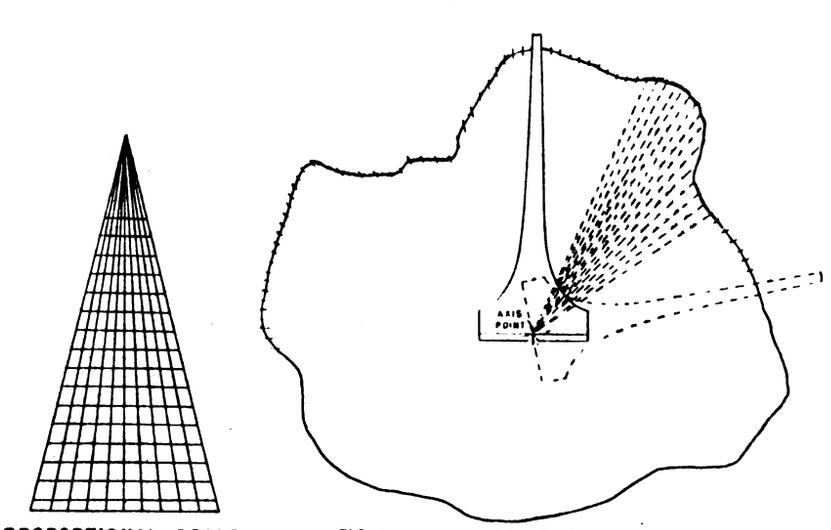


FIG 1. — METHOD OF USING AREAMETER

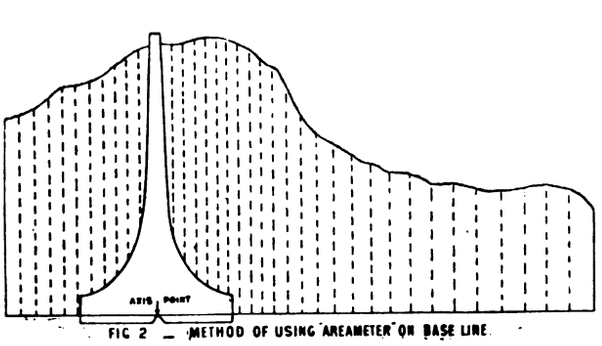


FIG 2 — METHOD OF USING AREAMETER ON BASE LINE

The Areameter.

Digitized by Google

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Repairs on Schedule Prices.—It was recommended that the tenders of the undermentioned contractors for carrying out at schools repairs on the schedule of prices, with percentages added thereto as respectively stated, be accepted; that the contracts be for a period of one year in the first instance, and do remain in force thereafter until determined by three months' previous written notice on either side, such notice to expire at any time:—

Messrs. W. Silk & Son—Group XIV. (Hackney C. and N.)—(*a*) For repairs, measured work, 15 per cent.; (*b*) for sanitary, measured work, 15 per cent.; (*c*) day work, generally, 10 per cent.

Messrs. W. Johnson & Co., Ltd.—Group XXIII. (Deptford), XXIV. (Camberwell, N.), and XXV. (Dulwich and Peckham)—(*a*) For repairs, measured work, 5 per cent.; (*b*) for sanitary, measured work, 5 per cent.; (*c*) for day work, generally, 5 per cent.

THE TRIBUNAL OF APPEAL.

THE BUILDING LINE OF EUSTON-ROAD.

THE Tribunal of Appeal under the London Building Act on Thursday last week continued the hearing of the appeals by the Metropolitan Railway Company and several freeholders against the certificate of the Superintending Architect of Metropolitan Buildings defining the general line of buildings on the northern side of Euston-road, between Hampstead-road and Osnaburgh-street.

Mr. Avory, K.C., opened the case for the London County Council. He said there were substantially two questions for the Tribunal to deal with. The first was, what was the true effect of the judgment of the Court of Appeal in the case of the Metropolitan Railway upon the facts in the present case? and the second question was, what was the true effect of what was done by the Metropolitan Board of Works and Mr. Vulliamy, the Superintending Architect, in respect of this portion of the Euston-road, in the year 1867? The Tribunal was not sitting to determine what was the most expedient line to which buildings should be allowed to be erected, or which line would do the least injury to owners of property, nor which line would least disturb existing contracts that had been made either under lease or for purchase of any of the property. The only question the Tribunal had to decide was what was at the moment the general building line. They had nothing whatever to do with the effect which their determination might have upon existing buildings; still less had they anything to do with the opinion of the St. Pancras Borough Council as to where the line should be defined. Proceeding to deal with the facts of the case, counsel said that the history of the road commenced with a statute of George II., which came into operation in 1756, under which this new road, as it was then called, was made from Edgware-road, joining the Great North-road at Islington. That original statute provided that no buildings in the new road should be erected within 50 ft. of the roadway, and it went on to provide that any new building so erected should be deemed to be a common nuisance. That Act remained in force until it was repealed and re-enacted in the year 1808. The Act of George IV. which came into force in 1826 specifically enacted that it should be unlawful to erect buildings within 50 ft. from the side of the road. It was important to remember that each one of the Acts to which he had referred contained words limiting it to the erection of new buildings upon new foundations. That probably explained why the Adam and Eve public-house continued to flourish at the corner of Hampstead-road so long, because it was more than probable that it was there at the time the first of the statutes referring to the road was passed. That condition of things continued until the year 1862, when the Metropolis Management Act of that year was passed. By sect. 75 of that Act the provisions of the Act of George IV. were repealed, and there was substituted therefor the familiar provision that no house should be erected beyond the general line of building without the consent of the Metropolitan Board of Works. He therefore contended that any building which had been erected upon a foundation which did not exist in the road in 1750 was unlawfully there, and as far as he could make out by the evidence in the case the Adam and Eve public-house was the only one which it could be suggested had an existing foundation in that year. It followed, therefore, that all the other buildings were on new foundations. That being the law up to 1862, the general line of buildings in this part of the Euston-road must have been 50 ft. distant from the road. If there were any buildings there in 1862 within 50 ft. of the roadway, then they were a common nuisance, and he submitted that a common nuisance could not constitute or go to make up a general line of buildings. After 1862 the position was that no building could be erected beyond that line, which was 50 ft. from the roadway, without the consent of the Metropolitan Board of Works. The Court of Appeal had adopted the suggestion which he (counsel) had more than once put before the Tribunal as to the consents given by the Metropolitan Board of Works and the London County Council. He had contended that the consent to a building being brought beyond the general line of building could not alter the general line of building. The Court of Appeal had now decided very clearly that whether the consent was given under the Act of 1862 or subsequently under the Act of 1894, no building which had been thus consented to could be taken into account by the Tribunal as a building going to make up the general line of buildings in the street—such buildings must be excluded from their consideration and treated as non-existent. He would show what consents had been granted by the Metropolitan Board of Works and the London County Council, and in other cases he would show where the applications had been made and the consent refused upon the basis of the general building line in Euston-road being that which was now defined by the Superintending Architect.

The Chairman: If we are to presume that everything built in front of a line 50 ft. back as having been unlawful, I don't know what we have got to do. It seems to me we have not got to determine the general line of building in this street—we have only got to say that the general line of building was fixed by previous Acts, and therefore there is nothing for us to do.

Mr. Avory said he should quite agree to that subject to the point that there were no buildings which could form any general building line in the Euston-road at all. That duty was thrown upon the Superintending Architect of the London County Council. Proceeding to deal with the point as to the true effect of what was done by the Metropolitan Board of Works and Mr. Vulliamy in the year 1867, counsel said he had not heard Mr. Russell or anybody else at present say that Mr. Vulliamy was purporting to define a general line of buildings in this portion of Euston-road in 1867. He did not know whether counsel for the appellants intended to contend that what Mr. Vulliamy did amounted to a definition of a general building line within the meaning of the Act.

Mr. Russell said that was certainly one of his contentions.

Mr. Avory said his submission was that there was nothing in what took place at that time that conferred any right upon anybody to build up to the line suggested by Mr. Vulliamy. He moreover contended that it certainly did not amount to a definition of the building line as then existing. The only thing which could be suggested to amount to a definition of the general line of building was Mr. Vulliamy's report dated May 9, 1867, and he contended that there was nothing in that document which would bear out such an assumption. All Mr. Vulliamy did in that report was to recommend that the Board should give their consent to buildings being brought beyond their line up to a particular line which he recommended. The real history of the matter was to be found in the report of the case of Baumann and the St. Pancras Vestry. In 1866 Mr. Baumann was summoned by the District Surveyor of St. Pancras as the owner of 316, Euston-road, for erecting a building beyond the general line of buildings in the street. A conviction was obtained before the police magistrate, which conviction was upheld on appeal by Chief Justice Cockburn. Mr. Avory then went at length into the case, and said the history of the proceedings clearly demonstrated that in 1867 the general line of buildings in the Euston-road was the line of the front of the old buildings as they originally existed, and that was determined by Mr. Vulliamy for the purpose of that case before the magistrate as being the then existing general line of buildings in that road.

The Chairman: If the line is determined by that, there is nothing left for us to do; we are not here to define the line. As far as I can see from this report of Mr. Vulliamy, it is a mere suggestion as to a very proper building line, but not exactly settling a line of building.

Mr. Avory replied that if Mr. Vulliamy's report did not amount to a determination of the general line of buildings, there was nothing subsequent which could do it.

Mr. Chalmers, an assistant in the Architect's Department of the London County Council, spoke to having made a survey of the houses on the north side of Euston-road, between Hampstead-road and Osnaburgh-street, and said that it was from his survey that the Superintending Architect had made his plan in the case.

The proceedings were again adjourned.

The Tribunal continued the hearing of the case on Friday, when Mr. Chalmers was cross-examined at considerable length regarding the accuracy of the plan which he had prepared.

Mr. Bartley Dennis put it to the witness that, according to Mr. Vulliamy's plan, many of the forecourts were covered with one-story buildings right up to the houses, and that in all those cases it was one continuous building, with no frontage showing between the two; but witness refused to accept this. He maintained that he had made a proper survey for the purpose of preparing his plan, but he admitted that he did not go over all the houses.

Considerable discussion took place between the parties as to whether certain of the buildings in the road were three or four stories high, and the Chairman said that as some importance was attached to the point the Tribunal would like something accurate which they could put before a higher court in the event of an appeal against their decision.

Eventually it was agreed that Mr. Chalmers, Mr. Eason, and Mr. Garbutt, as representing the various interests, should go to the premises and make an inspection and prepare a plan, to be agreed upon, showing the number of stories of each building or part of building from Osnaburgh-street to Hampstead-road.

Mr. W. N. Blair, District Surveyor to the St. Pancras Borough Council, identified a letter dated November 27, 1866, from Mr. Scott, who was then Surveyor to the Vestry, to Mr. Vulliamy, in respect to an application by Mr. Baumann relating to 316, Euston-road, asking for his decision of the line of frontage in Euston-road from Hampstead-road to Ossulton-street.

Mr. Avory said he put the letter in to show that the line which Mr. Vulliamy defined in response to the request it contained was the line between Hampstead-road and Osnaburgh-street—Ossulton-street being obviously a mistake in the letter. His suggestion was that the original line of buildings was the general line.

Mr. Alfred Millwood, from the Superintending Architect's Department of the London County Council, said he had caused a most careful inquiry to be made to ascertain whether any written certificate by Mr. Vulliamy in respect to Mr. Baumann's application in 1866 existed, but had failed to find one. He also spoke to having caused inquiries to be made to find out all the "consents" that had been given by the Metropolitan Board of Works, and afterwards by the London County Council in respect of buildings on the north side of Euston-road, between Hampstead-road and Osnaburgh-street. Altogether he found that eighteen applications had been submitted. Some were refused and some granted.

After some argument Mr. Avory was allowed to put in a map of London by Horwood, dated 1819, which he said showed that there were at that time no buildings on the forecourts of the houses at the spot in question, with the exception of the Adam and Eve public-house.

Mr. Russell remarked that he had a map, published by Thompson's in 1804, which showed along the line of the Euston-road buildings which did not exist in the map put in by Mr. Avory. As far as he could see he did not think either of the maps would be of the least use to the Tribunal in arriving at their decision.

Mr. Avory, in summing up the case for the London County Council, said he suggested that the documents that had been put in showing what took place in 1867 were conclusive evidence that at that time the general line of buildings in this part of the Euston-road was the fronts of the old buildings, standing approximately 50 ft. back from the road. Any conversion of those one-story shops, either with consent or without consent, into three or four story buildings could not alter the general line of buildings as it existed in 1867. With reference to the prolongation of the line into Osnaburgh-street and Hampstead-road, if that was open to any objection the Tribunal could cure it by stopping the line at the particular houses through which it was said to run. He would, however, ask the Tribunal to carry the line into the Hampstead-road.

The Chairman said he was afraid Mr. Avory was asking them to go beyond their powers.

Mr. Avory said, of course, if the Tribunal felt any doubt about the matter they would cut off the line at the Euston-road, but he should have thought they would have been within their right in prolonging it as suggested.

Mr. Russell, addressing the Tribunal, contended that Mr. Vulliamy decided the general building line in 1867. Although there had

Digitized by Google

been modifications in the character of the buildings since then, there had been no material alteration with regard to the position of the fronts of the buildings. With respect to Mr. Avory's contention that these buildings were unlawfully where they were because they were built upon new foundations, he submitted there was absolutely no evidence in support of such a contention. He asked the Tribunal not to exclude those buildings from their consideration when settling the general building line.

Mr. Bartley Dennis, having addressed the Court,

The Chairman said the Tribunal would have to consider very carefully its decision. They would announce it to the parties without drawing it up definitely, which would give those interested an opportunity to attend before them so as to make an application regarding the costs.

COURT OF COMMON COUNCIL.

THE usual fortnightly meeting of the Corporation was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Widening of Fleet-street.—The Improvements and Finance Committee, reporting on the proposal to complete the widening of Fleet-street, recommended that the offer of the London County Council to contribute a sum not exceeding 200,000*l.*, based on the Council's estimate of 400,000*l.*, towards the cost of making Fleet-street 60 ft. wide in front of Nos. 13, 14, 15, 16, 21, 22, 47, 49, 50, 52, 54, 55, 55A, 57, 58, 60, 61, 62, 68, 70, 72, 73, 74, 75, 77, 78, 80, and 81, be accepted, subject to the Corporation reserving the right to apply for a further contribution in the event of the Council's estimate of 400,000*l.* being exceeded (Corporation's estimate, 436,238*l.*). — Mr. Brinsley-Harper opposed the report, and moved that it be referred back to the Committee. The London County Council, he said, had agreed to contribute half the cost, but now limited their offer to 200,000*l.* The estimate of 400,000*l.* was unduly low, and it was not improbable that the cost would be 500,000*l.*, with the result that the Corporation would be involved in an additional expenditure of 100,000*l.*—Mr. Lile, in supporting the Committee, said that while it was true that an understanding was come to with the Council some years ago as to the payment of half the cost of the work, that was applied when the occasion arose by the falling-in of leases. Unfortunately that policy of waiting had increased the cost by thousands of pounds. If the work was not carried out now, it would cost a great deal more in the future, and he urged the Court to accept the Council's terms. —Mr. Bower also supported the Committee's recommendation, and said that if the scheme were shelved for another two years it would add 10 or 15 per cent. to the cost.—Mr. W. H. Key stated that the original agreement with the County Council did not include trade compensation.—On a show of hands the amendment was lost.—Mr. Deputy Wallace then moved a further amendment to the effect that the matter should be referred back, with an instruction to the Committee that the estimated cost should not exceed 400,000*l.*—Mr. Davies, in seconding, argued that the improvement was a metropolitan one. He had gone into the figures, and had found that under the proposed agreement the Corporation would pay 261,000*l.* and the Council only 175,000*l.*—The amendment was lost, and the report of the Committee adopted.

Bishopsgate-street.—The Improvements and Finance Committee submitted an arrangement for acquiring the freehold interest in the premises, No. 121, Bishopsgate-street Without, for the sum of 2,438*l.*, for widening purposes. They also recommended that notices be served to acquire the ground needed to widen the public way in front of the building between Nos. 123 and 126, Bishopsgate-street Within, and No. 126, Bishopsgate-street Within, and No. 61, Cornhill; the adoption of an arrangement for effecting an improvement in front of No. 61 to No. 64, Cornhill, on the principle of give and take; and that a copy of the plan of the proposed improvement be forwarded to the London County Council, and they be asked to contribute half the net cost of carrying out the same.—The Court approved.

Leadenhall-street.—Mr. John Lulham Pound moved that it be an instruction to the Improvements and Finance Committee to report fully to this Court as soon as possible as to the desirability or otherwise of widening Leadenhall-street at the eastern end, a portion of the roadway there being only 17 ft. wide.—The motion was adopted.

Proposed Additions to the Guildhall.—Mr. Hayward Pitman presented a report from the City Lands Committee on the proposal to expend a sum of 3,800*l.* on the erection of an addition of three stories over the library corridor on the east side of the porch, together with the opening up and clearing of the crypt (to render it suitable for use as an adjunct to the museum), and the utilisation of certain vaults under Guildhall as strong-rooms. Mr. Pitman said he hoped the matter would not be reopened, as it had already been fully discussed. He had received letters approving the scheme from the Society for the Protection of Ancient Buildings, and the Royal Institute of British Architects.—After some discussion the report was adopted.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERTILLERY.—Swimming-bath, etc.: Messrs. Powell's Tillery Workmen's Institute, Abertillery.

Aylburton.—School; Mr. R. S. Phillips, architect, The Cross, Gloucester.

Barking.—The Urban District Council has passed the following plans:—Two houses, Eastbury-avenue, for Mr. J. Graffy; three shops, Ripple-road, for Mr. G. A. Smith.

Barnsley.—School; Messrs. Union & Co., builders, Ecclesfield, Sheffield.

Belmont (Surrey).—New church of St. John the Baptist (6,000*l.*); Rev. W. A. Cunningham.

Blyth.—Rink; Manager, Blyth Skating Rink Company.

Bristol.—Additions to Castle school; Messrs. Ridd & Sons, builders, Bristol.

Bromley (Kent).—Secondary school (10,000*l.*); Messrs. Cook & Son, builders, Crawley.

Burbage.—Children's home; the Guardians, Hinckley, Leicester.

Cheadle.—School; Mr. H. Hutchings, architect, Shire Hall, Stafford.

Cowie.—Rink; Mr. J. Burnett, architect, Stonehaven.

Crook.—School; Mr. T. Rushworth, architect, Shire Hall, Durham.

Dover.—Skating-rink; Mr. H. Dan, architect, Faversham.

Drumoak.—Library; Messrs. Walker & Duncan, architects, Golden-square, Aberdeen.

Dundee. — Offices; Northern Agriculture Company, Ltd., Dundee.

Enniskillen.—Thirteen houses; Surveyor, Rural District Council.

Essington.—School; Mr. H. Hutchings, architect, Shire Hall, Stafford.

Folkestone.—Rink; Mr. H. Dan, architect, Faversham.

Glasgow.—Rink; Mr. W. W. Morton, architect, Rutherglen.

Gringley-on-the-Hill.—Restoration of church (2,000*l.*); Mr. Curry, architect, Market-place, Derby.

Hanwell.—Alterations and additions to Council's offices (1,750*l.*); Messrs. H. F. Green & Co., builders, 217A, Upper Thames-street, E.C.

Keith.—Hall, Chapel-street; Mr. W. F. Stewart, architect, Fife-Keith.

Langdale (Cleveland).—Workman's institute, for Messrs. Pease & Partners, Langdale.

Leatherhead.—School: Messrs. Jarvis & Richards, architects, 10, Queen Ann's-gate, S.W.

Litherland. — Church hall; Vicar, St. Andrew's Parish Church.

Lower Gornal.—Mission church; Mr. A. Ramsell, architect, Sedgley.

Maidstone.—Additions to Town Hall; Messrs. R. Corben & Co., builders, Maidstone.

Manchester.—Moss Side Mills, for Messrs. Fry, Binns, & Co., Manchester.

Middlesex.—Sanatorium (3,000*l.*): Colonel Gerard Clark, 4, Sussex-gardens, Hyde Park, W.

North Ormesby.—Extensions to hospital; the Guardians, North Ormesby.

Orsett. — Workhouse buildings (5,000*l.*); Messrs. Brown & Co., builders, Grays.

Penmaenmawr.—Club-house; Penmaenmawr Golf Club.

Ponthenry.—School; Mr. V. Morgan, architect, Carmarthen.

Stoke-upon-Trent.—The Town Council has passed a plan, lodged by Mr. W. Ball, for four houses in Oak Hill-avenue.

Taunton.—Domestic centre; Mr. C. Reilley, architect, County Offices, Aylesbury.

Tything (Worcester). — Garage; Messrs. Parkins & Co., City Garage, Worcester.

Wallsend.—Additions to hospital: Mr. J. F. Davidson, architect, Station-road, Wallsend.

Warmley.—Additions to St. Barnabas Church; Mr. H. Hirst, architect, Broad-street, Bristol.

Worcester.—Banking premises; Manager, London, City, and Midland Bank, 3, Threadneedle-street, E.C.

Worksop.—One hundred villas, Garden City; Secretary, Worksop Co-operative Society.

Washford.—Mission church; Rev. G. Weigell, Old Cleeve, Somerset.

Watford (Herts).—The Urban District Council has passed the following plans:—Six cottages, Prince's-avenue, for Messrs. F. C. & A. E. Keen; seven houses, Hagden-lane, for Mr. T. Rolfe; pair of villas, Leavesden-road, for Mr. E. Howard; three pairs of villas, Leavesden-road, for Mr. H. Everitt; sixteen cottages, Sandringham-road, for Mr. J. Bonham; two semi-detached houses, Oxhey-avenue, for Mr. W. A. Jones.

Wotton. — Church (1,500*l.*); Gloucester Church Extension Society.

LONDON AND DISTRICT BOROUGH COUNCILS.

Battersea.—The following plans have been passed:—Price's Patent Candle Company, Ltd., workshop at Belmont Works, York-road; Messrs. Mountford & Clapham, additions to Battersea Polytechnic in Lurline-gardens and Battersea Park-road; Mr. W. Nash, restaurant at 34, St. John's-road; Mr. W. J. Renshaw, sixty-six houses in Muncaster-road and Culmstock-road, on the Battersea Rise House Estate.

East Ham.—A central coal-house and general store are to be erected in connexion with the hospital, and various other additions and alterations are to be carried out. It is proposed to pave the highway margins of Barking main road with wood blocks and granite setts, at a total estimated cost of 16,312*l.* The following plans have been passed:—Mr. G. Saxton, nine houses and one shop, Kempton-road; Mr. T. Watson, eleven houses, Hubert-road; Mr. R. L. Curtis, conversion of pupil teachers' centre and education offices into higher elementary school; Mr. W. J. Cottle, ten houses, Mafeking-avenue; Mr. J. Clark, seventeen houses, Bedford-road.

Hammersmith.—Tenders are to be invited for the making-up of the first section of Wormholt-road as a new street.

Kensington.—Mr. Joseph Latter is to make up an extension of Oxford-gardens as a "new street," the contract price being 1,123*l.* Thirty siphon-trapped pan gullies are to be substituted, at a cost of 90*l.*, for gullies in Drayton-gardens, of an obsolete type.

Lewisham.—Tenders are to be invited for paving and forming Levendale-road. Thornwood-road, Manor Park, is also to be formed and paved, at an estimated cost of 724*l.* The following tenders have been accepted for kerbing, etc., roadways:—Chalcroft-road, Messrs. Fry Brothers, 698*l.*; Nyon-street, Messrs. H. Woodham & Sons, 265*l.*; Gaynesford-road, Mr. W. Pearce, 453*l.* Messrs. Apthorpe & Co. are to pave the footpaths in the foregoing streets with artificial stone at 2s. 11½d. per yard super. The following plans have been passed:—Messrs. Greenaway & Newberry, vicarage and parish hall, Clarendon-road; Mr. W. Allam, twenty houses, Ewhurst and Manwood roads; Mr. H. R. Hunter, thirty-six houses, Tannsfield-road; Mr. J. H. Beeley, seven houses, Malyons-terrace; Mr. James Watt, twelve houses and shops, Bromley-road; Mr. T. H. Sawyer, laundry, Huxbear-street.

Poplar.—The Borough Council have passed plans for Messrs. Todd & Newman for additions to the Duke of Wellington beerhouse.

St. Pancras.—The General Purposes Committee have passed plans lodged by the Foundling Hospital authorities to build shops on the site of existing old stables in the Gray's Inn-road, opposite the Royal Free Hospital. The Borough Council are to bear the cost (175*l.*) of paving works in connexion with the improvement.

Southwark.—The whole of the street gas-lamps in the borough are to be fitted with new inverted burners, while double inverted burners are to be substituted for the present compressed gas lights at London Bridge Approach.

West Ham.—The following plans have been passed:—Mr. E. J. Jenner, eight houses, Idmiston-road, Forest Gate; Mr. W. Wyles, four houses, Stirling-road, and two houses, Broadway, Plaistow.

Westminster.—Paving works and alterations to cables, mains, pipes, etc., to cost altogether 1,000*l.*, are to be undertaken in connexion with a widening of the carriageway of Waterloo-place, near Charles-street. The land is to be given free of charge.

POST-OFFICE BUILDING, BLACKROCK, CO. DUBLIN. —A new post-office has been opened at Blackrock. The structure was built at a cost of 5,000*l.* The materials are Irish, the granite coming from the quarries of Messrs. Freeman, Ballyknocken, the facing bricks from Arklow, and the stock bricks throughout from Dolphin's Barn. The building is fireproof, the floors and roof are mainly composed of concrete, reinforced with steel, and the roof covered with "national" asphalt. The architect of the building was Mr. Howard Pentland, B.A., F.R.I., R.H.A., and the builders Messrs. G. W. Scott & Co.

Digitized by Google

General Building News.

KIRKBY MALZEARD CHURCH.

This ancient church, which was badly damaged by fire early in 1908, has been restored. In the work of restoration, as much of the old stone as was possible has been used, but the greater part is new. All the pillars of the nave have been renewed. The new oak roofs have been erected of the same low pitch as that adopted by Sir Arthur Blomfield in the chancel when he restored the church about thirty years ago, and the lowering of the roof of the nave has added to the dignity of the tower. New floors have been laid, that of the chancel being of marble. The bells have been recast by Messrs. Gillett & Johnson, of Croydon, and a new clock has been placed in the tower by Messrs. Potts & Sons, of Leeds. The new organ in the north choir aisle is to be built by Messrs. Brindle & Foster, of Sheffield. Messrs. Barker Brothers, of Hampsthwaite, have been contractors for the greater part of the work; Mr. J. H. Coldbeck, of Ripon, for the woodwork: and Mr. W. E. Dixon for the hot water. Some wood screens have been designed by the architect, Mr. J. Oldrid Scott, for the chancel and tower arch, but these cannot at present be undertaken for want of funds. The work has involved an expenditure of 5,500*l.*

CHURCH IMPROVEMENTS, COPDOCK.

At St. Peter's Church, Copdock, an organ-chamber, vestry, gallery, and Litany desk have been erected. Messrs. Brown & Burgess were the architects for the improvements, Messrs. Cubitt & Gotts the builders, whilst the organ is in the hands of Messrs. Lewis & Co., of Brixton. A new heating apparatus has been installed by Mr. Warner, of Ipswich

CHURCH RESTORATION, TREDUNNOCK, MON.

An effort is being made to raise the funds necessary to carry out a scheme of restoration to the ancient parish church at Tredunnock. It is estimated that a sum of 1.000*l.* will be required. Mr. Arthur Grove, of London, is acting as architect in the matter.

TOWER, APPLEDORE CHURCH.

The Bishop of Exeter opened and consecrated a few days ago the new tower of the parish church and other extensions carried out recently at a cost of about 2,300*l.* The tower, which is provided with a clock, is of Cornborough stone. Internally the church has been renovated. Mr. John J. Smith, of Bideford, was the architect.

ENFIELD GRAMMAR SCHOOL.

Additions have been made to the Enfield Grammar School, at a cost of 7,500*l.* The enlargement includes an assembly hall, five classrooms, a science-room, a library, and a common-room, and was designed by Mr. H. G. Crowthall, Architect to the County Committee.

SCHOOL, MERTHYR.

Mr. Enoch Morrell, J.P., Chairman of the Merthyr Education Authority, opened a new infants' school at Penydarren recently. The new building, which is adjacent to the old premises, has been erected from the designs of Mr. J. Llewellin-Smith, the authority's architect, at a cost of about 5,300*l.*

SCHOOL PLANS, KEIGHLEY.

The Buildings Subcommittee have submitted a recommendation that Messrs. Moore & Crabtree (Keighley) be invited to send in plans for a proposed new mixed school at Highfield. Mr. J. J. Brigg, in moving the adoption of this, explained that the architects mentioned prepared the original plans for this school fifteen years ago, but only the infants' department of the school had been proceeded with. Mr. J. W. Smith seconded the motion. Alderman King moved an amendment that competitive plans for the work be invited from Keighley architects. The amendment was lost by the casting vote of the chairman, and the Subcommittee's recommendation was carried on the understanding that Messrs. Moore & Crabtree should be asked what their charge would be in case their plans were rejected.

GIRLS' SCHOOL, BARNSLEY.

A new high school for girls has been erected at Barnsley, at a cost of about 25,000*l.*, on the Huddersfield-road. The school has been erected from the plans of Messrs. Buckland & Farmer, of Birmingham, chosen among fifty-eight designs in open competition. The concentration of the sixteen classrooms adjacent to the assembly hall on the ground floor is perhaps the most conspicuous feature of the design. The main entrance is by a wide range of steps, and on either side of the entrance hall are governor's and head mistress's rooms, and across the corridor is the assembly hall, 70 ft. by 35 ft., with the classrooms on either side. On the lower ground floor the gymnasium is below the assembly hall, and on the right are rooms devoted to domestic science, cookery, for dining the scholars, and caretaker's quarters; and on the other side of the block are the cloakrooms, sick-room, music-room, etc. The laboratories are placed on the upper floor. There is a kindergarten section on the lower floor, and entrances on either side of the block. The lighting is by electricity. The building is of brick with stone dressings.

COUNCIL SCHOOLS, ASFORDBY.

A new Council school has been erected at Asfordby Hill. Mr. E. Shelbourn, of Melton Mowbray, was the architect, and the contractors were Messrs. W. Corah & Sons, of Loughborough. The school has two entrances, one for the boys and one for the girls and infants. On either sides of the entrance halls are cloakrooms, which lead into a central hall 50 ft. by 26 ft. Surrounding the central hall are three classrooms, infant-room with a folding partition between, and on the north wing is a general classroom, while on the north side provision is made for further extensions.

COUNCIL SCHOOL, BIRKENHEAD.

The Birkenhead Education Committee are building a new school in Brassey-street. The approximate cost of the building will be 18,000*l.*, and it is being erected to the plans prepared by Mr. T. T. Rees, Architect to the Education Committee.

COUNCIL SCHOOL, APPLEDORE.

New Council elementary school buildings at Appledore, erected at a cost of 3,000*l.*, were opened on the 20th inst. The plans were prepared by Mr. Morris, the Devon County Education Authority's Architect, and Messrs. Cole, of Plymouth, have been responsible for the building, which will accommodate 270 scholars.

TECHNICAL INSTITUTE, CORK.

Work has commenced in the erection of the new Crawford Municipal Technical Institute, Fitton-street. The architect is Mr. Hill. The cost of the building will be about 16,000*l.* Mr. Samuel Hill is the contractor. The institute will be 260 ft. long and 300 ft. deep. There will be about twenty-nine departments.

Y.M.C.A. BUILDINGS, NEWPORT, MON.

Lord Tredegar recently opened the extended buildings of the Newport Y.M.C.A. in Commercial-street. The premises have been erected on a site adjoining the older buildings. The whole of the new buildings are of fireproof construction. The work has been carried out by the contractor, Mr. Charles Reed, of Malpas-road, under the personal supervision of the architect, Mr. Charles E. Compton, of the firm of Habershon, Fawckner, & Co., Newport, and at Cardiff. Mr. Eynon acted as clerk of works. The total outlay amounted to nearly 5,000*l.*

NEW CATTLE MART FOR EDINBURGH.

At the Edinburgh Dean of Guild Court on the 18th inst. plans were passed for a cattle mart at Gorgie, for Messrs. Oliver & Son, Ltd. The building, which will be in one block, will be of brick, and will be roofed in in four spans. Roughly, it will cost about 12,000*l.* Messrs. Cooper & Taylor, Edinburgh, are the architects.

ALMSHOUSES, BURY ST. EDMUND'S.

On the site of the former College Gate Works, Bury St. Edmund's, a block of twenty almshouses have lately been erected on three sides of a quadrangle, the other side being open to College-lane. There are twelve bungalow houses, and eight in a two-story block. Messrs. Mason & Son, of Haverhill, were the general contractors. The wrought-iron gates and railings were made by Messrs. F. Clubb & Son, of Sudbury, who also supplied, altered, and fixed the old wrought-ironwork used for the balcony. Mr. A. Ainsworth Hunt, of Bury St. Edmund's, was the architect.

ROLLER SKATING-RINK, ELGIN.

A roller skating-rink has been opened in this town. The work of erection has been carried out by Messrs. Davidson & Hay, Elgin (masons); Messrs. D. Macandrew & Co., Aberdeen (carpenters); Mr. James Ross, Elgin (plumber); and Messrs. Kintrea & Son, Elgin (painters); while Mr. Pratt, architect, was responsible for the plans.

RESIDENCE, NORWICH.

A residence, built entirely of hollow concrete blocks, has been erected on a site adjoining Heartsease-lane, facing Mousehold. The blocks were made with a machine supplied by the Concrete Machinery Company, Ltd., of Liverpool. The house is covered in by "Ebonoid" flexible roofing, laid as a flat, coated with gravel. Mr. E. Haydon, builder, of Norwich, carried out the work from designs and under the supervision of Mr. Albert C. Havers, architect, of Norwich.

A YEAR'S BUILDING IN PAISLEY.

At a recent sitting of Paisley Dean of Guild Court, Dean of Guild M'Callum submitted the statement for the past year. There had been seventy-four cases brought forward for disposal, as compared with fifty-eight the previous year; while the valuation was estimated at 90,260*l.*, as compared with 85,630*l.* The classification of the passed property showed fourteen four-story tenements, five three-story tenements, fourteen villas and cottages, halls, and public buildings, the remainder being made up with alterations to property and additions to public works. Permits were granted in twenty-seven minor cases by the Master of Works, as compared with thirty-eight the previous year.

GLASGOW SUBURBAN BUILDING.

At a meeting of the Buildings Committee for the First or Upper District of the county of Renfrew it was intimated that plans had been lodged for the erection of the following buildings:—Double villa at the corner of Calderwood-road and Kilmarnock-road, Newlands, for Messrs. Train & Taylor, Dalmarnock Bridge, Rutherglen; double villa in Southbrae-drive, Jordanhill, for James Watson, 494, Crow-road, Partick; villa in Busby-road, Giffnock, for John Whitewright, 15, Carolside-gardens, Clarkston; two-story tenement in Beith-road, Elderslie, for William Storrier, Gleniffer View, Elderslie; and two double cottages in Kilmarnock-road, Newton-Mearns, for Messrs. Young & Pollock, 134, Main-street, Barrhead.

DR. BARNARDO'S HOMES.

The Council of Dr. Barnardo's Homes have the option of purchasing within three years for 6,000*l.* an estate at Woodford Bridge, Essex, known as Gwynne House, and consisting of a fine old building with extensive offices and 39 acres of land, which they propose to acquire with a view to developing it into a boys' garden city. The buildings erected on the estate can be partly adapted, but others must be built. The estate has been surveyed by Mr. William A. Pite, and by Mr. Charles T. Walrond, and the former has embodied a scheme for a garden city in plans and elevations. It is not intended that the houses in the garden city should be uniform in appearance or style, or planted in rows; each building will be self-contained and separate from its neighbour. Provision will be made for a church and for an isolation hospital, and there will be a swimming-bath near the bottom of the estate. The architect's plan shows twenty-eight houses with thirty beds each, providing for a community of 840 boys when all the beds are occupied. The cost per house works out at 1,800*l.*, including furniture. It is hoped, therefore, to build them at the cost of 60*l.* per bed. Altogether, however, at least 8,000*l.* will be required to free the estate and develop it to the point when the first house may be begun.

Sanitary and Engineering News.

WIDENING OF ELY BRIDGE, CARDIFF.

Mr. H. R. Hooper, M.Inst.C.E., Local Government Board Inspector, held an inquiry at the Cardiff City Hall a few days ago regarding the joint application of the Glamorgan County Council and the Cardiff Corporation for loans to widen and rebuild the Ely Bridge over the River Ely. Mr. J. L. Wheatley explained that the total loan required was 7,250*l.*, of which equal shares would fall on both authorities. The bridge is now 20 ft. wide, and it is proposed to make it 50 ft. There was no opposition.

WATER SUPPLY, HASTINGS.

The Hastings Corporation, on the 19th inst., decided to promote a Bill in Parliament to enable it to borrow 130,000*l.* for an increased water supply. It is also proposed to effect improvements in the borough.

DRAINAGE SCHEME, LITTLE HEATH, HERTS.

An inquiry was held recently by Mr. H. A. Reed, an Inspector of the Local Government Board, into an application by the Hatfield Rural District Council for sanction to borrow 7,000*l.* for the purpose of sewerage and sewage disposal works for Little Heath, on a site proposed to be purchased in Swanley Bar-lane. Mr. Baldwin Latham, who is acting as consulting engineer to the Council, explained the technical details of the proposed scheme.

PROPOSED NEW WATER SUPPLY, ABERDEEN.

The Corporation of Aberdeen intend to apply to Parliament in the ensuing session for power to take a water supply from the River Avon, Banffshire, by means of forming an impounding reservoir on the river at that point. It is proposed to convey the water by

Digitized by Google

pipes through the parishes of Kirkmichael, in Banffshire, and Strathdon, and other parishes, in Aberdeenshire, to a reservoir at Wardhead, about three miles west of the city. From Wardhead the water would be distributed to the existing reservoirs at Pitfodels, Slopefield, and Mannofield. The length of the aqueduct is fifty-two miles, and the supply contemplated is ten million gallons per day. The works, it is expected, will occupy about ten years, and the cost is estimated at 1,066,000*l.*

EXTENSION TO GASWORKS, CARDIFF.

The Cardiff Gas Light and Coke Company, Ltd., have erected a new purifying apparatus. The building which houses the plant is divided into two sections. The purifying-house proper (which contains the apparatus) is 153 ft. long by 28 ft. high to the eaves, and is formed of rolled steel joist stanchions braced together with two lines of lattice girders. The lime and oxide house, where the material is stored and prepared ready for use, is 60 ft. long by 73 ft. wide by 20 ft. high to the eaves, and is built of brickwork, the inner wall forming the end of the purifier-house. The new purifiers are six in number, four being 50 ft. by 30 ft. by 5 ft. deep, and two 40 ft. by 30 ft. by 5 ft. deep. Messrs. John Aird & Sons, Ltd., of London, carried out the foundation and brickwork, and Messrs. Willey & Co., Ltd., of Exeter, were the contractors for the purifying plant, together with the steel and iron work of the building.

WATERWORKS EXTENSION, CAMBORNE.

The Camborne (Cornwall) Water Company, Ltd., are increasing the capacity of their works by the construction of a new reservoir to hold four million gallons. The reservoir is built on the decomposed granite formation, interspersed with ancient mine workings. The long dam forming three of its sides has been built entirely of reinforced concrete, with sheets of expanded steel as a reinforcement. The dam itself is an oblique plane in a series of bays, in which the principle of girder and double cantilever under gradually increasing loads has been predominant. Behind this, and at 10 ft. intervals, counterforts of heavy profile have been built on continuous foundations, forming a complete structure, with a stability of over three times the overturning forces. To bring the whole of the company's works to completion, the system of distribution mains is being reorganised, and includes a complete scheme of water-waste detection by Deacon's meters. The company a few years ago sought the advice of Mr. S. C. Chapman, A.M.Inst.C.E., of Torquay, as to the condition of their undertaking, and have proceeded on the lines of his report. Mr. F. W. S. Stanton, A.M.Inst.C.E., of Chatham and Bristol, was subsequently called in to design and carry out the works.

NEW DOCK, SWANSEA.

The opening of the new King's Dock at Swansea took place on the 23rd inst. The dock has cost about 2,000,000*l.*, and it will accommodate the largest vessels afloat. Its water area is 68 acres, with provision for still further extension. The contract for the work was signed on June 11, 1904, and by its early completion, we learn, the contractors will have earned a bonus approximating 20,000*l.* By its construction an area of nearly 400 acres has been reclaimed from the sea, and valuable sites provided for works which require to be abutting on the docks. The engineers were Messrs. P. Walter Meik & A. O. Schenk, and the contractors Messrs. Topham, Jones, & Railton.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. Coussens & Rothwell, architects and surveyors (Hastings), have removed their offices from 25, Havelock-road to 5, Cambridge-road, Hastings.——Mr. A. E. Richardson, for the past six years chief assistant with Mr. Frank T. Verity, F.R.I.B.A., has entered into partnership with Mr. C. Lovett Gill, A.R.I.B.A., practising as Messrs. Richardson & Gill, 46, Gt. Russell-street, W.C.——The Falkirk Iron Company have removed from 67, Upper Thames-street to Craven House, Kingsway, London, W.C. Telephone: Gerrard 9482.

BUILDING OPERATIONS AT CLYDEBANK.

At Clydebank Dean of Guild Court on the 15th inst. Messrs. Robert M'Alpine & Sons presented plans for the formation of a new street and for the erection of five blocks of houses in Second-avenue, Radnor Park. The Provost asked if the roofs were to be of red slates or tiles, as shown in the plans. Mr. Murray, who represented the petitioners, said he could not say, though he did not think the Court had anything to do with that. The Provost: Red roofs look so much better. Mr. Murray: Well, of course, we did not know the artistic temperament of the Court. In further discussion the Provost desired to know what kind of slates were to be used, but Mr. Murray said that the details were no more settled than the kind of paper that was to be put on the walls. On the Provost pointing out that the plans would not be passed until they had full information as to the kind of buildings to be erected a definite promise was given, and the application was agreed to.—*Glasgow Herald.*

CHURCH BUILDING SOCIETY.

The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels held its usual monthly meeting on the 18th inst. at the Society's House, 7, Dean's-yard, Westminster Abbey, S.W., the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Coventry, St. Margaret, 166*l.*; Goodwick, St. Peter, Pembs, 100*l.*; Laira, St. Mary the Virgin, near Plymouth, 100*l.*; Mitcham, St. Mark, Surrey, 145*l.*; Palmer's Green, St. John, Middlesex, 120*l.*; Whiston, St. Mildred, near Cheadle, Staffs, 35*l.*; and West Bromwich, The Good Shepherd, Staffs, 135*l.*; and towards enlarging or otherwise improving the accommodation in the churches at Grainthorpe, St. Clement, Lincs, 25*l.*; Greenfield, Holy Trinity, Flints, 20*l.*; Haxby, St. Mary, near York, 25*l.*; New Brighton, Emmanuel, Cheshire, 80*l.*, making in all 200*l.*; Slough, St. Mary, Bucks, 100*l.*; Tetford, St. Mary, Lincs, 20*l.*; and Birchington, All Saints, Kent, 25*l.* Grants were also made from the Special Mission Buildings Fund towards building mission churches at Barnt Green, Church of the Ascension, near Alvechurch, Wores, 25*l.*; and Danebridge, St. Paul, near Northwich, Cheshire, 20*l.* The following grants were also paid for works completed:—Hasbury, St. Margaret, Staffs, 150*l.*; Rotherfield Peppard, All Saints, near Henley-on-Thames, 10*l.*; Digby, St. Thomas à Becket, near Lincoln, 15*l.*; Llanfihangel Rhosycorn, St. Michael, Carms, 20*l.*; Dengie, St. James, near Southminster, 10*l.*; Horsington, All Saints, Lincs, 10*l.*; Tetbury, St. Mary Magdalene, Glos, 20*l.*; Kentish Town, St. Benet and All Saints, Middlesex, 100*l.*; York, St. Barnabas, 25*l.*; Stalling Busk, Yorks, 30*l.*; Old Romney, St. Clement, Kent, 25*l.*; Wimbledon Park, St. Luke, Surrey, 100*l.*; Llanbradach, All Saints, near Cardiff, 150*l.*; Great Ness, St. Andrew, near Shrewsbury, 20*l.*; Boxford, St. Andrew, near Newbury, 35*l.*; Lansdowne, Holy Trinity, near Burton-on-Trent, 25*l.*; Mansfield, St. Lawrence, Notts, 100*l.*; South Wimbledon, St. Andrew, Surrey, 150*l.*; Chopwell, St. John, Co. Durham, 50*l.*; Twickenham, All Saints, Middlesex, 25*l.*; Longwell Green, All Saints, near Bristol, 80*l.*; and Minworth, St. George, near Birmingham, 20*l.* In addition to this the sum of 916*l.* was paid towards the repairs of forty-four churches from trust funds held by the Society. The Society likewise accepted the trust of sums of money as repair funds for the churches of St. Paul, Walkden Moor, near Manchester; Holy Trinity, Parkfield, Lancs; and Llansaintffraidglan-Conway.

STREET WORKS, MORECAMBE.

At the Municipal Offices, Morecambe-street, a few days ago, Mr. A. G. Drury, C.E., an inspector of the Local Government Board, held an inquiry into the application of the Town Council to borrow 8,670*l.* for the purpose of widening and improving Marine-road from the Winter Gardens to the West End Pier, including the construction of a new seawall. Mr. Hipwood is the Borough Engineer.

MUNICIPAL AND HEALTH EXHIBITION.

A meeting of municipal officials and others interested in local government was held at the Holborn Restaurant on November 19, for the purpose of considering the advisability of holding an exhibition in May, 1910, representative of the varied work carried out by municipalities. Among those present were:—Professor Henry Adams, President Association of Engineers in Charge; Mr. G. W. Chilvers, member of the Board of Examiners, Institute Sanitary Engineers; Mr. J. E. Edgcombe, Borough Electrical Engineer, Kingston-on-Thames; Mr. Leon Gaster; Mr. Arthur Harrison, Borough Engineer and Surveyor, Southwark; Mr. Alfred E. Penn, Chairman of Association of Engineers in Charge; Mr. E. Van Putten, Borough Engineer and Surveyor, Lewisham; Mr. E. F. Spurrell, Borough Surveyor, Holborn; Mr. H. T. Wakelam, County Engineer, Middlesex. Mr. F. W. Bridges, who convened the meeting, said that the "Municipal Exhibition of 1906" was a decided success, especially considering that it was the first of its kind, and it had established the fact beyond doubt that the Committee was perfectly correct in assuming that the responsibility of the municipal authorities as regards the well-being generally of the community warranted the holding of an exhibition entirely and exclusively devoted to such purposes. At the close of that exhibition the wish was expressed by surveyors, engineers, and others that another might be held in the course of a year or two, as the past exhibition, although most interesting and instructive, was not as representative as they wished it to be (partly because the objects and scope of the exhibition were not fully understood), and it was necessary that they should improve on the title so as to convey to the public what the municipal authorities were doing for them. It would serve the object of bringing to the notice of surveyors and engineers, and the other officials who were responsible for the well-being of the community, all the latest improvements, inventions, methods, and appliances so as to enable them to keep the administration of their respective departments thoroughly effective and up to date.—Capt. Riall Sankey moved:—"That this meeting heartily approved of and pledges its support to the second Municipal and Public Health Exhibition, to be held in London in May, 1910, believing that this will be of material assistance to those who are responsible for the administration of municipal affairs and of immense educational benefit to the community generally."—The motion was seconded by Professor Adams, supported by Mr. Edgcombe, and carried unanimously.—Professor Adams was elected President of the Advisory Council and Capt. Riall Sankey was appointed Vice-President.—Considerable discussion took place as to the title of the exhibition. It was felt that all municipal departments should be represented, and that the title, therefore, should be comprehensive. Eventually it was agreed to call it "The Municipal and Health Exhibition." It was decided that local committees and secretaries should be appointed as speedily as possible, and that the heads of local government authorities should be invited to give their patronage. All the arrangements will be carried out in conjunction with an Executive Committee, meeting in London. The offices of the exhibition are at Balfour House, Finsbury-pavement, London, E.C.

APPOINTMENT OF SANITARY OFFICERS.

The Local Government Board has sanctioned the appointment of T. A. Cartledge and E. C. Freeman as sanitary inspectors in the Metropolitan Borough of Bermondsey in place of J. Jones and H. O. Harris.

MASTER BUILDERS AND THE ISSUE OF QUANTITIES.

There has been a certain amount of trouble in South Africa during recent months on the point as to whether builders should be furnished with the quantities of material required as an assistance towards the tendering for contracts. In at least one instance the builders flatly refused to tender unless quantities were issued, and succeeded in beating down the opposition. On the surface of things it seems a little unreasonable of architects to expect builders to estimate without being given the help which is common in all British contracts. A reference was made to the subject by Mr. M. C. A. Meischke, of Johannesburg, President of the National Federation of Building Trade Employers of South Africa, while on a visit to Durban a week or two ago. After referring to the importance of organisation and combination, he strongly advised the Natal builders not to tender for work unless quantities were issued. He said that in the Transvaal quantities were supplied, and it was only fair and reasonable that they should be supplied. There were still some architects who sought to get prices without issuing quantities, but the Transvaal Association decided not to tender unless the quantities were supplied. If in Natal contractors were determined on the point he predicted success. It was his intention to visit East London and Bloemfontein in the interests of the Federation for the purpose of "livening things" up. He mentioned that it had been resolved to form an Association in Krugersdorp, and said the probabilities were that similar Associations would shortly be inaugurated in Germiston and Boksburg.—*South Africa.*

WHITGIFT HOSPITAL SCHEME.

A special meeting of the Croydon Town Council was held on the 22nd inst. to determine upon the expediency of promoting in Parliament next session a Bill to empower the Corporation to widen the easterly side of North-end, which would involve the demolition of the Hospital of Holy Trinity, founded by Archbishop Whitgift 300 years ago. Letters from the Woolwich Antiquarian Society, the Surrey Archæological Society, and the clergy of the rural deanery of Lambeth were read protesting against the destruction of this ancient landmark. The Council had previously decided, before proceeding with the Bill, to take the opinion of the burgesses on the scheme, which is estimated to cost 130,000*l.* Objection was taken to the scheme on financial grounds mostly. Twenty-five voted for the scheme and twenty-nine against it. A two-thirds majority of the whole Council was needed to carry the resolution.

Digitized by Google

Capital and Labour.

CONDITION OF EMPLOYMENT IN THE BUILDING TRADES.

Employment in October was slack. It showed some seasonal decline, but was rather better than a year ago. The percentage of trade union carpenters and joiners unemployed at the end of October was 11·2, as compared with 10·8 a month ago and 14·3 a year ago; and for plumbers, at the same dates, the percentages were 12·8, 13·3, and 12·8 respectively. These percentages were always exceeded in the Northern Counties and Scotland. Returns received from bricklayers', masons', plasterers', painters', and labourers' unions show a decline compared with a month ago. Slaters and tilers in Scotland and the North of England reported an improvement, and were fairly well employed. For London the trade union returns show that 14·2 per cent. of carpenters and joiners were unemployed at the end of October, as compared with 12·3 a month ago and 16·9 a year ago. The corresponding percentages for plumbers were 17·0, 13·2, and 17·0 respectively. Returns received from 701 firms employing 43,652 workpeople at the end of October show that there was a decrease of 5·4 per cent. in the total number employed by them as compared with a month ago, and a decrease of 1·2 per cent. as compared with a year ago. The decrease compared with a month ago was most marked in the London district. Compared with a year ago there were decreases in four districts, and increases in three districts.—*Board of Trade Labour Gazette.*

Law Report.

ACTION BY A BUILDER.

THE hearing was concluded, on the 23rd inst., in the Court of Appeal, before Lords Justices Vaughan Williams, Buckley, and Kennedy, of the case of Gray *v.* the Central London Properties Association, Ltd., upon the appeal of the defendants from a judgment of Mr. Justice Sutton in the King's Bench Division. (The case was reported in last week's issue of the *Builder.*)

The plaintiff, Mr. Charles Gray, a builder, carrying on business at Kensington, brought the action to recover from the defendants 12,500*l.* he alleged to be due from the defendants as an instalment on account of a contract to rebuild certain property in Hanover-square for 38,000*l.* It appeared that the contract was made through a Mr. Gilbert, and that the defendants were to advance the money as the building progressed. Mr. Gilbert became bankrupt, and as he had arranged mortgages on the property with the defendant company it was contended that the company were liable for the first payment of 12,500*l.*, which became due when the buildings reached a certain stage. On the other hand, it was said that the building lease and other securities were now the property of Mr. Gilbert's trustee in bankruptcy, and that the plaintiff was really only Mr. Gilbert's agent. Mr. Justice Sutton held that the plaintiff was entitled to the 12,500*l.*, for which sum he gave judgment, with interest at 5 per cent., and costs. Hence the present appeal of the defendants, which was expedited by an order of their lordships.

At the conclusion of lengthy arguments by counsel representing the respective parties, their lordships affirmed the decision of Mr. Justice Sutton, and dismissed the appeal with costs.

Mr. Rufus Isaacs, K.C., and Mr. Hastings appeared for the appellants; and Mr. Montague Lush, K.C., and Mr. Disturnal for the respondent.

Patents.

APPLICATIONS PUBLISHED.*

20,577 of 1908.—Jesse Herlin Tromanhauser: Concrete sea walls, docks, breakwaters, and like structures.

22,662 of 1908.—Thomas Edward Lake: A jointing cramp or soldering vice for joining nosepieces to pipes, or one pipe to another.

22,979 of 1909.—Spanners, Ltd., and William George Moore: Spanners and wrenches.

24,860 of 1903.—James Henry Smith: Decorators' adjustable liner for facilitating stencilling work for decorators and painters.

25,482 of 1908.—Henry Worthington Fielding: Apparatus for supplying the material to brickmaking and like machines.

25,635 of 1908.—Charles Percy Warham and Albert Edward Bulmer: Fastenings for window sashes and the like.

26,979 of 1908.—Harold James Arnold and Louis Andrew Benwell: Blind roller fittings.

27,035 of 1908.—Richard Mayer: Steam or hot-air apparatus in combination with a bath.

27,471 of 1908.—John Thomas Simpson: Reinforcing devices for concrete structures.

27,729 of 1908.—Frederick George Bazell and Robert Barnard Verney: Ceiling roses and the like for use in electric circuits.

2,337 of 1909.—Harry Graham Bell: Device for the prevention of rattling in doors and windows.

2,760 of 1909.—Mary Marshall: Ash screen or shield for use in connexion with domestic fireplaces.

5,138 of 1909.—William Oates and Frank Peto Barber: Multiple water-closet systems or installations.

7,413 of 1909.—Francis Edward Ward: Construction of ornamental glazing.

7,762 of 1909.—Samuel Holt Donnelly: Cleansing eye for water-closets and other appliances connected with drains and sewers.

12,051 of 1909.—Antonio Monti: Sliding windows.

12,126 of 1909.—Max Hartung: Manufacture of artificial stone slabs and the like.

13,446 of 1909.—Theodore Hobart Skinner and Oneida Community, Ltd.: Reinforcement for concrete sheathing for columns, beams, and other structures.

13,447 of 1909.—Theodore Hobart Skinner and Oneida Community, Ltd.: Reinforced concrete for building structures.

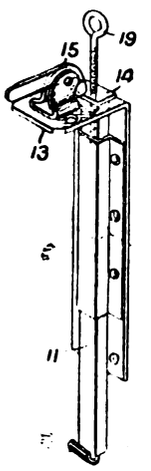
13,448 of 1909.—Theodore Hobart Skinner and Oneida Community, Ltd.: Reinforcement for concrete columns.

18,557 of 1909.—William Nelson Caviller: Combined plumb-bob and chalk-line holder.

5,450 of 1909.—Arthur Smith West and George Frederick Chaplin: Service-pipe and like connexions for water mains.

SELECTED PATENTS.

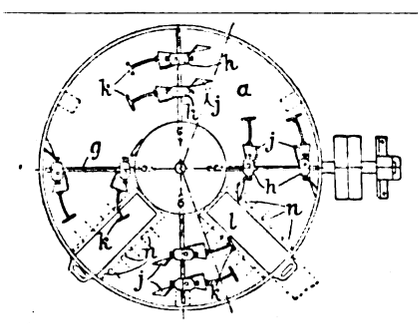
12,428 of 1908.—Edward James Reilly: Windows. This relates to windows in which the sliding sashes are balanced one against the other, and are connected by a chain or cord fixed to the upper sash, passing over a pulley, and attached to the lower sash by means of a sliding connexion. The chain 4 is attached to an eyelet 19 screwed into the slide 11, which



No. 12,428 *of* 1908.

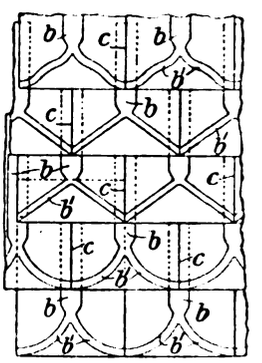
moves in a guide fixed to the side of the sash stile. The upward movement of the slide is limited by a stop-hook on the lower end of the slide, and is held in position by a catch 15, which is pivoted to a bracket fixed on the flange 13 of the guide-pieces, and engages the flanged top 14 of the slide. Stops on the frame limit the upward movement of the sashes.

12,594 of 1908.—Fred Wetherell Turner: Mixing concrete. This relates to a concrete mixer in which over the bottom of a pan *a* are provided plough-shaped stirrers *j*, which turn the materials over, and rakes *k*, which level the surface again. The stirrers and rakes are carried by sleeves *h* adjustable on horizontal arms *g* attached to a vertical shaft. The mixed material is discharged through an opening provided with a slide *l* working in grooves, the sides of the grooves being cut away at intervals as at *n* to allow of the escape of material lodging in the grooves.



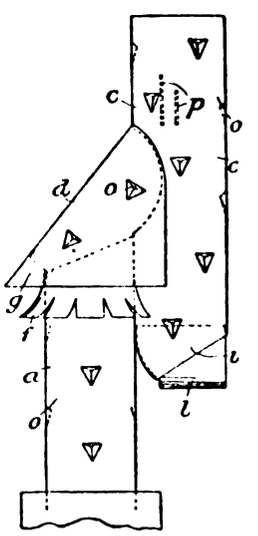
No. 12,594 *of* 1908.

12,702 of 1908.—William James Bourne: Roofing tiles. This relates to roofing tiles which are formed with a recess or well *b* in the middle of their upper surfaces, and with suitably-shaped channels b^1 communicating therewith and extending to or near to the bottom corners of the tile, so that when the tiles are arranged in place water passing through the meeting edges *c* of the tiles falls into the wells *b* in the tiles beneath, and is then conducted through the channels b^1 and wells *b* of successive tiles to the spouting.



No. 12,702 *of* 1908.

13,372 of 1908.—Friedrich Gierke: Chimney-tops. This relates to chimney-tops of the type in which an open-ended additional vertical pipe is arranged so that the smoke is delivered centrally into it from the main pipe, and consists in providing a cover *d* leaving an annular space *g* into which wind is directed by a curved serrated collar *f* provided above the main pipe *a*. The bottom of the additional pipe *c* is curved so as to have an inclined mouth *i* divided by a plate *l* curving in opposite directions at the bottom. Openings *o*, formed by cutting the metal and pressing it inwards beneath the incision, are formed in the walls of the top, and vertical plates *p* are placed within the additional pipe to prevent down-draught from passing to the main pipe.



No. 13,372 *of* 1908.

13,885 of 1908.—Société E. Ferrand et Pradeau: Floors and ceilings. This relates to a reinforced concrete floor, having integral reinforced concrete beams, which is cast about tubular blocks A, having straight undercut sides, and with or without the internal ribs. The blocks may be made of plaster or other

PATENTS.—*Continued on page* 602.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments. xvii.; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

NOVEMBER 30. — **Workington.** — SCHOOL. — The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. For further particulars see advertisement in our issue of October 30.

DECEMBER 1.—**Bangor.**—LAYING-OUT A PARK.—The U.D.C. of Bangor (Co. Down) invite a scheme for the laying-out of a public park, 20 acres in extent, on ground acquired by them within their District. A premium of 50*l.*, to include all expenses, will be paid to the person whose scheme may be selected. Mr. J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.

DECEMBER 1. — **Tralee.** — PROPOSED CARNEGIE LIBRARY AND TECHNICAL SCHOOL.—The U.D.C. propose erecting this building, at a cost not exceeding 4,500*l.*, and invite competitive designs for same, according to "Instructions and Conditions," copies of which may be had by intending competitors on application to the Town Clerk, Tralee. Prizes of 20*l.* and 10*l.* to be awarded to the designs placed first and second by the assessor.

DECEMBER 3. — **Otley.**—SCHOOL.—The Governors of Prince Henry's Grammar School, Otley, have decided to erect new school buildings, and will be glad to hear from architects who are willing to submit designs and estimates. If the number of applications is excessive, it is intended by selection to invite twenty or twenty-five only to compete. A fully qualified non-competing architect, in conjunction with the West Riding Education Committee's Inspector of Secondary Schools, will assist the Governors in adjudicating upon the plans. Applications, stating qualifications and experience, must be received by Mr. Ernest S. Mead, Clerk to the Governors, East View, Otley, before December 3, 1909.

DECEMBER 3.—**Royal Leamington Spa.**—PUMP ROOM EXTENSION.—The Council offer a prize of 10*l.* for the best design for an extension to the cooling room at the Pump Room and Baths. Full particulars may be obtained on application to Mr. Leo. Rawlinson, Town Clerk.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See October 2 and 23; also advertisement in this issue for further particulars.

DECEMBER 19. — **Headingley, Leeds.** — TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2*s.* each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 1. — **Hetton.** — CLUB.—The Committee of the Hetton Working Men's Club invite plans for the erection of a new club. Plans, with estimates, to be sent to Mr. Jas. Widdowfield, Secretary, Hetton Working Men's Club, Pemberton-street, Hetton-le-Hole.

JANUARY 1.—**Larne.**—TECHNICAL SCHOOL.—The Larne Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Victoria-street. A premium of 21*l.* will be paid for the approved design. Further particulars may be obtained from Mr. Thomas Clearkin, Secretary.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2*s.* from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1. — **Oldham.** — PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. F. C. Foote, the Borough Surveyor, on payment of 1*l.* 1*s.* Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

* NO DATE. — **Boston.**—CHURCH.—Designs are invited for a country church to seat 500. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 29. — **Bailieborough.** — COTTAGES.—The R.D.C. invite tenders for the erection of single cottages throughout the district, in accordance with the plan, etc., prepared by Mr. Patrick O'Reilly, C.E., Bruise Hill, Virginia. Tender forms, etc., can be had on application to Mr. Hugh Clarke, Clerk of D.C., Poor Law Office, Bailieborough.

NOVEMBER 29. — **Castleford.** — SHOPWORK. — Shopfitters' work in connexion with new branch premises, situate in Vickers-street, Castleford, for Messrs. the Castleford Co-operative Industrial Society, Ltd. Bills of quantities, etc., may be obtained from Mr. J. Philip Padgett, architect and surveyor, Carlton-chambers, Castleford, on payment of 1*l.* 1*s.* deposit.

NOVEMBER 29.—**Merthyr Tydfil.**—SCHOOL ALTERATIONS. — Tenders are invited for alterations to Penyrheolgerig Infants' School. Applications for particulars to be made to the Education Committee's Architect, Deputy-Surveyor's office, Town Hall, Merthyr Tydfil.

NOVEMBER 29. — **Widnes.** — PAROCHIAL BUILDINGS.—Erection of new parochial buildings, Widnes. The drawings, etc., may be seen, and bill of quantities and form of tender obtained, at office of Mr. Frank S. Biram, architect, George-street, St. Helens.

NOVEMBER 30 — **Baildon.** — GOLF PAVILION.—Removal of wooden golf pavilion at Cobble Hall, Leeds, and its re-erection at Baildon. Specifications and particulars at the Golf House, Baildon. Mr. L. Thorpe, Secretary, Golf House, Baildon.

NOVEMBER 30.—**Bridgwater.**—OFFICES.—Alteration of new offices, Eastover, and erection of corrugated-iron store for the Bridgwater R.D.C. Plans, etc., may be seen at the office of the Council's Engineer and Surveyor, Binford-place.

NOVEMBER 30. — **Cavan.** — RENOVATIONS.—The Joint Committee of Management of Cavan Infirmary invite tenders for renovation of surgeon's residence (including painting, papering, and plastering of hall, rooms, etc., and other repairs). Specification may be inspected at the Infirmary.

NOVEMBER 30. — **Elland.** — HOUSE, SURGERY, ETC. — Erection of a house, surgery, garage, boundary walling, etc., in Victoria-road, Elland, for Dr. Morton. Plans, etc., may be seen, and quantities obtained, at offices of Mr. Ferd. F. Beaumont, architect, Southgate-chambers, Halifax.

NOVEMBER 30 — **Pencoed.**—COTTAGES.—Two cottages, stable, and coach-house, etc., for the Committee of Salem Chapel, Pencoed. Plans, etc., may be seen at the Court, Pencoed.

NOVEMBER 30. — **Pyle.** — HOUSES.—Erection of two houses at Pyle. Plans, etc., may be seen at office of Mr. J. A. James, architect, Port Talbot.

NOVEMBER 30.—**Queenstown.**—ALTERATIONS TO RESIDENCE.—Alterations to a gentleman's residence at Queenstown, in accordance with plans, etc., prepared by Messrs. W. H. Hill & Son, architects, 28, South Mall, Cork.

NOVEMBER 30.—**Stonehaven.**—OFFICES.—Offices for the Stonehaven Auction Company, Ltd., Stonehaven. Plans, etc., may be seen with Mr. George Gregory, jun., architect, David-street, Stonehaven.

DECEMBER 1. — **Gilfach Fargoed.**—SCHOOLS.—The Glamorgan C.C. invite tenders for new Council school for girls at Gilfach Fargoed. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the Bargoed Police-station, and at offices of Glamorgan C.C., Westgate-street, Cardiff.

DECEMBER 1. — **Glyncorwg.** — SCHOOL.—Glamorgan C.C. invite tenders for new mixed department at the Council school at Glyncorwg. Plans, etc., may be seen, and bills of quantities and form of tender obtained, at the Glyncorwg Police-station.

DECEMBER 1. — **Huddersfield.** — HOUSES. — Works (Joiner's work excepted) required to be done in the erection of four dwelling-houses in Longwood-gate. Plans may be seen, and bills of quantities obtained, at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

DECEMBER 1.—**Kingstown.**—HOUSES.—The Kingstown U.D.C. invite tenders:—(1) For the construction of sixteen houses to be built at Paradise-row. The plans, etc., can be inspected at the Surveyor's Office, Town Hall; 1*l.* will be charged for each bill of quantities. (2) The Council invite tenders for the construction of additions to the caretaker's apartments at the Royal Victoria Baths. Plans, etc., can be examined in the Surveyor's Office. (3) The Council invite tenders for the construction of two shelters (Nos. 1 and 3) at the new park. Drawings, etc., can be examined in the Surveyor's Office.

DECEMBER 1. — **Leeds.** — LABOUR EXCHANGE. — The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of Nos. 4, 6, and 8, Meadow-lane, Leeds, for a labour exchange. Drawings, etc., may be seen on application to the Assistant Architect, H.M. Office of Works, Leeds. Forms of tender may be obtained on application at H.M. Office of Works, etc., Storey's-gate, Westminster, S.W.

DECEMBER 1.—**Liverpool.**—LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of premises in Fraser-street, Liverpool, for a labour exchange. Drawings, etc., may be seen on application to the Assistant Architect, H.M. Office of Works, Liverpool. Forms of tender may be obtained on application at H.M. Office of Works, etc., Storey's-gate, Westminster, S.W.

DECEMBER 1. — **Pontardulais.** — OFFICES. — The Glamorgan C.C. invite tenders for new offices, etc., at the Council school at Pontardulais. Specification and form of tender obtained for Work No. 5 at the Pontardulais Police-station.

DECEMBER 1. — **Port Talbot.** — SCHOOL. — The Glamorgan C.C. invite tenders for new boys' school, higher elementary school, and caretaker's house at Port Talbot. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the Port Talbot Police-station.

* DECEMBER 1.—**S. Tottenham.**—ENLARGING SORTING OFFICE.—The Commissioners of H.M. Works invite tenders for enlargement of the S. Tottenham Sorting Office. See advertisement in this issue for further particulars.

DECEMBER 1. — **Swansea.**—LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of No. 232, High-street, Swansea, for a Labour Exchange. Drawings, etc., may be seen on application to the Postmaster, Head Post-office, Swansea. Forms of tender may be obtained on application to the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

DECEMBER 1.—**Warminster.**—ADDITIONS.—For additions to Sandhayes, Corsley, Warminster, for Mr. A. W. Parish. Drawings, etc., at the office of Mr. A. F. Long, architect, 53, Market-place, Warminster.

DECEMBER 4.—**Camphire.**—RESIDENCE.—Building a school teacher's residence at Camphire, Cappoquin, according to plans, etc., which can be seen at the residence of Rev. P. Dunphy, P.P., Cappoquin.

DECEMBER 4.—**Gosforth.**—STRONG ROOM.—Gosforth U.D.C. invite tenders for building strong room at the Council-chambers, High-street, Gosforth. All particulars may be obtained from Mr. George Nelson, A.M.Inst.C.E., Engineer and Surveyor to the Council, Council-chambers, High-street.

DECEMBER 4. — **Newburn.** — COTTAGES. — Newburn U.D.C. invite tenders for the erection of two cottages on Lemington-road, Newburn. Plans, etc., may be seen at the office of the Surveyor, Council Offices, Newburn.

DECEMBER 4. — **Pontycymmor.**—CHURCH.—Erection of new Welsh Church at Pontycymmer, Garw Valley. Plans, etc., may be seen at the offices of the architect, Mr. J. Cook Rees, architect, Neath.

DECEMBER 4.—**Selly Park.**—SCHOOL.—King's Norton and Northfield U.D.C. Education Committee invite tenders for new Council schools at Pershore-road, Selly Park. The schools to accommodate 1,250 scholars, in accordance with plans, etc., prepared by Mr. W. H. Ashford, Educational-chambers, 90, New-street, Birmingham. Names and addresses, together with a deposit fee of 1*l.* 1*s.*, to Mr. John F. Moore, Secretary, Education Offices, King's Norton.

DECEMBER 4.—**Skipton.** — ADDITIONS. — Masons', joiners', plumbers', slaters', and iron works required to be done in the erection of additions to the dye-house at Belle Vue Mills, Skipton, for the English Sewing Cotton Company, Ltd. Plans may be seen, and bills of quantities obtained, on application at offices of Mr. James Hartley, architect, Skipton.

DECEMBER 6.—**Beckenham.**—REPAIRS, ETC.—The Beckenham Education Committee invite tenders for the annual repairs and decorations to the elementary schools in their district. Specifications, etc., obtained on application to Mr. John A. Angell, Surveyor, on the production of a receipt from the Collector for a deposit of 10*s.*

DECEMBER 6. — **Liverpool.** — ALTERATIONS.—The Commissioners of H. M. Works and Public Buildings invite tenders for alterations at the County Court Offices, Liverpool. Drawings, etc., may be seen on application to H.M. Office of Works, Victoria-street, Liverpool. Forms of tender may be obtained at H.M. Office of Works, etc., Storey's-gate, London, S.W.

* DECEMBER 7.—**Bromley.**—FIRE-STATION, ETC.—The Bromley B.C. invite tenders for a new fire-station

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

and a mortuary. See advertisement in this issue for further particulars.

DECEMBER 7.—**Jarrow.**—SCHOOL.—The C.C. of Durham invite sole tenders for the erection of a secondary school at Jarrow, in accordance with plans prepared by Mr. Fred. Rennoldson, architect, 37, King-street, South Shields, at whose office the plans, etc., may be seen. Bills of quantities may be obtained from Mr. J. A. L. Robson, Secretary for Higher Education, Shire Hall, Durham.

✱ DECEMBER 7.—**London.**—ALTERATIONS.—The Commissioners of H.M. Works and Public Buildings invite tenders for alterations and additions to Registry of Seamen, Royal Mint. See advertisement in this issue for further particulars.

DECEMBER 7.—**Margate.**—CONVERSION.—Conversion of existing stores at the King-street Depôt, Margate, into offices for the Inspector of Weights and Measures, in accordance with the plan, etc., prepared by the Borough Surveyor, which can be seen, and all particulars obtained, on application to Mr. E. A. Borg, Borough Surveyor, 13, Grosvenor-place, Margate.

DECEMBER 8.—**Ballymena.**—SCHOOLS.—The erection of proposed Guy's National Schools at Ballymena, Co. Antrim. Plans, etc., may be seen at office of Mr. James A. Hanna, C.E., architect, Ocean-buildings, Belfast, and forms of tender, etc., may be obtained from Messrs. W. H. Stephens & Sons, 13, Donegall-square North, Belfast, on payment of a deposit of 1*l.*

✱ DECEMBER 8.—**London.**—ADDITIONS.—The Metropolitan Asylums Board invite tenders for (1) erection of an enclosure to coach-houses at Eastern Ambulance Station, Homerton, N.E.; (2) additional lavatory accommodation for male staff at North Convalescent Fever Hospital, Winchmore Hill, N. See advertisement in this issue for further particulars.

DECEMBER 10.—**Fenit.**—CUSTOMS BUILDING.—The Board of Public Works, Ireland, invite tenders for erecting and completing a new Customs building at Fenit, Co. Kerry. The plans, etc., can be seen at the District Office of Public Works, Tralee. Forms of tender and bills of quantities will be supplied on deposit of 1*l.*

DECEMBER 10.—**Swinton, etc.**—SCHOOL WORKS.—The West Riding Education Committee invite whole or separate tenders for the following works:—Swinton Bridge Provided School (alterations and additions), Swinton, Kilnhurst, Provided School (alterations and additions. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall Wakefield. A deposit of 1*l.* in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

DECEMBER 11. — **Gowerton.** — ALTERATIONS.—The Standing Joint Committee of the Glamorgan Quarter Sessions and County Council invite tenders for alterations and additions to Gowerton Police-station. Plans can be seen, and copies of specifications, etc., obtained, at Gowerton Police-station, and at offices of the Clerk of the County Council, Glamorgan C.C. Offices, Westgate-street, Cardiff.

✱ DECEMBER 13.—**Battersea.**—ALTERATIONS. The Metropolitan Water Board invite tenders for alterations and additions to existing buildings at their Battersea works. See advertisement in this issue for further particulars.

DECEMBER 13. — **Blackburn.** — POLICE-STATION AND SESSIONS COURT, ETC., BLAKEY MOOR (BASEMENT AND LOWER GROUND FLOOR SECTION). The Corporation of Blackburn invite tenders for the erection of the new Police-station, Sessions Court, etc., on Blakey Moor. Forms of tender, etc., can be obtained from the joint architects, Messrs. Briggs, Wolstenholme, & Thornley, and Messrs. Stones & Stones, Richmond-terrace, Blackburn, on deposit of the sum of 1*l.* 1s. Names to the architects immediately.

✱ DECEMBER 13.—**London.**—BARRACKS.—The Secretary of State for War invites tenders for additional accommodation for non-commissioned officers and men, Wellington Barracks. See advertisement in this issue for further particulars.

DECEMBER 15.—**Pentyrch.** REST.—Erection of proposed "Garth Rest" for Consumptives, Pentyrch, near Cardiff. Plans may be seen, and bills of quantities obtained, on payment of a deposit of 2*l.* 2s. Mr. John H. James, M.S.A., architect, Taff's Well, Cardiff.

DECEMBER 14.—**Northfleet.**—FIRE-STATION, HIGH-STREET.—The U.D.C. invite tenders for the erection of a fire-station. Full particulars, etc., may be seen at the offices of the District Surveyor, The Hill, Northfleet. The first eight applicants will be supplied with a copy of the specifications and drawings (uncoloured) on depositing with the Surveyor each the sum of 2*l.* 2s.

DECEMBER 18.—**Barmouth.** — ADDITIONS, ETC. — Alterations and additions to Caersalen C.M. Chapel, Barmouth. The plans, etc., can be seen with Mr. R. R. Williams, Ty'n Co'd-buildings, Barmouth, and at the offices of Messrs. Owen Morr's Roberts & Son, architects and surveyors, Portmadoc.

DECEMBER 20.—**Belmont.** SCHOOLS.—Additions to the Ferguson Memorial Schools, Belmont, for the Committee of Belmont Presbyterian Church. Plans, etc., may be had at office of Mr. Thomas Houston, architect, Kingscourt, Wellington-place, Belfast.

DECEMBER 23. **Birkenhead.**—CARBURETTED WATER-GAS BUILDINGS.—The Corporation invite tenders for the construction and erection of a block of buildings for the carburetted water-gas plant at the Gas Works, Thomas-street, Birkenhead. Copies of the specification, etc., may be obtained by approved applicants at the office of the Gas Engineer, Mr. T. O. Paterson, M.Inst.C.E., Gas Works, Thomas-street, Birkenhead, on making a deposit of 5*l.* 5s. The drawings may be inspected, and further information obtained, at the office of the Gas Engineer.

DECEMBER 24—**Wandsworth.** ROOFS. The Guardians of the Wandsworth Union invite tenders for overhauling the roofs at the Infirmary, St. John's-hill, Wandsworth, S.W. Form of specification, etc., can be obtained upon application at office of Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

NO DATE.—**Cork.**—SHOPS, ETC.—Tenders are invited for the erection of shops and cycle factory at 5, King-street for Mr. W. H. Mulligan. Mr. Hugh W. Flanagin, B.E., B.A., architect, 2, South Mall, Cork.

NO DATE. — **Leeds.** — HOUSES. — Tenders for two houses, York-road. Bricklayers' labour only, slating, plumbing, plastering, painting. For particulars apply Mr. E. Hill, architect, 13, Oxford-row, Leeds.

NO DATE.—**Liverpool.**—VENTILATING STATION.—Tender forms, etc., of work and full buildings of the ventilating station and filling in of certain airways, situated at George's Dock, in the City of Liverpool. Tenders, forms, etc., can be obtained from Mr. J. Shaw, M.Inst.C.E., General Manager and Secretary (Mersey Railway), Central Station, Birkenhead.

NO DATE.—**Shotley Bridge.**—ALTERATIONS, ETC.—Alterations and additions to the King's Head Inn, Shotley Bridge. Names to Mr. D. M. Spence, architect and surveyor, Shotley Bridge.

NO DATE.—**South Brent.**—REPAIRS.—Repairs to Moorside, South Brent. House may be viewed by appointment with Mr. W. H. Soper, Clifton-place, Brent.

ENGINEERING, IRON, AND STEEL.

DECEMBER 3.—**Heybridge.**—BRIDGE.—The Essex C.C. invite tenders for taking down and rebuilding Wave Bridge, over the Chelmer and Blackwater Navigation, at Heybridge, near Maldon. Plans, etc., can be seen, and specification, etc., obtained, at the County Surveyor's office, Tindal-square, Chelmsford.

DECEMBER 3.—**Wrenthorpe.**—HEATING.—Stanley District Education Committee invite tenders for building of heating chamber, and installation of hot-water heating system at Wrenthorpe School, near Wakefield. Specifications may be obtained from Mr. Alexander Angus, 128, Northgate, Wakefield.

DECEMBER 4.—**Banchory.**—BRIDGE WORKS.—Works to be executed in taking down iron central span of bridge over Dee at Banchory, Kincardineshire, and replacing same with two steel bowstring girders, for Joint Committee of Kincardineshire Road Board and Banchory T.C. Drawings may be seen with Messrs. Jenkins & Marr, C.E., 16, Bridge-street, Aberdeen, who will supply specifications, etc.

DECEMBER 6. **Edinburgh.**—STEEL GIRDER BRIDGE AT GORGIE MARKETS. Edinburgh Corporation invite tenders for steel work, concrete, brick, paving, mason work, etc., in the superstructure and roadway of new bridge carrying the cross road over proposed railway access to the City Markets, etc., at Gorgie. Schedules, etc., may be obtained on application to the City Road Surveyor, City Chambers.

DECEMBER 7.—**London.**—BRIDGEWORK.—The Board of Directors of the Madras and Southern Mahratta Railway Company, Ltd., invite tenders for bridgework, as per the specification which may be seen at the offices of the company. The charge for the specification is 1*l.* 1s., which will not be returned. Mr. H. Bonham-Carter, Secretary, 91, York-street, Westminster, S.W.

DECEMBER 8. —**London.** — BRIDGES. — East Indian Railway Company invite tenders for the supply and delivery of thirteen 150-ft. spans for Kiul and Hullohur Bridges, as per specification to be seen at the company's offices. For each specification a fee of 1*l.* 1s. is charged, which cannot, under any circumstances, be returned. Mr. C. W. Young, Secretary, Nicholas-lane, London, E.C.

NO DATE.—**Netherton.**—HEATING. Estimates invited for heating Netherton Church, Maryport. Full particulars of system, with costs, to be sent to Curate, Ghyll Glen, Maryport.

MISCELLANEOUS.

NOVEMBER 29.—**Bailieborough.**—PIERS, ETC.—The R.D.C. invite tenders for the erection of piers and the hanging of gates on allotments in the Townland of Rosehill, in the Mullagh E.D. Specification can be seen at office of Mr. Hugh Clarke, Clerk of D.C., Poor Law Office, Bailieborough.

NOVEMBER 29.—**Barton.**—SCAVENGING.—The Barton-upon-Humber U.D.C. invite tenders for the scavenging of District No. 2. A plan of the district and form of specification may be seen at the office of the Inspector, Mr. D. Houghton.

NOVEMBER 30. — **Bristol.** — SCHOOL FURNITURE.—Bristol Education Committee invite tenders for school furniture required at Fairfield Secondary School. Specifications may be obtained at the offices, Guildhall, Broad-street.

DECEMBER 1.—**Oldham.**—WASHDOWN CLOSETS, ETC.—The Sanitary and Buildings Committee invite tenders for the supply and delivery at their Rhodes Bank Depôt, Mumps Station (Lancashire and Yorkshire Railway), of No. 200 washdown water-closets, cisterns, and fittings. Specification, etc., may be obtained at the office of the Borough Surveyor.

DECEMBER 1. — **Ystalyfera.** — FENCING, ETC.—Glamorgan C.C. invite tenders for fencing and levelling playing field at the County School at Ystalyfera. Plans may be seen, and specification, etc., obtained, at the Ystalytera Police-station.

DECEMBER 2. **Barrow-in-Furness.**—EQUIPMENT OF PLUMBING LABORATORY.—The Corporation invite tenders for the provision of apparatus, etc., required in the equipment of the plumbing laboratory. List and full particulars may be obtained on application to the Director of Education, Town Hall.

DECEMBER 2.—**Great Yarmouth.**—PULLING DOWN.—The Free Library Committee of the T.C. invite tenders for the pulling down and removing the materials in two cottages, St. George's Paved-row West. Mr. J. Wm. Cockrill, Borough Surveyor, Town Hall, Great Yarmouth.

DECEMBER 4. **Ruislip-Northwood.**—SCAVENGING.—The U.D.C. invite tenders for the removal of house refuse. Forms of tender and full particulars may be obtained from Mr. W. Louis Carr, the Council's Surveyor.

DECEMBER 4.—**Thirsk.**—REMOVAL OF HOUSE REFUSE, CLEANSING OF EARTH CLOSETS, PRIVIES, AND ASHPITS. Thirsk R.D.C. invite tenders for removal of house refuse and cleansing of earth closets, privies, and ashpits in the contributory places of Thirsk and Sowerby. Further particulars may be had, and conditions of the contract seen, on application at office of Mr. William Swarbreck, Clerk, Council Offices, Finkle-street, Thirsk.

DECEMBER 7.—**Watford.**—BLACKSMITHS' WORK. The Watford U.D.C. invite tenders for blacksmiths' work. Form of tender, etc., on application to Mr. D. Waterhouse, Engineer, Council Offices, Watford.

DECEMBER 8.—**Burnham.**—STEAM ROLLING.—Burnham U.D.C. invite tenders for (1) steam rolling and scarifying for the ensuing twelve months; (2) 600 tons (more or less) of broken stone and gravel. Particulars, etc., may be obtained on application to Mr. Wm. H. Chowins, Surveyor, Public Offices.

DECEMBER 8.—**Poplar.**—ELECTRIC FAN, ETC.—The Guardians invite tenders for the supply of an electric fan and fittings in the laundry at the Workhouse, High-street, Poplar. Printed forms of tender may be obtained by personal application at office of Mr. G. Herbert Lough, Clerk to the Guardians, Guardians' Offices, 45, Upper North-street, Poplar.

✱ DECEMBER 9.—**Blackpool.**—TILING.—The Commissioners of H.M. Works and Public Buildings invite tenders for supplying and fixing of tile and faience dados at Blackpool new Post-office. See advertisement in this issue for further particulars.

DECEMBER 10.—**Worcester.**—HAULING OF MATERIALS.—The Corporation invite tenders for the hire of horses, carts, and drivers, for hauling materials, and for any other purpose. Forms of tender may be obtained at the office of Mr. T. Cann, A.M.Inst.C.E., City Engineer, Guildhall, Worcester.

✱ DECEMBER 14.—**Willesden.** MOTOR FIRE-ENGINE.—The Willesden D.C. invite tenders for supply of a motor fire-engine. See advertisement in this issue for further particulars.

JANUARY 5.—**Melbourne, Australia.**—FEED-WATER OIL ELIMINATOR.—Copies of specification and drawing can be obtained on application to Messrs. McHaffath McEacharn & Co., Pty., Ltd., Billiter-square-buildings, London, E.C., agents for the Melbourne City Council. Applications must be accompanied by a deposit of 5s.

NO DATE.—**Chesterfield.**—RIFLE RANGE.—Making 30 yds. rifle range at Chesterfield. Full particulars, etc., on application to Mr. J. Marsden Chandler, surveyor, Bank-chambers, Stephenson-place, Chesterfield.

NO DATE.—**London.**—LOCOMOTIVES.—The Minister of Public Works, Bangkok, Siam, is inviting tenders for five tank locomotives (one-metre gauge) for the Royal Siamese State Railways (Southern Line); also for 125 steel ballast wagons and five rail wagons (one-metre gauge). Copies of specifications may be obtained at the price of 7s. 6d. each copy from the Siamese Legation, 23, Ashburn-place, London, S.W.

PAINTING, etc.

NOVEMBER 29.—**Harrogate.**—PAINTING.—The Harrogate Corporation invite tenders for painting the street lamp-posts, lanterns, etc., within the Borough. The specification may be seen, and form of tender obtained from Mr. F. Bagshaw, Borough Engineer and Surveyor.

NOVEMBER 30.—**Carnarvon.**—PAINTING, ETC.—Tenders wanted for painting and colouring the Carnarvon County School buildings and asphalting the grounds. Plans, etc., may be seen in the office of Mr. Rowland Lloyd Jones, M.S.A., 14, Market-street Carnarvon.

NOVEMBER 30. **Cavan.**—PAINTING, ETC.—The Joint Committee of Management of Cavan Infirmary invite tenders for renovation of surgeon's residence (including painting, papering, and plastering of hall, rooms, etc., and other repairs), in accordance with the architect's specification, which may be inspected at the infirmary.

DECEMBER 2.—**Dewsbury.**—CLEANING, ETC.—The Guardians invite tenders for cleaning and painting work, etc., at the Workhouse. Specifications can be seen, and particulars obtained, on application to the Master of the Workhouse.

DECEMBER 6.—**Sunderland.**—PAINTING.—The Council of the County Borough of Sunderland invite tenders for the inside painting, etc., of schools. Specifications may be seen, and schedule, etc., obtained, at the Borough Surveyor's office, Town Hall.

✱ DECEMBER 8.—**London.**—PAINTING.—The Metropolitan Asylums Board invite tenders for cleaning and painting works and repairs at Blackwall and Rotherhithe. See advertisement in this issue for further particulars.

DECEMBER 8.—**Sheffield.**—PLUMBERS', ETC., WORK.—The Education Committee invite tenders for plumbers and glaziers' work required for general repairs during the year 1910. Specifications, etc., may be had on application at the office of the Education Committee, Leopold-street.

NO DATE.—**Westmorland.**—CLEANING AND PAINTING.—Cleaning and painting of Westmorland County schools. For particulars send stamped addressed foolscap envelope to the Secretary, Education Offices, Northumberland-road, Newcastle-upon-Tyne.

ROADS, SANITARY, AND WATER WORKS.

NOVEMBER 29.—**Harrogate.**—STREET WORKS.—The Harrogate Corporation invite tenders for private street improvement works required in King Edward's-drive portion extending from Skipton-road, to No. 49. The plan and specification may be seen, and quantities obtained from Mr. F. Bagshaw, Borough Engineer and Surveyor.

NOVEMBER 29. — **Prestwich.** — SEWERING. — The U.D.C. of Prestwich invite tenders for the sewering of Merton-road. Conditions can be inspected at the surveyor's office, Chester Bank, Prestwich, any morning between the hours of 9 a.m. and 11 a.m. The plans, etc., will be open for inspection at the office of the surveyor, Chester Bank. Copies of the bills of quantities, etc., can be obtained from the surveyor.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3487. DECEMBER 4, 1909.

Contents.

	PAGE
A Saracenic Mosque in Palestine	605
Industrial Associations of France	607
Notes	608
External Colour Decoration Necessary to the Completion of Town Architecture	609
Italian Notes—1909	611
The Concrete Institute	611
St. John's Hospital, Cirencester	613
The Architects' Technical Bureau	613
Notes from France	613
Picture Exhibitions	613
Architectural Association Debating Society	614
Sewage-Distributors at the Sanitary Institute	614
The London County Council	614
Applications under the London Building Acts, 1894 to 1909	615
Architectural Societies	615
Meetings	616
Fifty Years Ago	616
Illustrations:—	
Part of the Parthenon Frieze	616
Design for Glamorgan County Offices	616
Churchill Cottage Homes, Somerset	616
Legal Column	617
Competition News	618
Trade Catalogues	618
Books Received	618
Correspondence:—	
The Birkenhead Building Mishap	618
London and Provincial Builders' Information Centre	619
Westminster City Council	619
The International Map of the World	619
London and District Borough Councils	619
Projected New Buildings in the Provinces	620
London County Council Education Committee	620
Obituary	620
General Building News	621
Sanitary and Engineering News	622
Stained Glass and Decoration	622
Miscellaneous	622
Law Reports:—	
District Surveyors' Fees	624
Action for Alleged Slander by Cement Company	627
List of Competitions, Contracts, etc., Open	625
Patents	627
Some Recent Sales	627
Prices Current	628
Tenders	629

Illustrations.

Part of the Parthenon Frieze. From a Drawing by Mr. J. E. Platt (Student at the Royal College of Art).

Design for Glamorgan County Offices (Royal Academy Exhibition, 1909). By Mr. Robert Atkinson.

Churchill Cottage Homes, Somerset. Messrs. Silcock & Reay, Architects.

Illustrations in Text.

	PAGE
A Saracenic Mosque in Palestine:—	
Fig. 1. Mosque of Ali Bækka, Hebron	605
Fig. 2. View in Courtyard	603
Fig. 3. Domed Chamber showing Pendentives	606
Fig. 4. Capitals of Crusading Period	607
Fig. 5. Entrance Gate from Courtyard	607
Fig. 6. Stalactite Pendentives and Plan	607
St. John's Hospital, Cirencester	613

A Saracenic Mosque in Palestine.

THE mosque founded by Sheikh Ali Bækka in 1290 stands at the north-east border of the town of Hebron beside the stone-built and concrete-vaulted houses of the Hâret esh Sheikh suburb, and is only separated from the olive groves and the open hill-sides by a graveyard and a few new buildings still in process of construction in the ancient manner. The minaret of the mosque (see Fig. 1), which is the only building in the neighbourhood possessing an outline determined by artistic as well as utilitarian considerations, stands bravely up in contrast to the somewhat boxlike erections that form the rest of the city. Blank walls about 10 ft. high bound the little courtyard to the west of the mosque, and enclose a little plot of ground in which stand several rather dilapidated graves and a shady tree, beside a flagged space, always neatly swept, for the use of those who prefer to pray under the open sky rather than beneath a roof.

The mosque proper consists of a whitewashed hall lying to the north of the courtyard, and is chiefly interesting because of its extreme simplicity, and as an example of the happy effect produced by the broad curving surfaces of the domical cross groin vaults which form the usual ceiling and floor support of buildings throughout the limestone district of South Palestine. Straw mats on the floor and a few lamps hung from the highest points in the vaulting constitute practically the whole furniture.

To the east of the courtyard is a two-story building, above which, upon an octagonal attic, rises a dome of rather greater height than the ordinary house domes of the city (Fig. 2). The contour of the dome outside is more like a paraboloid than a hemisphere, and seems to indicate that the dome was built, as all native houses are roofed to-day, upon a centre made of props and brushwood piled into a heap to the desired height, and smoothed over into a rounded hillock with a layer of well-pounded earth. The lower story is given up to dark cellars and

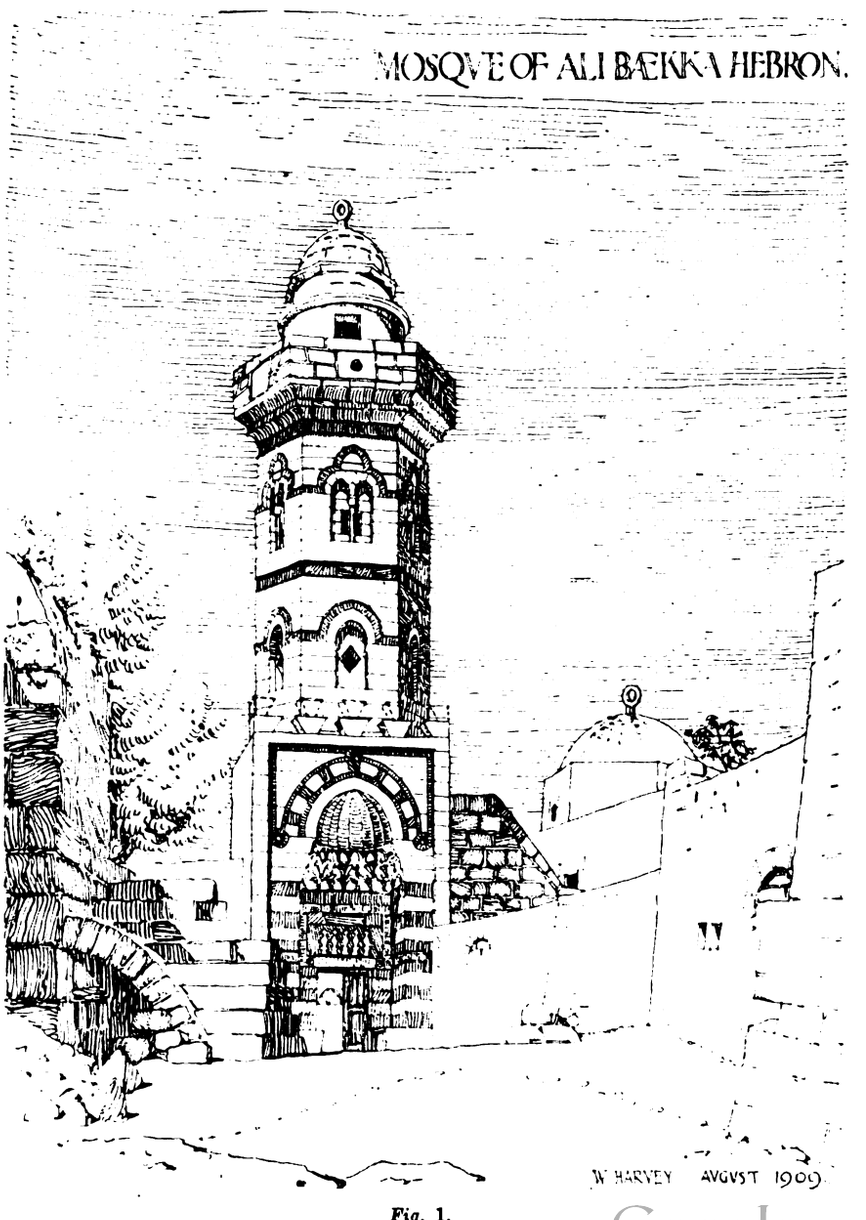


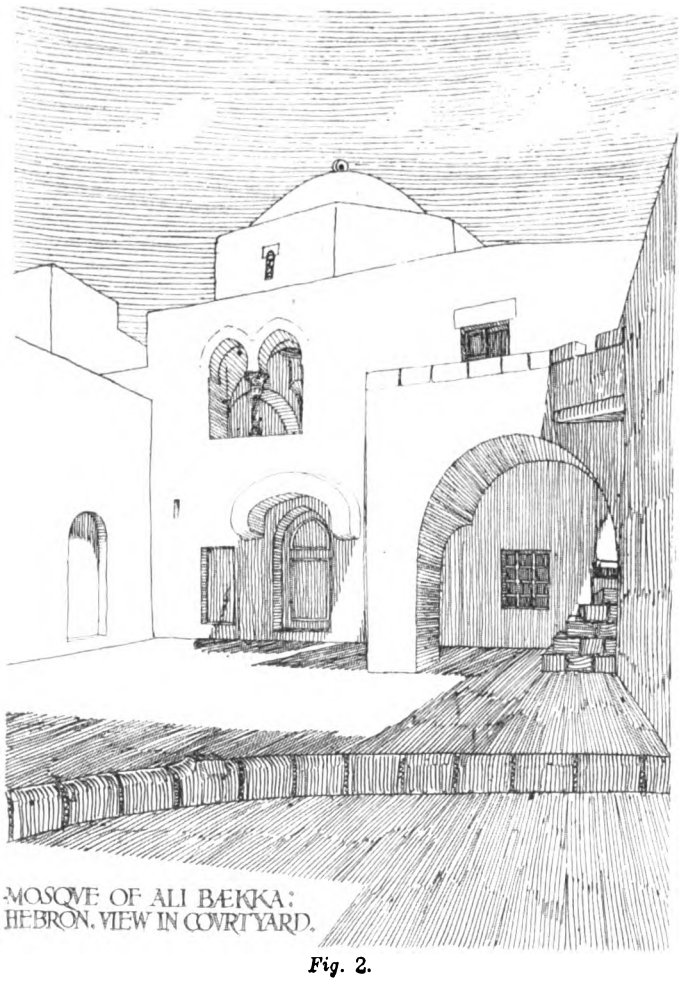
Fig. 1.

Digitized by Google

store-rooms roofed with the normal broad-surfaced vaulting of the place. Upstairs, beneath the dome, is a chamber of about 13 ft. square (Fig. 3), built to commemorate the founder of the mosque, and probably to mark the site of his grave in the room below. Four arched recesses, one in each side of the room, increase the floor space; that on the west contains the window overlooking the court. The southern arch is open to an antichamber roofed with intersecting barrel-vaults of unequal diameter. The axes of the smaller vaults, which give headroom to the entrance door and to a cupboard in the wall opposite to it, are made to incline steeply up into the middle of the room, so that the awkward intersection line of unequal barrel-vaults penetrating horizontally is avoided. The actual intersection line is, as in many cases in native building, rounded off into the surface of the larger barrel.

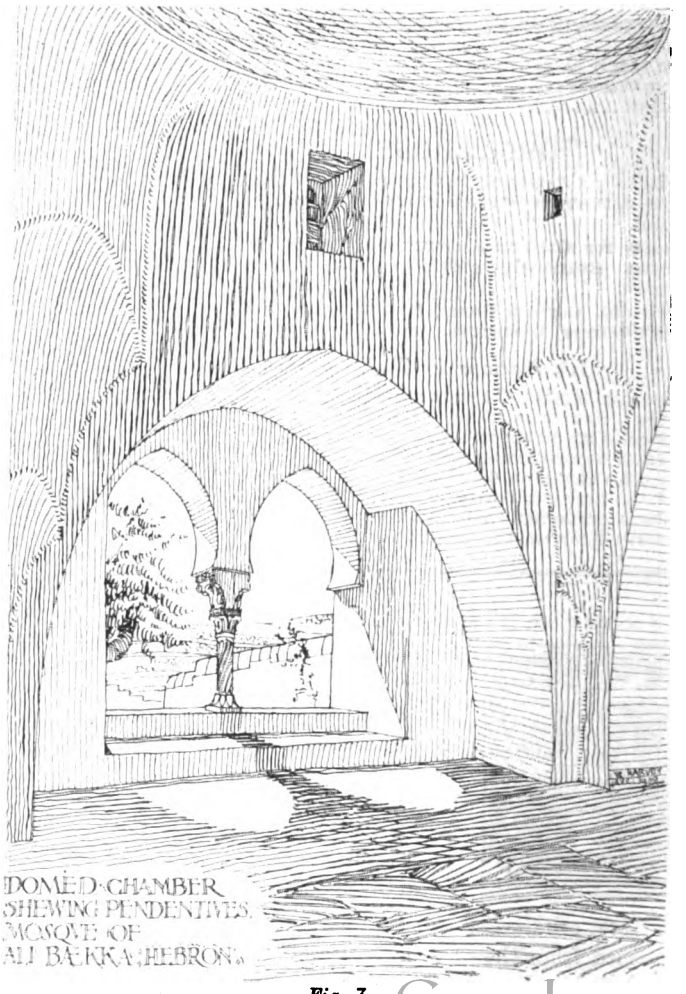
The pendentives of the dome spring from near the floor in the corners of the larger chamber and in form combine something of the appearance of the familiar spherical pendentive with the principle of the squinch arch. Two shallow, fan-shaped niches, one above the other, rise above the haunches of the arches that occupy the four sides of the room, and bring the upper part of the structure to an octagonal plan. Little pendentives gently swelling out of the angles of the octagon merge in a sort of cavetto cornice of undefined lower edge that runs around the circular base of the dome. Four little recesses just below the cornice indicate the positions of windows, now blocked up, that formerly lighted the upper part of the room. Above each pendentive a small rectangular hole suggests the position of the temporary beams for the centering of the dome. The main window is divided into two horseshoe arched openings by a marble shaft, with spirally twisted flutings surmounted by two capitals of Crusader workmanship, placed one above the other (Fig. 4). The lower capital, which is of about the normal size for the shaft upon which it is set, is simple, and consists of four leaves springing from the astragal, and carved so as to slightly overhang beneath the corners of the abacus. The other capital which rests upon this somewhat humdrum and unoriginal work is considerably larger and far more interesting. Three of its faces are elaborately carved, the fourth face, which had originally been prepared for building against a wall in the familiar Gothic fashion, has been roughly chipped free from the block that would have tailed it into the surrounding masonry of its former position. One subject, a lion and dragon in combat, is repeated with slight variations upon the three exposed faces of the cap. As in a great deal of Crusader work, especially that of the later years of the Crusades, influences from east and west, Byzantine and Gothic, have joined to direct the craftsman. The hollow-sided abacus, with its rosette in the centre of each face, follows closely the Byzantine tradition, but another spirit shows itself in the carving of the rosettes themselves, one of which is no flower at all, but a quaintly grinning head. In spite of Mohammedan prejudice against the representation of animal life in picture or carving, the capital has suffered very little mutilation; the grotesque nature of the subject having preserved the work from the pious hands that would have at once destroyed a serious and naturalistically rendered portrait of a lion or any other beast.

The entrance to the mosque is through a gateway formed in the lowest story of the minaret that stands in the south-west corner of the courtyard. An external flight of stone steps leads from the court up to the top of the gatehouse, from which point a spiral stair inside the tower rises to the level of the balcony. The gatehouse consists of a mass of masonry 13 ft. 3 in. square on plan, and some 23 ft. in height, through the middle of which the doorway of comparatively small dimensions is pierced from south to north (Fig. 5). To give architectural dignity to this opening, which is only 3 ft. 6 in. wide, a large recess 6 ft. 3 in. wide is sunk in each of the north and south faces of the mass to a depth of 3 ft. 9 in. Both of these recesses are hooded over at the top by niches of semicircular plan, whose vertical faces are formed by painted arches of roundish contour. Below the niches are stalactite pendentives (Fig. 6) transforming the plan of the recess from a rectangle below to a semicircle above, and supporting the stones of the niche by a succession of three courses of superimposed corbels. A colour scheme of red and cream-coloured limestone plays a large part in the design, and avoids the glaring effect of a white building under the sun of Palestine. The monotony of a mere alternation of dark and light-coloured courses is relieved by a series of stones dovetailed together and forming a sort of flat relieving arch above the door, and



MOSQVE OF ALI BAEKKA: HEBRON. VIEW IN COVRTYARD.

Fig. 2.



DOMED CHAMBER SHEWING PENDENTIVES. MOSQVE OF ALI BAEKKA HEBRON.

Fig 3

Digitized by Google

by a band of inscription in Arabic characters carved in the white marble lintel, and in a marble border of equal depth, enclosing the relieving arch just mentioned, and extending on a level with the lintel to the front of the recess, and returning along the face of the wall. Immediately above the lintel a purposely made space of about half an inch protects the marble beam from injury by the settlement of the relieving arch under the weight of the upper part of the wall. This evidence of the builders' craft is to be seen above almost every Saracenic doorway in Palestine, and is continued in many of the dwelling-houses of the present day.

Above the parapet level the plan of the tower changes from a square to a hexagon (Fig. 1). About 23 ft. above the top of the gatehouse story corbel courses, hollowed on the underside to form two cavetto mouldings one above the other, support the floor and parapet of the balcony, above which rises a short cylindrical chamber roofed with a dome, above which stands a roughly carved ring of stone to serve for the crescent symbol of the faith. The appearance of the upper part of the tower from the parapet of the balcony upwards seems to indicate that this part has been either rebuilt or largely restored at a comparatively recent period.

A band of red stone set back 2 in. from the face of the wall encircles the tower just below the corbel courses of the balcony, and another band, similarly disposed, lies between the lower and upper windows. Two other bands of red following the outline of the arches over the windows add undulating lines of colour to the two straight ones. Decoration by alternate courses of red and yellow stone is often seen in Saracenic building, but in almost all cases the monotony of this treatment is made to act as foil to some more elaborate and involved ornament in the same colours, the arrangement of the stones above the doorway just described being a typical though simple example of the practice.

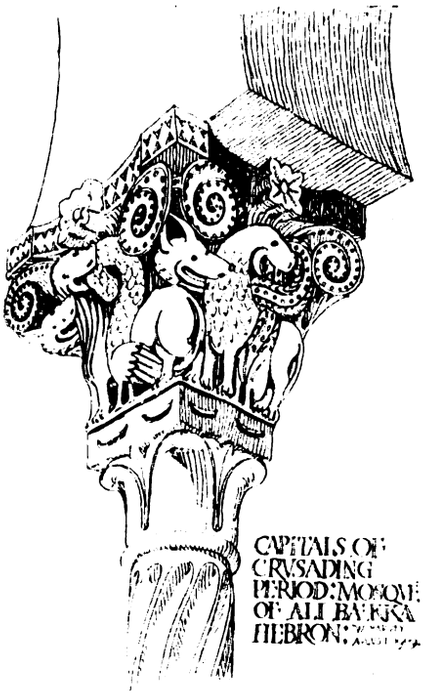


Fig. 4.

Beside designing his party-coloured wall in a way to produce the maximum of colour interest from simple means, the architect has found a way to press the sunlight into the service of his building by thinning the wall above each tier of windows and carving a chamfer upon the upper edges of the red bands that encircle the tower just above the arches. The sinking back of the two horizontal bands of red with a chamfer above and below gives a line of shadow under the overhanging upper chamfer, and of light upon the projecting lower one. In the full light of the blazing sun each of these little exposed ledges gleams and flashes like a line of fire, and gives to the building (by means of a detail that in England would be meaningless and dull) an effect of extraordinary charm. Gatehouse and tower together constitute an excellent and typical example of the mature Saracenic style in Palestine.

INDUSTRIAL ASSOCIATIONS OF FRANCE.

AN interesting proposal was made some time ago to the London County Council by the Royal Institute of British Architects. In a letter the Institute suggested that when the Council have under consideration such works as street planning, the design of buildings on land leased by the Council, the construction of bridges or monumental works, the Institute should have an opportunity of conferring with the Council's officials on the architectural aspects of such schemes. Further, if such proceedings were found productive of good, it might later be found possible

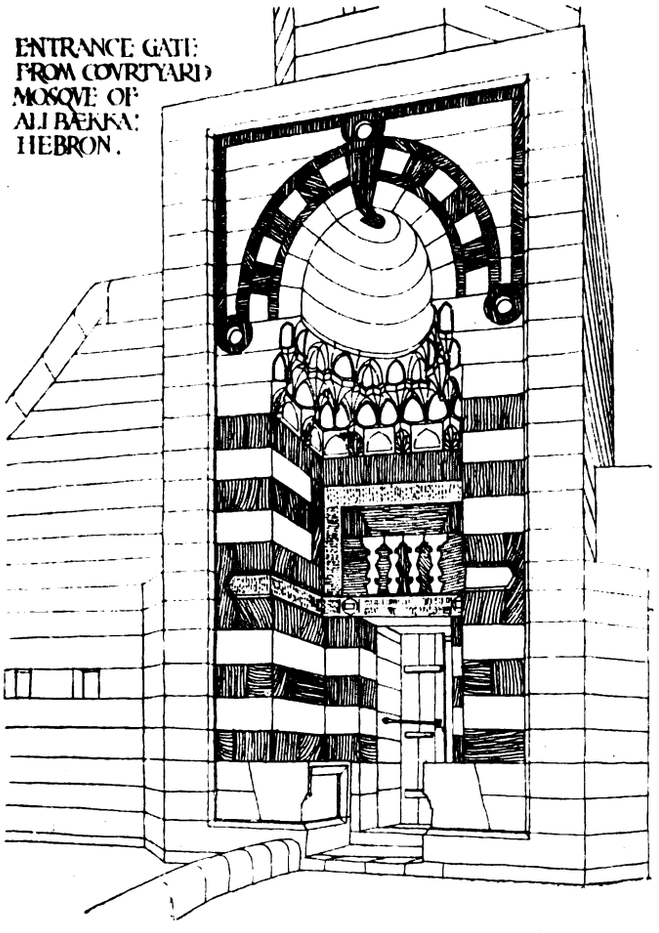


Fig. 5.

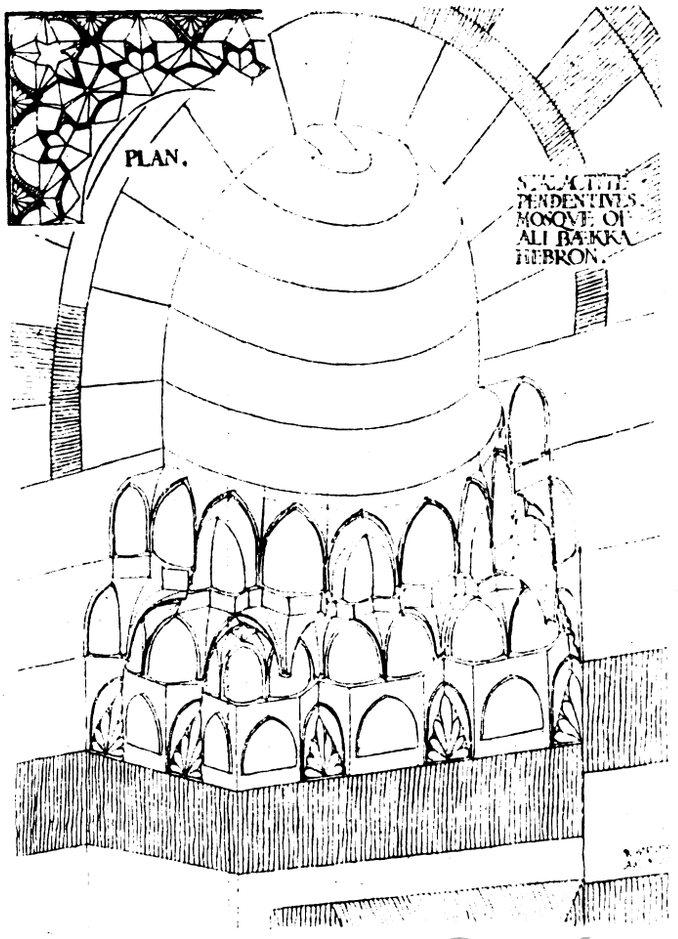


Fig. 6.

Digitized by Google

to arrange a committee, consisting of experts in these matters, whose services could be placed at the Council's disposal gratuitously.

If this arrangement fulfils itself a body would eventually be developed which would correspond with the Conseil des Bâtiments Civils of Paris, which is a committee of professional men deputed by the State to provide for the well-being of public buildings and monuments, such as the Louvre and Arc de Triomphe; also such places as the Sèvres porcelain factory are considered to be within its scope.

The Conseil des Bâtiments of Paris is not, however, the only committee formed for the general welfare in France. Others exist for definite purposes, the better known to the industrial world being the Normandy Association, the Industrial Association of France, and the Parisian Association of Proprietors of Steam Appliances.

The objects of these associations being of interest to the building trade, a brief review of their duties may be made.

The Normandy Association was founded in 1879 as a means to prevent industrial accidents. It was recognised as an "Establishment of Public Utility" by Decree of June 9, 1892, and the following gives details of its work since its creation:—

The Association was founded by M. Jules de Coene and a group of employers actuated by motives of humanity, to render security in work as perfect as possible, and to improve the sanitation of workshops, yards, docks, depôts, commercial and agricultural establishments. The Association endeavours to consolidate the interests of employer and employee. The National Laws and Decrees in effect prescribe that employers shall keep their establishments in the best possible state as regards safety and hygiene. (Law of June 12, 1893.) The law of April, 1898, renders the employer pecuniarily responsible for accidents; and, in addition, a penalty is enforced if protective measures have not been taken. It is, therefore, to the employer's interest to lessen his responsibility, for the Association hold that in "matters of accidents prevention is less costly than compensation."

The following duties are actively performed:—

(1) Annual visits by engineer inspectors to the establishments of members are made. In the course of this visit the inspector advises the best means to secure safety in the particular work done in respect of motors, transmitters, power-driven machines, swift-running emery wheels, flywheels, cables, and all electrical apparatus, etc. He also advises as to sanitation, air space, water-closets, dust, effluvia, etc. The measures recommended are always practical and economical; for instance, fencing is advised which securely protects with the least possible expense. Each visit is followed by a detailed Report, with designs and sketches applicable to the machinery seen, and showing how the member's own mechanic can protect the machines himself. In case of a serious accident the inspector makes on the premises a minute inquiry as to the cause. If there is a cause he seeks means to prevent a recurrence. Following the inquiry a report is prepared, which contains the latest ideas, as means of fencing are continually improving owing to the observations of the visiting inspectors.

(2) By the affixing in the workshops in accordance with the Laws the prescribed notices, and also affixing notices for the benefit of the workpeople showing how to avoid the usual clases of acoidents.

(3) By the annual publication of circulars, or leaflets, which are sent to members to keep them in touch with current Acts, Laws, decisions, and indispensable technical information.

(4) By the distribution of diplomas, medals, etc., to employers, engineers, directors, foremen, workmen, etc., who have taken the initiative and invented appliances of protection.

(5) By legal advice on the difficulties which occur on the occasion of accidents, or as to the definition of Laws and Decrees.

(6) By discreet intervention in questions of legislation relating to industries.

In order to complete the services rendered to employers, the Association has added to its work a branch dealing with electricity, in order to prevent the numerous and often grave accidents which result from the increasing use of this power. It also notifies its supporters of the most economical and practical use of their installations, and rigorously inspects all the appliances. This branch renders very useful service owing to the development of electricity in all branches of industry. The advantages to members are considered to be:—

(1) A great diminution in the number of accidents as compared with works not under the control of the Association.

(2) The employer's tranquillity is secured, owing to decrease of accidents. This greater ease of mind helps him to greater activity in his business.

(3) In case of an accident and legal action being taken, the fact of being a member is *primâ-facie* evidence that precautions have been taken.

(4) A decrease in the insurance premium.

The continual development of the Association has undoubtedly proved its utility, and it is held that the factories of the members show the advantages gained by their safe and hygienic condition. Its action is confined to several departments of Normandy where the employers concerned have in their employ about 100,000 workers.

The Industrial Association of France against accidents in work was recognised as an "Establishment of Public Utility" by the Decree of April 8, 1891. It was created later than the Normandy Association—viz., in 1883, by Emile Muller; but for the same purpose—safety at work and health in the factory. In order to effect this he sought the consolidated interests of the employers. Inspectors are appointed, and they perform similar duties to those above noted, but they do not deal with coal-mines or quarries. The advantages to members necessarily are of the same nature as before described.

Although this Association is of a later date, its range is greater, operating, as it does, in seventy-nine departments of France. It is of greater importance than that of Normandy, the membership representing more than 300,000 workpeople.

The Parisian Association of Proprietors of Steam Appliances was recognised as an "Establishment of Public Utility" by Decree dated June 18, 1888. This Association has in view the prevention of accidents and explosions of boilers, and makes known to its members the most economical use of steam. Its method of acting consists in visits by a special staff of inspectors; in the communication of interesting facts observed on steam appliances; in scientific and practical advice given by a staff occupied solely on steam appliances; and in the propagation of necessary professional instruction to firemen and mechanics by special courses of lectures, and in other ways. It guarantees to its members two inspections per year and per boiler. One of these inspections, called the internal visit, is of chief importance, and is made when the boiler is at rest and after it has been scoured. The object is to discover any defect in plates and rivets, and in general all hidden faults invisible during working, and which, left unperceived, might give rise to serious accidents. The other inspection, called the external visit, is made during working hours; it has for its object the testing of safety appliances, water gauge, safety valve, etc.

An exhibition by the Association at the Conservatoire des Arts et Métiers, Paris, comprises:—Specimens of parts of boilers found faulty during inspection by the inspectors of the Association; corroded interiors and exteriors, flaws, bumps in the fire-box, cracks in plates and rivets, incrustations, damages to smoke and water tubes, etc.

Apart from the six cases containing these exhibits, two tables are also shown giving results of examinations; strength of various plates; tests of the consumption of appliances; analysis of water and of fuel, etc.; and various cards, diagrams, photographs, books, etc., are to be seen giving information as to details likely to be useful to steam-power users.

So far as the actual inspection of boilers is concerned, these duties are carried out in our own country by the boiler insurance companies, it being to their interest, as well as that of the owners, that proper inspection should be made. Even if this were not so, it is a requirement of the Factory and Workshop Act that such an inspection should be made at least every fourteen months, so that a reasonable protection is practically guaranteed. So far as the wider scope of the two first-mentioned associations is concerned, there is nothing in this country of a like nature for the protection of the building trade. In view of the proposed building regulations the advisability of such a combination of employers might well be considered. The cost could be met by a small contribution from a sufficient number of employers, and the advantages, if the French membership is any criterion, should be substantial.

NOTES.

Smoke Prevention in Hamburg.

A PRAISEWORTHY organisation founded some years ago in the city of Hamburg is the "Society for Fuel Management and Smoke Combat." One particularly meritorious characteristic of the Association is that it directly represents commercial firms and other proprietors of steam boiler plant, who are anxious to obviate the waste of fuel as well as to avoid polluting the air by a gratuitous distribution of unconsumed coal in small particles. The functions of the Society include the periodical inspection and testing of the boilers belonging to all members and the instruction of stokers. Recognising the importance of efficient stoking, the Society advocate the bonus system of remunerating boiler attendants, and have succeeded in inducing the owners of more than 350 boilers to adopt the apparatus by which samples of flue gases are taken as the basis of payments to the men, the proportion of

Digitized by Google

5 per cent. being given on the value of fuel saved and 2½ per cent. being deducted on the value of the fuel lost by the passage of unconsumed hydro-carbon gases. It is stated that one effect of the work performed during last year was to raise the average efficiency of the boiler plants concerned by from 12 to 20 per cent.—a result which ought to encourage British manufacturers to organise an Association akin to that of their confrères in Hamburg. We specially commend to attention the method adopted in Germany for encouraging stokers to make the utmost of scientific boiler plant and good fuel.

Albero Bello Bridge, Rome.

THE longest masonry arch hitherto built is that in the Planen Viaduct with the clear span of 295 ft. Concrete bridges have been gradually creeping up to this record, while the designers of reinforced concrete arches have already passed it on paper, and before long will have done so in reality. The Pittsburg City authorities have commenced the construction of a reinforced concrete bridge with an arch of 300 ft. span, and the Municipal Council of Rome have recently authorised the building of an arch in the same material with the clear span of 100 metres (328 ft.). This structure, having the rise of 32·8 ft. and two semicircular approaches guarded by parapets like those on either side of the bridge, will cross the Tiber in one span, and if treated without any attempt in the direction of extraneous decoration it should be at once an ornament to the city, and a work appropriate to the nation by whom the use of concrete was so largely developed throughout the ancient Roman Empire.

The Colorado River.

IN August, 1907, we described the unfortunate results attending the endeavour made by an irrigation company to secure water supplies from the Colorado River without first constructing a head regulator. The effect was to encourage a deviation of the river by which the Imperial Valley was flooded, and a great inland sea was formed. According to recent reports, there is now reasonable ground for fearing that the irrigation canal supplying the Imperial Valley may be deprived of water owing to changes in the channel of the river. Efforts are being made to keep the canal intake in communication with the main stream, and it is to be hoped that these may prove successful. If they do not, and if the river should wander away from its present course, some 10,000 inhabitants in the Imperial Valley may be deprived of water, and the region will once more become a desert. The problem of securing permanent and reliable water supplies for the valley is one not free from engineering and administrative difficulties. Those living in a district which one year is overwhelmed by uncontrollable floods, and another year is threatened by water famine have much reason for desiring relief from such violent extremes.

The Theory of Impact.

IN the *Journal* of the Franklin Institute Mr. H. D. Tiemann, Engineer of Timber Tests, United States Forest Service, discusses the theory of impact and its application to the testing of structural materials, his object being to make clear the principles underlying impact tests, and to show the true relationships and influences of all the factors involved. The author has developed the theoretical and mathematical part of the discussion progressively from simple mechanical facts, and in such manner that the average reader can follow all that is said without difficulty. Being a readily understood explanation of the relation between the behaviour of test specimens and the laws of impact, this contribution may be said to fill a gap hitherto existing in technical literature. Although some of the formulæ have been suggested by standard works on applied mechanics, Mr. Tiemann has followed original lines in dealing with an important branch of practical research.

EXTERNAL COLOUR DECORATION NECESSARY TO THE COMPLETION OF TOWN ARCHITECTURE.*

IN the country, colour is omnipresent; it has its tides—its ebbs and flows—but even at its greatest ebb we are encircled with tender russet and purple tints from the woodlands and ploughed fields; the pastures keep a greenness, the hedgerows an intricacy of innumerable tints, the hillsides are shaggy with copse wood, and fledged with pines; sheets of water reflect, in intensified colouring, the vegetation that surrounds their margins, the trees that stand sentinel beside them, the hills in whose lap they lie, and the blue of the sky overhead, and into every nook and fold in the landscape the witchery of the atmosphere flings a veil of mysticism, blending and suffusing the colours. At the call of spring the pulse of Nature stirs and quickens; the fields put on a richer green; the cloud snow retreats, melting, giving place to the earth snow of the daisies and the blackthorn, and the pale amber of the primrose. From thence to midsummer the land is one glory of ever-changing colour, the beauty of bud and blossom succeeding each other in limitless profusion, and reluctantly yielding to its successor. We look out on a garden of living enamel. After blossom comes harvest, the harvest of the field and then of the orchard close, and the trees begin to don their heraldry of gold and bronze and scarlet, vying with the pageantry of the sunset in the skies. Strange swirls and wreaths of dreamy vapour hang indolently about the downs, the woods lay down thick carpets of crimson and copper beneath the beech-trees and pine-stems, the holly dons a glossier green and tricks itself out in its bravery of vermeil. In this kaleidoscope of colour about us the need of artificial colour is less insistent. We have but to open a shutter or draw a curtain, and we disclose a painted window.

But it is otherwise in our large and crowded towns: there Nature's restless activities are confined in space and checked in growth. Year after year the seasons renew themselves, and with the seasons the impulses in branch and herbage. But the privation of light caused by our high buildings and our narrow streets, the acids and impurities of our atmosphere, cripple and scorch the tender growths, and degrade the freshness of their tints, till at last a film of grime reduces the green of summer to an inky grey, and obscures and sullies the yellow of decay, so that we view the complete ruin of the foliage as a desirable riddance, and are thankful to have the fallen leaves swept up and consumed as promptly as possible.

For half the year our city is the colour of a dirty cobweb, and the only refreshment the eye gets is in the glimpses of the sky overhead, the shop windows, and the hoardings. These latter mark the hunger for colour significantly. The posters, so far as advertisement is concerned, might as well be in plain black and white, but they fairly wallow in colour. Often this chromatic carnival fails in effect, but the failure is due to ignorance of how to obtain the proper value, not from any sparingness in the application of the tints. And this liberality of colour is provided, not out of generosity or exuberance of advertisement, but to supply a felt want.

We want colour in our streets; we have tried for it by using coloured building materials, paint, creepers, and flowers in window-boxes, and we have gone to the cost of all these endeavours, not merely to gratify our own cravings in the matter, but for the pleasure of the passer-by in the street. But those ventures are generally disconnected attempts, and so are on too small a scale to make any distinct effect, and, owing to the nature of the materials, they soon sink back into the general dinginess of the surroundings. Colour must be laid on boldly, in great broad masses, and with an unconquerable heart: it is the accompaniment of romance, of poetry, of enthusiasm, of abandon. Before the cold paralysis begotten of experience that we call wisdom, colour pales and fades away. The best, and by that I mean the most inspired work, is done in youth, and the colour then is the richest and most eloquent, though some there be—like Gian Bellini, or, to come nearer home, Mr. Watts—who retain their colour faculty right on into old age.

In youth, a nation has the courage to court failure, or rather to regard it as a passing circumstance in its attempt to grasp the ideal. For what to them was failure but the stepping-stone to new effort? So much experience brought to them so much new knowledge, and suggested so many fresh possibilities. Not only the science of architecture, but the beauty which is the cream and bloom of science, grew up from the careful observation of building disasters, and the invention of expedients that might obviate their recurrence. The conditions of the time and the temper of the people determined the actual forms of the building, so that—for example—we get in one case Classic, in another Gothic architecture; but these styles were living only so long as failure was allowed to be possible and experiments encouraged. When that ceased the art of architecture became a recapitulation of past examples, the science—their reconstruction or adaptation.

Why should we fear to treat whole streets in colour? Is there anything to lose? The streets at present are not beautiful, nor are they interesting. The modern ones have no single architectonic quality. There is no general principle of design in them, no uniformity, style, composition, balance; a few good examples of designs occur in the general welter, but they make no effect on the whole, which mainly expresses private obstinacy, tinctured with selfishness.

We have pursued, I venture to think, the treatment of stone architecture in our streets, as far as the properties of the material will allow. I do not mean that we have exhausted all the forms and proportions that stone buildings are capable of, but one is beginning to ask oneself what is the good of all this careful scholarship—this anxious attention to the nuances of light and shade, this thoughtful treatment of the texture of our wall surfaces—in a dirty place like Leeds, Sheffield, or London. For the first few years of their life, in their clean freshness, our buildings—the better ones—have a great charm and distinction; but the City grime descends upon them before they have had the chance of harmonising their effects, and time—that should be blending and softening their idiosyncrasies—is simply eating them away with its polluting touch. Yesterday's masterpiece in stone sinks in a short while, under our present atmospheric conditions,

* A paper read before the Architectural Association Debating Society on October 29, by Mr. Halsey Ricardo.

Digitized by Google

into the general rank and file of our grey, unremarkable buildings — lost under the impartial obliterating hand of London smoke. Occasionally, by some process of destructive cleaning, or by the kindlier action of paint—to quote a recent instance, the clean colouring on the Athenæum Club—some memorable building gets recalled, another Eurydice, from the gloom of the Tartarus that we call London; but it, like Eurydice, rapidly sinks back again into the ranks of the lost, and we are left, with Orpheus, to bewail the inexorable might of the realms of Dis. Take the clubs in Pall Mall, for an instance. There was a chance! San Gallo's Farnese palace, Sansovino's Library, Palladio's basilica—all laid under contribution, each masterpiece reappearing under conditions of life and occupation very similar to those by which the originals came into being—for the club of to-day is a very fair parallel to the palace of the XVIth century; and yet, thanks to our thick and light-intercepting atmosphere, we pass them by with scarce so much as a glance. If they were to be suddenly whitewashed overnight, we should be startled next morning by their beauty and their majesty. We go to Rome, to Venice, to Vicenza to admire what we have got—almost as good—in our own streets here at home.

Just lately there has been an attempt to contend with the corrosion and dirt of our atmosphere by the use of marble, which—it is hoped—will not so rapidly decay, and which can be more easily and harmlessly cleaned than stone. I do not think that marble is going to stand in London any better than stone. Glazed surfaces are, I believe, the only answer, if the permanence of the material is to be a prime condition. Brick and terra-cotta get incurably befouled. Marble requires frequent repolishing, and only few marbles will stand our climate out-of-doors. Granite endures, but unless it be polished it also gets very filthy. Glazed terra-cotta, glazed bricks, tiles, and glass mosaic are permanent materials, and then there is the alternative of achieving our effects by periodical renewal by means of oil or water paints and distemper.

Glazed terra-cotta has hardly found its own as yet. To use it as a white building stone is timid and unsatisfactory; to use it as an unwholesome damson cheese is (as in the case of some of the tube stations) sheer misprision of its qualities. To attempt to get the quality and individuality of touch of the carver into the moulded blocks is another misuse. To ask of its mouldings that sharpness, precision of jointing, and accuracy of face is to ignore the nature of the material. Moulded clay warps as it dries, and twists in the kiln; and up to a certain degree it should be allowed the failings as well as the virtues of its nature. The design for the block should recognise this; its ornamentation should be that which a sculptor models in clay, not that which he strikes out with a chisel. One hears *à priori* objections to the use of glazed surfaces—they used to be very rife—but one is becoming familiar with these surfaces, and the enormity of the glaze is found to be very inconsiderable. Nearly 50 per cent. of a house front is glass window—and one cannot have a more lustrous surface than glass, especially polished plate glass—and the glare from house windows has rather an interest on the few occasions when one notices it.

Paint—especially water paint—is what one ought to indulge in profusely. It was always a joy when the time came round—as it did pretty frequently—for the quadrant of Regent-street to be repainted. The fine sweep, with its smiling fresh clean paint, and the beautiful gradations of tint that one got owing to its curvature, made the south end of Regent-street one of the pleasantest bits of London—so gay, so cheerful, so friendly. The terraces that border the Regent's Park have almost a nobility—seen from the Park itself—due to the unanimous way in which they get periodically repainted. How much this simple renewal means one can count at a glance, by comparing them with the unpainted stone "terrace" that stands on the site of the old Coliseum.

These, however, we must admit, are not very ambitious schemes of colour. The treatment of the outside of the Athenæum Club is something more adventurous, but even there not much is risked. When one considers the nature of the denizens beneath its roof, one sees that the Decorative Committee would naturally not dare to plunge into all the tinctures of mediæval heraldry; but for the little done we may be warmly grateful. It is a refreshment, like the strip of grass in front of the National Gallery, after the miles of grim streets we have to traverse. The result of this stony disdain, this proud scholarship of our streets, is that we can't live in them. Every evening thousands upon thousands escape by every railway from these masterpieces of correct architecture and superfine sculpture to the shelter of the country, where the earth is green about them and the heaven blue above them. Cannot we make our streets a little more kindly and comforting to those poor prisoners who cannot escape? We have tried the blandishments of mass and form, and light and shade; let us now try the soothing protection of colour.

Time was when men themselves contributed a considerable quantity of colour in our streets; their dresses were brave with brilliant cloth laced with gold embroidery, and their chariots blazed in colour and gold enrichments, whilst the trapping to the horses and the liveries of the servants kept up the same high note of colour. To-day the Lord Mayor's and the Sheriffs' coaches whisper a mild echo of the splendour of that age—authentic relics of the time when the streets of London were gay with the movement of this coloured traffic. True, we have our coloured omnibuses, but they are so distractingly be-lettered that one gets no broad effect of colour; you can hardly tell, until the vehicle is fairly alongside of you, whether it is a blue or a red bus, or really a yellow one. And what could be more dingy than the appearance of our streets where men largely preponderate—say in the City, round about the Bank. There came a time, in Venice, when the riot of colour—in the skies, on the house walls, in the canals—spurred the gondola to such a pitch of costly emblazonment that a Sumptuary law became imperative, and the little craft, gorgeous as a humming-bird's throat, was sobered down to the funereal thing of to-day. But, like a black pig in a meadow, it does but enhance the colour of the streets along which it passes and of the waters on which it floats; it enhances the colour, because the colour is there; neither pig nor bank clerk can enhance the colourlessness of the Royal Exchange. We see Venice to-day dreadfully bleached, but the dry bone of what she was when the gondola was regulated into sables, and yet one's recollection of her—when we return home—is that chiefly of colour. Her incomparable St. Mark's—so much veined and jewelled agate; her stately palace looking over the quayside with its front of almond blossom and amber; the Dome of the Salute (till they re-sheeted it with milled lead) one immense orient pearl; the city an opal set in enamels of varying blues and green. These memories are pleasant ones; our streets ought to be full of colour; they were once, throughout mediæval Christendom. Why should they not be so again?

We have the authority of the painters (until the decadents in the XVIth century) on our side. Look at the pictures in the National Gallery—the story of Griselda attributed to Pinturicchio, the paintings of Carlo Crivelli. Even if the streets were never the splendid mass of colour that he represents in the "Nativity," he has made them at any rate what he thought they ought to be. Even the cold pencil of Canaletto cannot quite chill the colour from out his canvasses; in the three dialogues on painting compiled by Francisco d'Ollanda, a Portuguese miniature painter who was in Rome in the year 1538, Michelangelo, in reply to a question as to the famous works of painting in Italy, gives a list of what has been done—chiefly by his contemporaries, of which he has either seen or ventures to praise on the strength of report, and adds:

"So in Pisa, in Lucca, in Bologna, in Piacenza, in Parma, in Milan, and in Naples. So in Genoa there is the house of Prince Doria, painted by Master Perino, with great judgment, especially the 'Storm of the Vessels of Æneas,' in oils, and the ferocity of Neptune and his sea-horses; and likewise in another room there is a fresco, Jupiter fighting against the giants in Phlegra, overthrowing them with thunderbolts; and nearly the whole city is painted, inside and out . . . and there are to be found in Italy some cities which are nearly all painted with tolerable painting, inside and out."*

It was such paintings as those—of Giorgone, of Perino del Vago, of Dosso Dossi, and such like, that brought external decoration of buildings to an end. The Pope had Raphael to paint his loggie and Giulio Romano his suburban villa; the rich banker Chigi had Baldassare Peruzzi to paint his house across the Tiber, and so on.

When once the standard of external wall decoration is raised to this insupportable height the end is near. Nobody is going to put on his walls anything that is not of the very best, and nobody is going to put on the walls the very best, because it costs too much money, because under the influence of time and weather the picture gets spoiled; because, being immovable, he can't sell the fresco and so recoup himself for his outlay. The loggie of the Vatican have had to be glazed in, and the frescoes repainted; the others are scarcely more than a memory. And with the ruin of these paintings, the practice of external painting came into discredit. Simple fields of colour were looked upon as cheap substitutes for the triumphs and allegorical displays of the great masters, and under "the cold hand of that friend of virtuous poverty in architecture," as Mr. Howells calls Palladio, the pusillanimous and ignorant notion was engendered that "correct" architecture was a mass of proportion, light and shade, balance and symmetry, untroubled by the glamour of colour. Despite the fact that the buildings in Italy in the Imperial days of ancient Rome were coloured from top to toe, "classical" architecture was to be an arrangement of bleached bones—a cult of the beautiful that could only appeal to the virtuoso and the cognoscenti, to the sophisticated, in short, and as this theory had its immediate conveniences, and was undeniably cheap, it has persisted into these days. But it was, and is, at the expense of the popularity of fine architecture; it could only be appreciated by the trained expert; his eye only could detect the niceties and subtleties of the architect who designed them, except in the few occasions, such as at Bath and Nancy and some few more places, where the architect had the opportunity to carry out a scheme on such a large scale that Nature gets an entrance with her broad colour effects, and gives to the architect that spacious architectonic quality which renders him independent of applied colour to his buildings.

I take the Piazza of St. Peter's at Rome as an instance; though that on a dull day is gloomy indeed, compared with the Royal Crescent at Bath under similar climatic conditions. But on a sunny day it is indeed full of colour, from the immense amount of atmosphere enclosed, the radiance of the fountains, the golden ochre of the travertine, heightened with silver lichen, darkened with purple shade; while veils of blue mystery hang beneath the colonnades, or lurk in the hollows of the masonry. At Bath the Crescent sits queenly on the hill, bowered in trees; a smiling park is spread at her feet, and a sheet of perennial green grass forms a dainty apron covering her feet. The picture is one wholly of colour, and when I first knew the Crescent the

* Holroyd's "Michael Angelo Buonarotti."

Digitized by Google

occasional hatchments on its walls had the value of the gold and jewelled enrichments that one sees on pictures of the quattrocento. On so large a scale of planning, with such open and coloured surroundings, the actual stonework has colour enough of its own, but as soon as we move into the denser and darker array of buildings, we feel the need of definitely applied colour.

ITALIAN NOTES—1909.

FROM A CORRESPONDENT.

POPULAR demonstrations in favour of Anarchy and Socialism have always a natural tendency towards the destruction of ancient monuments—at least in Italy. During the great social revolutions of the XIXth century innumerable must have been the ancient monuments which disappeared in the course of frenzied moments of political excitement, but at that time the popular sentiment of the Italians was devoted to the ambition for a United Italy, free from the irksome control of foreign governments. A certain sentiment of admiration for the traditions of the mediæval Republics survived in the days of Garibaldi, but everything associated with the Papal and aristocratic institutions of a later time became an object of ridicule and contempt, and frequent destruction.

In the former pontifical states this popular desire to injure the historic public monuments of a city was, of course, particularly pronounced, and the defaced monuments of that part of Italy constitute memorials, in their very disfigurement, of an interesting character. The colossal figure of a Pope in the principal piazza of Rimini, converted into a representation of a totally different personage, with his tiara covered over with a clumsily-designed mitre constructed out of sheet iron, and the erased inscriptions, affords material for study by any student of modern social developments.

The Socialism of Italy at the present day is, however, much more deeply tinctured with an anti-religious sentiment than were the revolutionary elements of former times in the peninsula. And as a consequence of the low standard of education amongst the lower classes, this anti-religious sentiment will probably be more destructive of the evidences of ancient history, which of necessity are generally in the form of tombs or temples distinguished by religious emblems, than was formerly the case. It may be feared that the archæologist and student of ancient monuments in the future will have to contend with destructive influences which have hitherto been a great deal checked by the survival of religious ideas amongst the people—ideas which admitted of the public display and recognition of continuity in these religious emblems. The Italian Socialist of the present day is, however, carrying on a campaign to destroy all traces of historical memorials, and, of course, especially those which have a religious significance.

In the recent disturbances throughout Europe caused by the events at Barcelona, Italy has naturally not been behindhand; almost every town in the peninsula has had its indignation meetings to sympathise with the Spanish revolutionaries. The usual renaming of streets after the martyrs of Socialism has been carried out in a way which perhaps could only be done by Italian town councillors. But a more serious evidence of a deep-rooted hostility against ancient monuments on the part of the rabble has been displayed by the injury to church façades, the breaking of stained-glass windows, and in some cases the pulling down of memorials.

According to the *Corriere* of October 15, at Forli "the demonstrators, after breaking all the windows in the Bishop's palace, proceeded to the Piazza Della Prefattura, and after burning the hoarding round the ancient column of the Madonna, they proceeded to demolish the column apparently without any opposition on the part of the police." The column was presumably in process of being repaired or restored.

This is, of course, a mere sample of what commonly takes place under the circumstances amongst the excitable people of these Mediterranean lands. They always have displayed similar tendencies in past ages, when there was an opportunity to protest against the powers that be. But it was to have been hoped that, with an increased education, such savage vandalism as is reported from all over Italy would have been almost impossible in the XXth century. As already remarked, the most unfortunate feature in the matter is a recrudescence of anti-religious fanaticism, which will certainly very much influence the future fate of monuments. Under these present circumstances it would be curious to know what the various societies for the protection of antiquities and the *Uffizio Regionale* propose to do in cases of popular vandalism.

Turning from this somewhat unfortunate aspect of modern Italy to an opposite extreme—the conservation and restoration of the national historic monuments—the most imposing work of the kind at present in progress is the rebuilding of the Campanile of S. Mark at Venice. Visitors to Venice in the present year 1909 may almost feel that the Queen of the Adriatic is once more herself again. The absence of the tower proved it to be perhaps the most important monumental feature of the city. Without its ponderous and simple bulk overshadowing the great piazza, or appearing as a principal landmark in distant views of the city, there seemed an extraordinary sense of loss. Now once more the tower—even in its unfinished condition—dominates its surroundings as in former days, and the strange semi-aquatic city of the middle ages seems to cling to its central mainmast.

The reproduction of the older portion of the tower is now almost complete; that is to say, the great square mass of yellow brickwork with little round-headed windows lighting the staircase The upper portion, with its open-arcaded loggia and pyramidal spire, has yet to be built. The appearance of the work, as far as it has gone, is certainly remarkable. The imitation of the original seems exact, and but for a little lighter colour in the bricks it would be difficult to detect its newness. When completed—if carried out as it has been begun—the new tower will be a most remarkable replica of its predecessor, and well worthy the effort which it must have cost in execution.

The famous "Loggia del Sansovino"—the little portico which stood at the base of the tower fronting the entrance into the Ducal Palace—was of course reduced to a very fragmentary condition by the fall of the huge mass above it. But in a remarkable manner much of this beautiful little building with its sculpture still survives, and the great panels of sculpture, having been carefully pieced together, now stand in the courtyard of the Ducal Palace ready for placing in their original positions. This great work of restoration—one of the largest ever undertaken in Italy—is at present under the care of the architects Moretti and Del Piccolo—the latter being chiefly engaged on the reconstruction of the Loggia of Sansovino.

In building the new tower an ingenious mode of scaffolding has been employed. It consists of an iron and wooden platform which rises with the completion of every few feet in the height of the tower. The platform is supported at the four corners by iron supports attached to the angles of the tower, which are carried down to the ground, and admit of being lengthened as the work progresses. The tower is consequently visible in its total height, and without the usual clothing of scaffolding with which such a construction is usually covered. This method of construction is now, however, at its full practicable height, and the open loggia on top will be built with the more usual scaffolding of a fixed description resting on the last stage of the movable platform.

Italy has always been a land of odd contrasts, and none has ever been greater in past history than those of the present day. On one hand we see the Anarchists pulling down the historic monuments of past greatness and world-wide interest—the marvellous cathedral of Piso, for instance, barely escaping total destruction at the hands of an infuriated mob—whilst at the same time the chiefest monument of a generally condemned oligarchy of the middle ages is being rebuilt with lavish expenditure and most sympathetic care. Such contrasts are the inheritance of a people many sided in character, fertile in imagination and in sympathies.

G. J.

THE CONCRETE INSTITUTE:

CONCRETE IN THE UNITED STATES.

MR. ALEX ROSS presided, on November 25, at the Royal United Service Institution, over a meeting of the Concrete Institute, when an address was delivered by Mr. Richard L. Humphrey, M.A.S.C.E., the secretary of the American Joint Committee on Concrete and Reinforced Concrete, on "Some Points Relating to Concrete and Reinforced Concrete as Applied in the United States." The lecture was illustrated with a large number of lantern slides depicting the many purposes for which concrete had been used in the States.

Mr. Humphrey, who apologised for the informal nature of his remarks owing to the MS. of his proper lecture having gone astray on the Continent, said they had watched with interest the formation of the Institute from the other side of the water. He understood that the scope of the Institute was primarily that of education, and this, he believed, was the keynote in connexion with the development of concrete. Concrete itself was an old material used by the Romans, but what they were using to-day was quite another material, superior in every way, and its reinforcement with steel had developed a field which was apparently limitless. Much had been done in England in the development of concrete, and they had only to note the development in the production and consumption of Portland cement in various countries to realise that such production must mean an increasing use of concrete. One thing which had particularly impressed him on his visit to Europe was the fact that whilst there was a good deal of cement used on what he might call conservative lines, yet there was nothing like the varied use of it as was the case in America. In his opinion, there was apparently a limitless use for the material, only dependant on the ingenuity of the constructor as to the lines in which it might be used. It was perhaps a fact that in the development of the use of any material the standardisation of methods and other details of scientific importance must follow the use of the material, and that was so in the case of concrete. The use of concrete had far outreached the scientific development of facts in connexion with the subject, and the great need to-day was for more intimate knowledge of such important matters as the reliable working stress, the behaviour of the material under different loads and under static loads; the question of whether the reinforcement should go on as a unit or otherwise, whether there should be rigid connexion with the members of two adjacent beams, or between the beam and guide and column, the question of the durability of the material and its suitability to stand corrosion. All those things were of such great importance that it behoved them to investigate and find out what should be done and what were the best methods; and it was the work of such Institutes as theirs which was going to do the greatest good in this field. The proper mixing and the amount of water to be used in concrete were essential matters. In some parts of the Continent he had found concrete being

Digitized by Google

used almost absolutely dry. He had seen beams of rather great span put in under these conditions, and it was a marvel that under such abuses concrete could do such good work. In America they had simply swung the span the other way. They used to believe in dry concrete, and then they went to the other extreme and used it too wet. They had now come back to the central position, where the concrete was just as wet as it could be possibly made and still maintain a consistency which would keep the cement and sand and stone in intimate relation. They had found that the proper way to attain that was by thoroughly mixing before the material was placed in position, and yet very little attention had been given in Europe to the important question of mixing. There were a great many things in which international co-operation was needed, and particularly in the matter of standardisation. The Colleges in America, and many of the Institutions on the Continent, were carrying on investigative work, and the sooner they could crystallise what they knew of the subject of concrete the sooner would they save a great deal of useless work in fields which did not need investigation. The difficulty in the use of concrete seemed to him to be in the education of the architect. The massive structures of the engineer, in respect of which architectural features were of secondary importance, had been developed by the use of concrete, but the architect had not yet been able to think in concrete. The architect had been trained to use such materials as brick, stone, steel, and terra-cotta, but he was now asked to think in a different material—a plastic material that did not lend itself readily to the designs he had employed for the other materials he had been in the habit of using. In his belief it was owing to the fact that the architect had not yet awakened to the real value of concrete which had done much to thwart its development. If they stopped to think of it, concrete offered one of the best materials there was to-day for construction. The sculptor could take a mass of clay and mould it into a beautiful piece of work, and he believed that if the architect could be brought to realise that he could take this plastic material and mould it into a structure he would make more real progress. He had been impressed by the fact that on the Continent there was a much more artistic treatment of concrete as a building material than was the case in America. In Germany, Austria, Hungary, and other places on the Continent he had seen very handsome buildings in which concrete had been very simply treated, and the effect was very fine. He would return to America with the conviction that there was even a greater future for concrete than he had anticipated, and he believed there would be a much more rapid development in Europe than they had experienced in America.

A number of views were thrown on the screen showing the very many purposes for which the material is employed in the States, such as, for instance, bridges, railway-sleepers, fencing, the construction of subways, cement pipes, irrigation works, piles for river work, etc. Speaking of its use for fences, Mr. Humphreys said that farmers in the States were beginning to see that it had great advantages, although the first cost of such posts was greater than wood, the cost of maintenance was less, and they were especially useful in districts where fires were not an uncommon occurrence.

He agreed that the first attempts of architects with concrete had been somewhat unsatisfactory, but they had succeeded in designing some very fine buildings made entirely from the material. Its use had been very largely developed on the Pacific coast, for the earthquake in San Francisco had shown that such buildings had more successfully resisted the earthquake than any other. It had also been largely employed in the erection of buildings for exhibition purposes, and the principal hall at the Buffalo Exhibition was constructed of concrete. Reinforced concrete had been largely used for building chimney stacks, and they had some of those structures 450 ft. high. There had been cases of collapse, and the investigations showed that the chimney had actually swayed owing to the action of the wind which had caused the wearing away of the concrete at the joints. The stacks of America were constructed in a fairly dry mortar and they used to place about 5 ft. a day, and raise the chimneys successively in rounds of 5 ft. The result was that the bonding at these joints was not particularly good, and in an oscillating wind the stack had a tendency to sway. Where fairly wet concrete was used that was not observed. Mr. Humphrey threw on the screen a number of concrete residences, and remarked that there were a great many country houses in the neighbourhood of New York and Boston which were built of concrete. The material was also being very largely used for other ornamental purposes, and more particularly in gardens. In Harvard College there were two buildings, one built of granite and the other of artificial stone, and within 10 ft. it was almost impossible to say which was the real and which the artificial. His experiences on the Continent had taught him that concrete could be polished as good as marble, and he felt certain there was a great future before it as an artificial building stone. He thought it would be agreed that the general effect of concrete in the landscape was good, and its colour lent itself very effectively to the gardens of Boston and New York. Its use for ornamental purposes with colour effects, and with the insertion of glazed tiles showed its possibilities, and many architects had used it by simply inserting a tile here and there, with good effects. Commenting on a photograph of a concrete building which had passed through the Baltimore fire Mr. Humphrey's remarked that in America they lost as many buildings every year by fire as were erected, so that the question of fire prevention was a serious problem. He believed that concrete construction would play an important *rôle* in the question of fire hazard. The Government had been carrying on investigations for some time, and before long they would have a central laboratory for the testing of concrete and other structural materials. Already tests had been made to try and determine the effect of reinforcement, both vertical and lateral, and many interesting fire tests had also been made. That all pointed to the importance of co-ordination in the work of standardisation, for there was no reason why there should be amongst the countries of the world any greater differences in methods than there should be in a single country. He trusted that England and America would exchange views, and that they might be able to co-ordinate their work, so that the work of standardisation amongst the English-speaking peoples at least might be as a unit. He believed that the future of concrete was very rosy, but there was a lot more investigation and deep thinking to be done in connexion with the subject, and he hoped the Concrete Institute would take an active share in that work.

Mr. C. F. Marsh, M.Inst.C.E. (Metropolitan Water Board), in opening the discussion, said that Mr. Humphrey had told them that it had gradually become the practice on the Continent to mix concrete more wet. He (Mr. Marsh) had always thought that the material ought to be mixed neither too wet nor too dry. The Metropolitan Water Board were constructing new works with reinforced concrete, and he believed the concrete was being mixed to the best consistency. He hoped that before long they would have some very good types of structures in reinforced concrete in England, and that under the new London Building Act they would be allowed to use the material for outside walls. If that was done the architect might have a chance of showing what he could do with the material in the form of mouldings. Almost the worst feature of concrete construction was the cracks which formed owing to the action of the temperature and other causes. The question as to the action of water on the material was a very important one. Referring to a photograph which Mr. Humphrey showed of a building where all the sides were moulded in advance and then erected, Mr. Marsh said it was extremely interesting, but he was inclined to think that if he had to live in a building so constructed he would be afraid of its coming down like a pack of cards in a high wind.

Mr. J. Wager (H.M. Office of Works) said that as an architect he had listened with great interest to Mr. Humphrey's address. He was quite prepared to look into the matter with a view to using ferro-concrete in building operations here.

Mr. W. H. Johnson said it would be interesting if Mr. Humphrey could say whether he had found that reinforced concrete outside walls suffered from cracks after being erected about a year.

Mr. Humphrey replied that he had examined many walls which had cracked, but they had been built six or seven years ago, when their knowledge of the material was not so good as it was now. Recent experience had shown that expansion joints were not necessary in long walls.

Mr. F. W. Martin inquired how the difficulty of condensation was got over in houses built of concrete, and asked whether they had hollow walls.

Mr. Humphrey said that the difficulty had been overcome by putting in an insulating wall of some kind. He had seen buildings of concrete walls in America which only had plaster on them, and apparently they did not suffer from damp.

Mr. Wentworth Shields remarked that it would be interesting to have a little more information about reinforced concrete railway-sleepers. Nothing had been attempted in that direction yet in England, but he had read of experiments being made in Italy. He understood that in America they were introducing a wooden cushion with a view of diminishing the effect of the vibration caused by heavy locomotives going over the rails, but he did not know whether it had proved successful. Mr. Humphreys had told them that concrete was largely used in America for buildings for cold storage. It had also been used for that purpose in England, and at first it was hoped that it would have proved an insulating material to prevent the outside heat getting into the cold rooms. Those hopes, however, had not been realised, and at Southampton they had had to build a further insulation of timbers and sawdust. He was interested to hear that in America it was found that concrete chimneys unless reinforced were too rigid, owing to the fact that the chimney tended to rock on its horizontal joints. Not long ago he erected a chimney in the South of England about 150 ft. high, and although it was of brick, he was very anxious to reinforce it so as to prevent the vertical cracks which so often appeared in large chimneys, which were not only unsightly, but which often caused a good deal of anxiety to the engineer in charge. The idea in his mind was that the right way to do this was to bury steel rods inside the brick work. He was told that if he attempted to do this in lime brickwork it would be disastrous, as the lime would corrode the steel rods. He introduced the steel rods at intervals of about 4 ft., but he buried them in cement mortar and introduced a cement joint at intervals of 4 ft. The chimney had been up four years, and so far the result had proved satisfactory.

Mr. F. E. Fiander Etchelles said he trusted Mr. Humphrey would assure the American Joint Committee that the Concrete Institute was engaged on similar work to their own in consolidating opinion in this country, which was the thing they needed more than anything else. He would like to know what methods of demolition the Americans had

Digitized by Google

adopted for reinforced concrete, because apparently fire would not do it. He would also be pleased to hear whether rusting had taken place inside any of the buildings, and, further, whether Mr. Humphreys considered that a beam cast in moulds and brought to the site was stronger than a beam moulded in position.

Mr. H. K. Bamber referred to the action of sea-water on Portland cement, and said his opinion was that at present there were very few cases which could be pointed to where any serious damage had been caused by the action of sea water. Mr. Humphrey had touched lightly on the question of the rusting of the iron in concrete. He (Mr. Bamber) had recently inspected two or three ferro-concrete structures which had been in existence thirty or forty years, and he found no evidence of rusting in the enclosed iron.

Mr. Humphrey said that the large American railway companies were experimenting more and more with concrete sleepers, because it was getting increasingly difficult to obtain good wooden ones. As to the use of concrete for cold storage buildings, he did not intend to convey the idea that the concrete was used also as an insulating material, but simply that it was a material particularly adapted for the form of construction required. The covering on concrete roofs was a problem, but in many cases felting and tar was used. On the question of corrosion, no doubt some went on in the sky-scrapers of New York, but if the steel was properly enclosed there was little danger of that. Regarding the action of sea-water, he had seen concrete docks constructed in 1852 at Copenhagen which were in a perfect state of preservation. Speaking generally, where the concrete was properly mixed, he did not consider there was any danger from sea-water. He would prefer to use columns moulded on a site rather than those moulded away and brought to the position where they were to be erected.

ST. JOHN'S HOSPITAL, CIRENCESTER.

"THE Capital of the Cotswolds" is what this old Gloucestershire town likes to be called, and not unreasonably, for it has a most interesting history. The name of the place is likely to prove a stumbling-block to the unwary, for "Cirencester" is pronounced as it was spelt in ancient days, "Cicetor," or, as the Gloucestershire vernacular has it, "Zizzetur." In addition to its fine church, Cirencester has retained considerable portions of its old domestic buildings, among them the well-preserved remains of St. John's Hospital, founded by Henry I., and endowed by him with one third of the tithes of his demesne in Cirencester. The building is now a mere shell, with the exception of the end bay, which has been walled up and converted into a house, occupied, I understand, by a market-gardener, who uses the ground floor of the building as a kind of forcing-house. The piers and capitals are typical of their period, but have been restored, while it will be noticed that the arch curve of one of the bays is not true, in all probability the result of another restoration. St. Lawrence-street (now called Gloucester-street) once had a hospital dedicated to the saint of that name. It was founded by Edith Lady of Wigwold. All traces of this building have disappeared, but its site is preserved in the road called Spitalgate, an obvious corruption of "Hospital Gate." The same thing occurs in many place names, as Spitalfields, Elsing Spittle, near Cripplegate, each of which once possessed an ancient hospital.

SIDNEY HEATH.

THE ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

A MEETING of the Architects' Technical Bureau Selection Committee was held at the Technical Bureau-buildings on November 23, when a number of manufacturers' specialities were submitted for the consideration of the committee, also a selection of high-class electric fittings.

Mr. Basil Champneys occupied the chair, and the following other gentlemen were present: Messrs. E. Guy Dawber, Geoffry Lucas, Marshall Mackenzie, jun., Keith D. Young, and Mr. Wonnacott, who attended by invitation, a resolution having been passed at the previous meeting "that architects who are subscribers to the Bureau be invited to attend at the various meetings held for the purpose of considering manufacturers' specialities."

The subjects approved at this meeting consisted of the following:—

"(1) A new patent stove, with a regulating chimney door, for the purpose of varying the draught when the fire is first kindled, and one that will resist the back current of air or smoke. (2) A metal filament electric lamp. (3) A new patent ball-bearing axle pulley, for heavy sashes and reducing friction to a minimum. (4) A water-softening apparatus. (5) Patent system of water-tight, dirt and dust proof glazing. (6) A new patent kitchen range. (7) An improved form of gas mantel. (8) A system of fireproof flooring. (9) A decorative enamel paint; (10) a reinforced concrete floor which requires no centring; and (11) a selection of electric-light fittings, which were approved for their merit in design and workmanship."

The next meeting for the consideration of manufacturers' specialities will be held on December 14, and architects who are subscribers to the Bureau who desire to be present at this or any forthcoming meeting are requested to advise the Secretary.

The list of subjects for consideration at the next meeting will close on the 9th inst., and manufacturers who intend to be included should communicate with the Secretary, Technical Bureau-buildings, 24 and 25, Hart-street, Holborn, W.C., without delay.

NOTES FROM FRANCE.

THE Jury in the annual competition for the best new house fronts in Paris have awarded the premiums as follows: to M. Bruno-Pellissier, for the Hôtel des Annales, 51 Rue Saint-Georges; M. Lavirotte, for the Hôtel No. 23, Avenue de Messine; MM. Le Nevé and d'Hont, for the house No. 14, Rue Bassano; M. Humbert, for a Hôtel No. 124 Avenue Victor Hugo, on the site of what was formerly the poet's residence; M. Chifflot, for the house No. 110 Boulevard Raspail; and M. Saulier, for the house No. 18 in Rue de la Paix.

The Jury in a competition for a new Hôtel des Postes et Télégraphes at Béziers have awarded the first premium to MM. Harant & Jumeau, of Béziers.

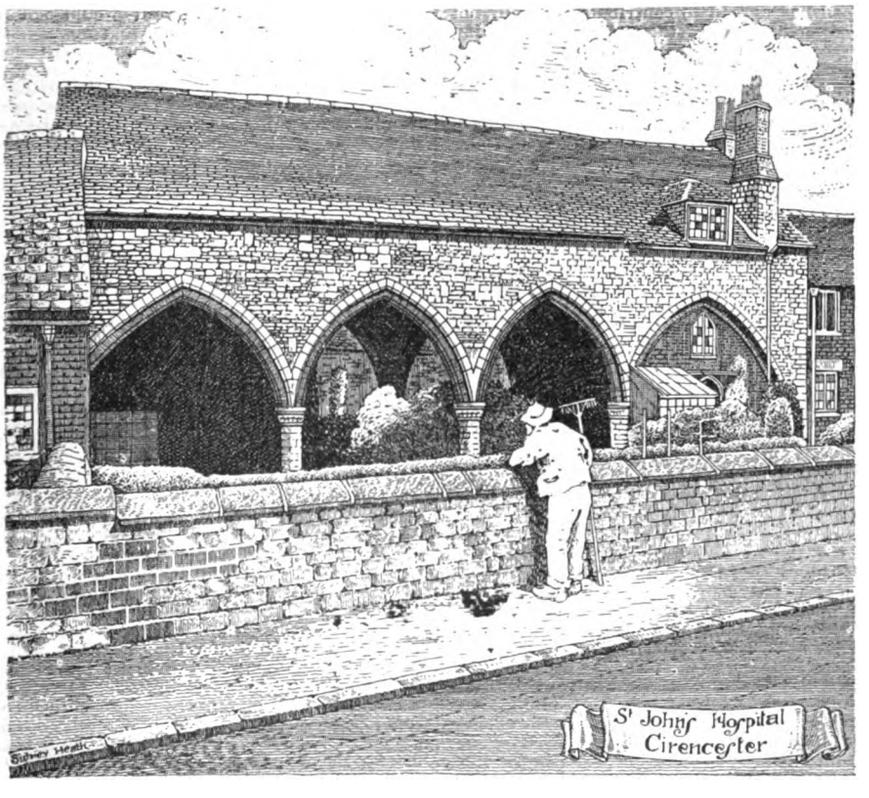
Three large tapestries are just being completed at the Gobelins manufactory, from the designs respectively of the late M. Albert Maignan, the late M. Toudouze, and M. Cormon. The first, of which the subject is "Jason and Medea," is intended for the Luxembourg; the second, representing "The funeral of Dugueselin," is for the Palais de Justice at Rennes; the third, which is intended for the Palais de Justice at Bourges, represents the visit of the Duc de Berry to that town.

By a decree of the President of the Republic, the buildings of the ancient Seminary of Saint Sulpice have now been definitely handed over to the Department of Fine Arts, to receive the collections of the Luxembourg Museum.

PICTURE EXHIBITIONS.

THE NEW ENGLISH ART CLUB.

THE Club, which has now made its home at the Society of British Artists' Gallery in Suffolk, shows in the present exhibition a larger proportion than usual of works which we can admire and sympathise with. There are some really fine and powerful landscapes; among them Mr. W. H. Waddington's "In the Lambourne Valley," with its tree built up in the middle of the foreground; and Mr. Arthur Streeton's "Corfe Castle" (if he would have given a little more aerial perspective to his distance). Mr. Von Glehn's "The Blue Posts," a Venice Canal scene, is an excellent example of what seems to be one of the objects of many of the members, viz.: the recording of special effects of light and colour in outdoor scenes. Miss Alice Fanner's three landscapes are all good, and pervaded with what Constable called "God's daylight." Among the figure subjects a nude study by Signor Mancini is an unusual event, and is a powerful piece of colour, far more attractive than most of his portraits. Mr. A. E. John, in a life-size portrait called "The Man from New York," shows us that he can paint sanely and reasonably when he chooses; an evidence rather necessary after the preposterous picture called "The Girl on the Cliff" on the opposite side of the room. Mr. W. Orpen's "On the Cliff" has the making of a



Digitized by Google

good picture, only the face is negligently painted. There are, of course, plenty of strange and bewildering crudities on the walls; and Mr. Nelson Dawson, who exhibits a large landscape called "The Cross Channel Boat Leaving Newhaven," would, we think, be wiser to keep to the jewellery in which he is such a real artist.

THE LEICESTER GALLERIES.

A set of water-colours by Mr. Rackham in illustration of "Undine" and of Grimm's Fairy Tales cannot but be interesting, though it is hardly equal to his "Rip Van Winkle" and "Peter Pan" illustrations. Still, there is much beauty in these designs, which would have made a sensation if they had come out as a first exhibition by the artist; and the treatment of "Undine" as the creature without a soul, and consequently with a countenance expressive only of whim and *espièglerie*, is exceedingly good. In the same room is a collection of Mrs. Allingham's works, all with much the same motive—a rural cottage and one or two little figures drawn and finished with the most conscientious care. Her programme is a restricted one, but within its limits each work is perfect.

ARCHITECTURAL ASSOCIATION DEBATING SOCIETY.

THE fifth meeting of the session was held on Friday, November 26, when a debate took place upon "Competitions Open *v.* Limited." Mr. K. Gammell spoke in favour of open competitions where it was a question of public buildings to be erected with public money. In such cases, he contended, it was morally wrong for a public body to select a limited number of architects to compete, and it was only fair to the young and unknown architects to have an opportunity of submitting a design. An open competition was the only way of obtaining the best design.

Mr. W. G. Wilson, in opposing Mr. Gammell, and speaking in favour of "limited" competitions, said that public bodies had not only to see that they obtained the best design, but that the architect was capable of carrying it out, and in this respect a competition was useless. Further, that in the case of an open competition, where there were such large numbers of designs submitted, it was, humanly speaking, impossible to say which was really the best; the competition then becomes a gamble. He also said that to contend in open competitions was not the best way for a young architect to build up a practice.

Messrs. Hamp, R. Smith, Forster, Jacob, Ross, and Bullock took part in the debate.

Mr. A. H. Belcher was in the chair, and on a show of hands he declared the voting to be in favour of "open" competitions by a majority of one.

The next meeting will be a joint meeting with the junior members of the Surveyors' Institution, and will be held at 18, Tufton-street on Friday, December 17, when Mr. Raymond Unwin will move "that the planning of towns and estates should be designed by an architect assisted by a surveyor."

SEWAGE-DISTRIBUTORS AT THE SANITARY INSTITUTE.

AN exhibition of sewage-distributors is now being held in the new premises of the Royal Sanitary Institute, 90, Buckingham Palace-road, but is somewhat disappointing. At the time of our visit five firms only were represented, and we believe that none of the exhibits is shown for the first time. Messrs. Burn Bros. exhibit the "Certus" automatic flush-tank and alternating and timing siphons for contact-beds, the special feature of the latter being that small oil-siphons (in which the oil is automatically used over and over again) are provided to start the sewage-siphons. They also exhibit an automatic, self-cleansing rotary sewage-distributor for a circular filter about 10 ft. in diameter; the arms are fitted with rods and levers to which pins are attached for working into the holes in the arms, the movement of the rods and pins being automatically controlled by buckets in the central chamber of the sprinkler. A small model of a rotating sprinkler and a number of drawings are shown by the Carlton Engineering Company. The arms of the Carlton Sprinkler are finely slotted to allow the sewage to escape, and the slots are cleaned by means of pins moved to and fro by bevel-wheels and rods, but there is nothing to show how these wheels are operated.

Two "Fiddian" distributors of the moving type are shown by models; these are water-wheels, one for a rectangular bed, and the other for a circular bed. The former is carried on side tracks and is rolled along by the sewage from one end of the bed to the other, and is then automatically reversed to travel in the opposite direction; the other travels always in one direction and is pivoted at one end at the centre of the bed and carried at the other end on a circular track. Farrer's simple distributor is of the tipper type, and discharges alternately to right and left into perforated channels. The "Stoddart" distributor, which is also shown, has no moving parts; it consists of galvanised-iron plates with V-shaped corrugations, into which the sewage flows; through notches cut out of the ridges of the corrugations the sewage overflows and drops from projecting points under the valleys of the corrugations.

As far as it goes, the exhibition is interesting particularly to those desirous of seeing apparatus for dealing with the sewage from country houses, but surely it would have been to the advantage of all parties if a description of the exhibits, however short, had been prepared for the use of visitors.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday at the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loan.—It was agreed to lend St. Pancras Borough Council 5,098*l.* for electric lighting.

Improvement, Church-street, Kensington.—The Improvements Committee recommended, and it was agreed:—

That the estimate of expenditure on capital account of 66,300*l.*, submitted by the Finance Committee in respect of the widening of Church-street, Kensington, to the south of Clarence-mews, be approved.

That, as the Kensington Royal Borough Council has agreed to contribute one-half, not exceeding 25,000*l.*, of the net cost of the improvement, the widening of Church-street, Kensington, be undertaken.

Theatre, etc., Applications.—Sanction relating to the following matters was given:—

Application by Mr. J. M. McEwen, for a certificate in respect of the Aldwych Roller Skating Rink, Aldwych. Amended proposals have now been submitted by Messrs. Gregg & Detmar showing how it is intended to provide additional exits, and to make certain other improvements.

A drawing, submitted by Messrs. Gregg & Detmar, showing alterations proposed to be made at the Cabin Restaurant, 11, Edgware-road.

A drawing, submitted by Mr. F. T. Verity, showing alterations proposed to be made to the seating and exits at the area level at Gatti's Palace of Varieties, Westminster Bridge-road, with a view to the use of the premises for cinematograph entertainments.

Drawings, submitted by Messrs. F. W. Dixon & Sons, showing proposals for complying with certain of the requirements made by the Council for the structural improvement of Holborn Hall, Gray's Inn-road.

Drawings, submitted by Mr. F. H. Payne, showing the arrangements in connexion with the Midget City Exhibition, proposed to be held in the annexe at Olympia, Hammersmith.

Application, made by Mr. G. F. Morgan, for a certificate for the Queen's Hall Skating Rink, 24 and 26, High-street, Peckham. An amended drawing of the premises has now been submitted, showing a proposal to provide additional exits into High-street, Peckham.

Application, made by Mr. G. W. Elwell, for a certificate in respect of the Shaftesbury Skating Rink, in course of erection in Shaftesbury-avenue and New Compton-street.

A drawing, submitted by Mr. G. R. Farrow, showing alterations proposed to be made to the York Minster public-house, 44, Philpot-street, Stepney.

Administrative Buildings, Norbury Estate.—The Housing of the Working Classes Committee recommended:—

(*a*) That the supplemental estimate of expenditure on capital account of 632*l.*, submitted by the Finance Committee in respect of the erection of 110 cottages on the third part of sect. B of the Norbury Estate, to cover the additional cost of providing administrative buildings on the estate, be approved.

(*b*) That the offer of Messrs. F. & T. Thorne to undertake the work of erecting administrative buildings on the third part of sect. B of the Norbury Estate in place of converting the existing clerk of works' office into a five-roomed cottage, in consideration of an additional payment of 580*l.*, be accepted.

The consideration of the matter was adjourned.

Epileptic Colony.—It was agreed that, subject to the approval of the necessary plans by the Home Secretary, the estimate of expenditure on capital account of 13,304*l.*, submitted by the Finance Committee in respect of the erection and equipment at the epileptic colony of two additional villas (one for fifty male and the other for thirty-eight female patients), and a general bathroom, and of extending the accommodation for staff in the administration block and equipping the additional accommodation thus provided, be approved.

Trade School for Girls.—It was agreed that the estimate of expenditure on capital account of 1,350*l.*, submitted by the Finance Committee in respect of the erection at the London County Council Hammersmith School of Arts and Crafts (Hammersmith) of a building for the accommodation of the trade school for girls, be approved.

St. Michael's C.E. School, Wandsworth.—The Managers of St. Michael's C.E. school intend to enlarge the school by providing accommodation for 500 additional children.

Black List for Contractors.—The Improvements Committee recommended the acceptance of the tender of Messrs. Dick, Kerr, & Co., 29,705*l.* 11s. 9d., for work in connexion with Deptford Creek bridge. The Committee proposed that the tender should be accepted "subject to the contractors giving preference in employment on casual or unskilled labour to men *bonâ fide* resident in the county of London."

Mr. P. C. Simmons moved an amendment that the preference clause should be in the following terms:—"When taking on workmen for the purpose of this contract preference shall be given to men who are *bonâ fide* resident or usually employed in London, and that if the contractor shall make wilful default in giving such preference, the Committee shall report to the Council with a view to the contractor being placed on the list of firms from whom the Council will not accept tenders." Mr Simmons pointed out that it would not be right to give the preference to residents, for this would shut out men in the border, whom the Council had enticed out of the county of London by means of trams and cheap dwellings. He also contended that the preference should be for skilled as well as unskilled workmen.

Mr. Shirley Benn seconded the amendment.

Mr. Reynolds said the result of this preference would be to have Paddington work reserved for Paddington men, and then it would come about that the work of one particular street would be reserved for the men who dwelt in that street. Moreover, this preference was a double-edged weapon, as it would result in London men being excluded from work out of London.

Mr. Gosling urged that the Council should have a special clause applicable to all contracts, as these differently worded clauses for different contracts were becoming bewildering.

Lord A. Thynne, Chairman of the Committee, accepted the amendment proposed by Mr. Simmons, remarking that he had undoubtedly improved upon the phraseology of the clause which was put forward by the Committee. A form of words had been devised which, if it did not provide them with a final solution of this difficult and complex problem, did undoubtedly carry them a step in this direction. With regard to penalty clauses, if the Council inserted the most drastic of penalties in the clause, it would be no more able to recover such penalty in a court of law than it was to-day able to recover any penalty attached to the hours of labour and rates of wages. It was possible, for breach of contract, to recover an agreed sum for liquidated damages, but he understood the Council could not recover a penalty. To recover a sum for liquidated damages it was necessary for the

Digitized by Google

Council to prove that it had sustained damage. Neither by breach of this clause, nor in respect of breaches of clauses dealing with hours and wages, was it possible for the Council to prove that it had suffered damage. The amendment, however, dealt with the matter, for it gave the Council the power to place on the black list those contractors who did not observe the clauses. There could not be a more efficacious penalty than this. This provision would induce all contractors to meet the wishes of the Council contained in the clauses.

Mr. W. S. M. Knight inquired who was to decide what was "wilful default" on the part of the contractor? The clause inflicted a grave injustice on the contractors, on the workmen, and on the Council.

Mr. Howell Williams described the proposal as simply a window-dressing device for party purposes. The real truth was that contractors wanted their men to be as near the work as possible. They would always prefer men living on the spot than to bring in men from outside. The suggested clause was humbug, inasmuch as it meant nothing. In the interest of contractors themselves it was essential that they should get the best men they could obtain in a district.

Sir John MacDougall said he did not see why such a clause should be limited to one contractor. His policy was free trade in this matter. Restriction would be bad for London.

Mr. Simmons's amendment was carried, the tender of Messrs. Dick, Kerr, & Co., being accepted subject to the clause specified in the amendment.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1909.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1909. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Dulwich.—Buildings on the site of Nos. 5, 7, 9, and 11, Denmark-hill, Dulwich (Mr. F. J. Slater for the Camberwell Borough Council Charity Estate).—Consent.

Hackney, Central.—Buildings on the site of Nos. 173 and 175, Lower Clapton-road, Hackney (Messrs. J. Hamilton & Son for Mr. F. Sharman).—Consent.

Hackney, North.—A building on the south-eastern side of Craven-walk, Hackney, to abut upon the north-eastern side of Ashstead-road (Mr. S. H. Barclay).—Consent.

Hampstead.—A porch in front of a house known as "The Turret," Frognal, Hampstead (Mr. S. C. Lathbridge for Mr. E. P. Musmann).—Consent.

Islington.—A projecting sign in front of No. 290, Holloway-road, Islington (the Brilliant Sign Company, Ltd., for Farrow's Bank, Ltd.).—Consent.

Kensington, South.†—A covered way in front of No. 72, Bedford-gardens, Kensington (Messrs. Wheeler Brothers for Mr. W. L. Bradbury).—Consent.

Lewisham.—Porches and barge-boards to five houses on the eastern side of Perry-hill, Catford (Mr. A. R. Westworth for Mr. A. Cooper).—Consent.

Marylebone, East.—A stone doorway and two balconies on the Harley-street frontage and a projecting doorway and chimney breast on the Weymouth-street frontage of Nos. 90 and 90A, Harley-street, St. Marylebone (Mr. S. J. Tatchell for Mr. C. E. Peczenik).—Consent.

Strand.†—An illuminated globe sign upon the shelter in front of the Empire Theatre, Leicester-square (Mr. T. J. Digby for the Directors of the Empire Theatre).—Refused.

Wandsworth.—Bay windows, porches, balconies, barge-boards, sham half-timber work, and wooden mouldings to three houses on the western side of Thrale-road, Streatham, northward of No. 33 (Messrs. E. & A. Wates).—Consent.

Wandsworth.—The retention of porches to eight houses on the northern side of Wyatt Park-road, Wandsworth, and the erection of porches to six houses on the northern side of Wyatt Park-road, and eight houses on the western side of Daysbrook-road (Messrs. J. S. Quilter & Son for Messrs. Chapple & Utting).—Consent.

Wandsworth.—One-story shops in front of Nos. 1 to 25 (inclusive), the Boulevard, Balham High-road, Wandsworth (Mr. H. Branch for Mr. Willcocks).—Consent.

Width of Way.

Haggerston.—A building on the southern side of Canal-road, Haggerston, at less than the prescribed distance from the centre of the roadway of the street (Messrs. Lovegrove & Papworth for Messrs. Lewis & Towers).—Consent.

Width of Way, Line of Frontage, and Projections.

Kensington, South.—The retention of an iron and glass covered way at the entrance to No. 3, Duro-place, Victoria-road, Kensington (Miss F. A. Lee).—Consent.

Width of Way, Line of Frontage, Projection, and Construction.

Rotherhithe.—Two projecting balconies at King and Queen Wharf, Rotherhithe-street, Bermondsey (Mr. F. Hooper for Bellamy, Ltd.).—Consent.

Width of Way and Alteration of Buildings.

Westminster.—A one-story addition at the rear of No. 5, Queen Anne's-gate, Westminster, to abut upon the western side of Carteret-street (Mr. W. Vaux Graham).—Consent.

Deviations from Certified Plans.

Holborn.—Deviations from the plan certified by the District Surveyor, so far as relates to the proposed re-erection of No. 46, Red Lion-street, Holborn (Mr. F. S. Chesterton).—Consent.

Space at Rear and Projections.

Marylebone, East.—The re-erection of No. 65, Harley-street, St. Marylebone, with the rear portion on the space at the rear, and with an open porch in advance of the flank abutting upon New Cavendish-street (Mr. C. W. Ferrier for Mr. G. Corderoy).—Consent.

Cubical Extent.

City of London.—Addition at the premises of the *Daily Chronicle* newspaper next to Hanging Sword-alley, City, and an iron and glass enclosure to an external iron staircase next to Hanging Sword-alley (Edward Lloyd, Ltd.).—Consent.

Marylebone, East.—Deviations from the plans approved for the erection upon the site of Nos. 308 to 320, Oxford-street, and Nos. 21 to 24, Old Cavendish-street, St. Marylebone, of a building with divisions exceeding 250,000 cubic ft. in extent, such deviations principally consisting of (i.) the formation of openings on the basement, ground, and first floors of larger size than is specified in sect. 18 of the London County Council (General) Powers Act, 1908, and (ii.) the provision of double steel shutters to such openings (Mr. J. Murray).—Consent.

Uniting of Buildings.

Bow and Bromley.—Rolling steel shutters in lieu of iron doors on one side of party wall openings at the Crown Chemical Works, Three Mills-lane, Bow (Mr. R. C. Fry).—Consent.

City of London.—The uniting of No. 127, Cheapside and No. 129, Wood-street, City, by openings at the first and second floor levels (Mr. T. H. Smith for Messrs. Woolley, Sanders, & Co.).—Consent.

Finsbury.—A deviation from the plans approved in respect of the means of escape in case of fire as regards the uniting of two warehouses at the premises of Messrs. Perry & Ray, Goswell-road, Finsbury, at the basement and ground floor levels (Mr. S. W. Neighbour for Messrs. Perry & Ray).—Consent.

Hampstead.—The formation of an opening 11 ft. wide by 11 ft. 6 in. high, in a division wall at Nos. 191 to 217, Finchley-road, Hampstead, such opening being fitted with double steel roller shutters (Messrs. J. Laycock & Bellamy for Messrs. J. Barnes & Co.).—Consent.

Marylebone, East.—The uniting of Nos. 153-162, Oxford-street and No. 2, Winsley-street, St. Marylebone, and the use of steel roller shutters to the openings (Messrs. J. Belcher and J. J. Joass).—Consent.

Marylebone, West.—The uniting of blocks I. and II. of Durrant's Hotel, George-street, St. Marylebone, by means of a lobby at the ground floor level (Mr. J. Hudson for Mr. A. Gibson).—Consent.

Line of Frontage, Cubical Extent, and Uniting of Buildings.

St. George, Hanover-square.—Construction of a steel water-tower in connexion with a building to abut upon Grosvenor-road, Caledonia-street, and Glasgow-terrace, St. George, Hanover-square (Messrs. Mather & Platt, Ltd., for Messrs. Clayton & Black).—Consent.

The recommendations marked † are contrary to the views of the metropolitan borough councils concerned.

WHITE JAPAN.—A sample of a white enamel paint, sold under the name of "Endelline," has been sent to us. This paint is manufactured in England by Messrs. Thos. Parsons & Sons, of Endell-street, London, and appears to be of the best quality. The dry paint has a hard, glossy, and perfectly white surface.

Architectural Societies.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

Before the members of the Leeds and Yorkshire Architectural Society, Park-street, Leeds, on the 25th ult., a lecture on "An Unknown Italian City" was given by Mr. Martin Shaw Briggs, Mr. Percy Robinson, President, in the chair. The lecturer said his subject—Lecce—was the capital of the province forming the heel of Italy. This district was entirely neglected by tourists, and it was only by chance that he was enabled to visit it in the spring of 1907. On that occasion he was accompanied by Mr. Ralph W. Thorp (Assistant Hon. Secretary to the Society), whose excellent drawings had subsequently appeared in an architectural paper. He (the lecturer) found valuable material at Lecce, historical as well as architectural, and decided to write an illustrated monograph of the district under the title of "In the Heel of Italy." It was from the chapter of this work dealing specially with architecture that he drew the substance of his lecture. Mr. Briggs pointed out the influences at work in Italy, and especially in the southern portion of the country, which contributed to produce a remarkable architectural period in this remote city. Referring to the suitability of the term "baroque" as applied to the architecture of this period, he compared its characteristics in Lecce with those in better-known cities, and urged the rare charm of a complete baroque city. Examples of the middle of the XVIth-century architecture in Lecce varied from a comparatively pedantic type to an extravagance of grotesqueness far from pleasing, but in a later period a more settled style became noticeable, and it was to this epoch that the city owed the majority of its buildings. The details of this phase of architecture were noticed and some account given from contemporary writers, illustrating life in Lecce during the early XVIIIth century. At the close a cordial vote of thanks was, on the motion of Mr. W. H. Thorp, seconded by Mr. A. E. Kirk, accorded to Mr. Briggs. In proposing, Mr. Thorp remarked on the tendency of much of the work now being carried out in Rome to follow on the lines of the later baroque, while Mr. S. D. Kitson accredited the lecturer with having entered a strong plea for this much-maligned style, a sentiment which was approved by the majority of those present.

ABERDEEN ARCHITECTURAL ASSOCIATION.

A meeting of this Association was held in the Northern Arts Club recently, Mr. James B. Nicol, the President, in the chair. Mr. James S. Mellis read a paper on "The Painting of a House," and after giving a short historical sketch of the subject, leading up to the practice of the modern house painter, the different materials in use, their nature and manufacture were described, as were also their cheaper substitutes and adulterations. To illustrate the temptations placed in the way of the painter who secures the work by submitting a low tender, prices were quoted showing that materials can be bought at one-twelfth of the cost of the genuine article, which, after being mixed up, can scarcely be detected even by an expert; and in dealing with the preparation of the walls the lecturer also showed how the work may be scamped. The wood finishings of a house were often specified by architects to be stained and varnished throughout. From top to bottom, without regard to the use or position of the rooms, he recommended that, for the better parts, doors, etc., should be painted to harmonise with the decoration of the walls and the furnishings. A discussion followed, in which the President, Messrs. Arthur Clyne, J. A. O. Allan, H. F. David, and others took part.

Digitized by Google

THE BUILDER

DECEMBER 4, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19*s.* per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21*s.* 6*d.* per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26*s.* per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, DECEMBER 3.

Glasgow Architectural Craftsmen's Society.—Mr. A. Smith on "The Restoration of a Newfoundland Cathedral." 8 p.m.

Institution of Mechanical Engineers.—An extra meeting, when the discussion will be resumed on Mr. Herbert A. Humphrey's paper on "An Internal-Combustion Pump, and other Applications of a new Principle." 8 p.m.

SATURDAY, DECEMBER 4.

Edinburgh Architectural Association. — Associates' morning visit to Messrs. A. Ballantine & Son's Glass Staining Works, 42, George-street.

Aberdeen Architectural Association.—Mr. H. B. Barr on "Reinforced Concrete," illustrated. 7.30 p.m.

MONDAY, DECEMBER 6.

Surveyors' Institution.—Mr. C. P. Hall on "Direct Payment of Rates." 8 p.m.

Society of Engineers (Room 18, Caxton Hall, Westminster).—Mr. C. H. W. Biggs on "The Mechanics of Dust." 7.30 p.m.

Liverpool Architectural Society.—M. C. H. B. Quennell on "The Development of Suburban Building Estates." 6 p.m.

TUESDAY, DECEMBER 7.

University Extension Guild (British Museum).—Lectures on "Ancient Architecture," by Mr. Banister Fletcher. X.—"Greek Ionic Temples." 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy."—VIII. 6 p.m.

Institute of Sanitary Engineers (Students' Lecture).—Mr. A. J. Martin on "Sewage Disposal." 7 p.m.

WEDNESDAY, DECEMBER 8.

The Royal Sanitary Institute.—Discussion to be opened by Mr. J. S. Brodie, M.Inst.C.E., Borough Engineer, Blackpool, on "The Collection and Disposal of House Refuse." 8 p.m.

Edinburgh Architectural Association.—Mr. F. Morley Fletcher, Director, Edinburgh College of Arts, on "Materials and Treatment in Wall Decoration." Lantern slides. 8 p.m.

Northern Architectural Association.—Paper by Mr. J. W. Simpson, entitled "With Share and Mattock." 7.30 p.m.

THURSDAY, DECEMBER 9.

Institution of Electrical Engineers.—Messrs. L. J. Lepine and A. R. Stelling on "Methods and Practice in the German Electrical Industry." 8 p.m.

Society of Architects.—Mr. Raymond Unwin on "Town Planning." 8 p.m.

Leeds and Yorkshire Architectural Society.—Mr. Butler Wilson on "Cuthbert Brodrick," the Architect of the Leeds Town Hall. 6.30 p.m.

FRIDAY, DECEMBER 10.

The Architectural Association.—Mr. F. C. Eden on "Varallo, Orta, and Varese." 7.30 p.m.

Association of Water Engineers (fourteenth winter meeting, Geological Society, Burlington House, W.).—(1) "Reservoir Outlets," by Mr. George N. Yourdi, M.Inst.C.E.; (2) "Evaporation from Water Surfaces," by Mr. Sidney R. Lowcock, M.Inst.C.E.; (3) "A Sterile Boring in the Inferior Oolite (Somersetshire)," by Mr. William Phelps; (4) "Ferro-Concrete as Applied to Waterworks Construction," by Mr. Harry W. Taylor, Assoc.M.Inst.C.E.; (5) discussion on paper presented at the summer meeting, entitled "Public Water Supply for Fire Extinguishing," by Mr. C. W. S. Oldham, Borough Water Engineer, Ipswich. 2 p.m.

SATURDAY, DECEMBER 11.

Association of Water Engineers.—Fourteenth winter meeting (concluded). 10.30 a.m.

Incorporated British Institute of Certified Carpenters (Carpenters' Hall, London Wall, E.C.).—Annual general meeting, when the report and balance-sheet will be presented and the officers and Council for the coming year will be elected. 6 p.m.

The Institution of Municipal Engineers.—A general meeting, to be held at Caxton Hall, Westminster. Adjourned discussion on the Report of the Examination Committee. The following short papers will be presented for discussion:—(1) "Superannuation and Security of Tenure," by the President; (2) "Sludge Disposal," by Mr. W. C. Easdale, M.S.E.; (3) "Short Methods of Calculation for Checking Reinforced Concrete Works," by Mr. E. Fiander Etchells, F.Phys.Soc., M.Math.Assoc., A.M.I.Mech.E. 11 a.m. A dinner will be held in the evening at the Gaiety Restaurant, Strand, W.C., at seven o'clock.

Fifty Years Ago.

FROM THE *Builder* OF DECEMBER 3, 1859.

PROGRESS OF EDUCATIONAL ART.

IT is gratifying to us to see how large and important institutions are recognising the principles we have advocated with regard to the teaching of drawing in Form and Colour. It is impossible that, when drawing is now becoming a part of the education of poor children, those above them in the social scale can long remain ignorant of it. And in consequence we remark how these public schools which are inclined to keep up with their age have already admitted drawing into the curriculum of their studies; and have admitted it, not as an *accomplishment*, but as a *necessity*. We do not consider the periodical visits of a mere drawing-master as a fair specimen of earnestness in the matter of drawing. Every parent knows of the wonderful productions of his child, if he happens to have a "genius"—of a boy or girl; when the portfolio is brought from school, and the works of the "genius" are spread out before admiring and astonished spectators—fresh from the finishing touches of the drawing-master, though erroneously supposed to be the work of the "genius,"—the duped parent regards them as ample return for the "little bill" for materials and instruction. The proud parent is astonished at his child's productions, but the child itself is really the more astonished of the two.

This kind of educational drawing has been well defined as "drawing-masters' drawing of the picturesque pig-stye style." It is valueless. If we are to make drawing general, and develope latent taste, the first thing to be done is to get rid of this kind of instruction. Our eyes and hands must be exercised to see accurately the true forms of objects, and to reproduce them in a systematic manner. There are as accurately defined steps of producing a representation of a form by means of drawing, as there are methods by which certain results are arrived at by means of arithmetic. Yet, though the knowledge of arithmetic we possess is valuable to us, the fact of our possession of it does not make us qualified to teach arithmetic, systematically, and in the best manner, unless we have been specially educated to teach it. The same law holds good with regard to drawing. The trained teacher, who is familiar with all styles of drawing, who knows from long experience the difficulties to be met with, and the precise method of overcoming them; who will lead us along the straightest path, and strengthen us in our weakest steps,—this is the man who will give us the best instruction. Until very lately such men have not been in existence, because drawing has been confused with high art, as a special inspiration, only to be acquired by the possessors of genius.

*** We need hardly observe that the principle of teaching drawing here advocated—the careful observation and delineation of *form*, as the groundwork of artistic training is that which is now universally followed in our art-schools as well as in the teaching of drawing at general schools.—ED.

Illustrations.

PART OF THE PARTHENON FRIEZE.

THIS is a reproduction from a fine drawing by Mr. J. E. Platt, a student of the Royal College of Art, of two or three of the figures from the frieze of the Parthenon, the most perfect instance in existence of the use of sculpture as a portion of architectural decoration, for in this respect the frieze is more distinctly architectural, in its relation to the building, than either the tympanum or the melope sculptures. These are rather to be regarded as high-relief figures (in the tympanum they are actually in the round) framed by portions of the architectural structure; whereas the frieze is, in a much more intimate sense, part of the wall itself, and represents sculpture architecturalised into union with the building.

In the composition of lines and the treatment of the drapery the group represented in Mr. Platt's drawing is one of the most beautiful portions of the work.

DESIGN FOR GLAMORGAN COUNTY OFFICES.

IT is one among the advantages of architectural competitions that we sometimes get very fine architectural compositions for study and enjoyment even from designs which, from whatever cause, have not been accepted for execution.

This is the case with the drawing illustrated here. It represents a portion of the design made by Mr. Robert Atkinson in competition for the Glamorgan County Offices about a year ago. We presume that it was not one of the competition drawings, but is a composition showing a portion of the proposed building, a piece of modern Classic architecture seen against a background of trees; a combination which is always effective.

There is one detail, probably owing its origin to French influence, which we do not like, viz., the appendages, like the ends of tied-up garlands, hanging out of circular openings in the frieze. Detail of somewhat the same kind is to be seen in the Palais des Arts on the Champs Elysées, as well as in one or two recent buildings in London, and as a decorative detail is not to our thinking either beautiful or significant. But as a whole this is a very fine piece of design, and was one of the most effective drawings in this year's Royal Academy.

CHURCHILL COTTAGE HOMES, SOMERSET.

THE Churchill Cottage Homes were built in the Cheddar Valley, Somerset, by the late Mr. Sidney Hill, whose object was to provide twelve comfortable homes for the deserving poor. In addition to a completely furnished house, each occupant of these homes is given a sufficient weekly sum for maintenance, a perpetual income of 400*l.* a year being set aside for this purpose under the endowment scheme administered by trustees.

The houses stand upon freehold land containing 1¼ acres, with a field upon the south having an area of 4 acres belonging to the trust, and reserved for ever as an open space; they are arranged in three sides of a quadrangle about 120 ft. square. The south side is enclosed by a low brick terrace wall coped with stone and ornamented with carved stone vases, and in the centre is a gateway with wrought-iron gates giving access to the working gardens with which each occupant is provided. Stone paved walks run round the four sides of the quadrangle, the south walk being terminated

Digitized by Google

at each end with a large arbour arranged under the main roof, which is supported by oak posts and balustrades, each arbour containing suitably designed oak seats and tables. The quadrangle has a low brick parapet walls running entirely round it, with stone steps leading down to the lawn and flower borders; these are sunk some 2 ft. 6 in. below the level of the stone paved walks, and in the centre is a large stone sundial with decorative features in lead, and having a spreading base of brick around which is an oak seat.

Flower borders are arranged upon each side of the walks in the quadrangle, and many beautiful rose-trees and creepers have been planted against the houses and arbours.

The quadrangle faces south and commands a most beautiful view of the Mendip Hills, which at this point are well wooded. The north side is separated from the road by a forecourt 200 ft. long and 50 ft. deep and about 5 ft. above the road level, having lawns and walks with flower borders and trees; and adjoining the road is a terrace wall of brick with large stone vases and rich entrance gates of wrought iron approached by a flight of steps from the road.

The north, east, and west sides of the houses are symmetrically designed with gables and recessed arbours having oak posts and arches. The doorways throughout are constructed of oak frames and arches with oak doors, those in the quadrangle having moulded heads supported by richly carved corbels. The walls are of sand-faced brick with handmade red tile roofs, the window frames being of oak, with iron casements and lead light glazing. The stone, which is sparingly used, is from the Guiting Quarries, and its rich yellow tint harmonises well with the warm tones of the walls and roofs. Each house has upon the ground floor a living-room and bedroom, with a small scullery, larder, etc., and upstairs is another bedroom and a large storeroom. The houses are self-contained and free from the usual excrescences at the back; there are, in fact, no backs at all as generally understood, all the elevations being equally important.

Over the principal entrance to the quadrangle is a large room for the use of the trustees, reached by a spiral stone staircase. This room is panelled to a height of 7 ft., and has a stone fireplace and windows at each end, on which are the coat-of-arms of the founder.

The "Worker" grates adopted for the living-rooms are set in golden-brown bricks with raised hearths of the same material. The bedroom grates have green tiles surrounds and tiled hearths, and all the fireplaces have simple oak mantels. A guard fender is provided for each living-room, and bells enable each house to communicate with the others in case of emergency. All the houses are completely furnished with substantial oak furniture designed by the architects in harmony with the general style of the homes.

In carrying out the work every endeavour has been made to obtain and preserve throughout the old-world character and quiet charm attaching to the many fine old groups of houses of this kind scattered throughout the country, and with this end in view no detail, however unimportant in itself, has been deemed worthy of attention.

In the north-west corner of the site and adjoining the road a matron's cottage had been built, containing two sitting-rooms, a kitchen, three bedrooms, and a bathroom; and in the south-west corner a small but fully equipped laundry has been provided and built, together with other necessary outbuildings.

The actual cost of the buildings, exclusive of the cost of land and expenses in connexion with their erection, amounted to 11,000*l.*, and the furniture of the homes, the trustees' room, the matron's cottage, etc., amounted to a further sum of 1,915*l.* The gardens and planting cost about 900*l.* more.

The architects are Messrs. Silcock & Reay, of Bath. The drawing was exhibited at the last Royal Academy.

Legal Column.

What are "Minerals"?

The House of Lords have had to consider the question in the case of North British Railway Company *v.* Budhill Coal and Sandstone Company, whether under the terms of a lease and the Railways Clauses Consolidation (Scotland) Act, 1845, sandstone was a "mineral." The respondents were lessees from the appellant railway company with a right to work "the freestone metals and all other minerals within a depth of 120 ft. from the surface." The 70 section reserves from the railway company buying land "any mines of coal, ironstone, slate, or other minerals," and the point to be decided was whether under this section sandstone was a "mineral" which the respondents would be entitled to work under the railway, subject to the provisions as to notice, etc., contained in the Act. The two Scotch Courts had held that it was a "mineral," but the House of Lords reversed their decisions, holding it not to be a "mineral."

The case is of unusual importance since the discussion that has taken place in the House of Commons on the Finance Bill on the inclusion of "minerals" in that Bill without any special definition. It will be remembered that the Chancellor of the Exchequer maintained that any definition was unnecessary, since the word had been clearly interpreted in the Courts and would have the same meaning in the Finance Bill. A perusal of the judgment delivered by the Lord Chancellor—the judgments of the other Lords forming the House not yet having been reported—will show that this is not the case even when the word has to be construed in a definite connexion as in conveyances and under the Railway Clauses Consolidation Acts, for having carefully reviewed the decided cases he finds that the cases are contradictory, that no one principle can be extracted, and that it would be quite unprofitable to expect a solution by piecing together the dicta of even the most eminent authorities. The sandstone in this case was the common rock of the district, and the House of Lords held that therefore this would not be included, the section indicating some exceptional substance. The Court of Appeal, in Great Western Railway *v.* Carpalla United Clay Company (the *Builder*, July 10) had to consider the same question, and seems to have come to a somewhat similar conclusion, but that case is also under appeal.

One very important point in connexion with the Finance Bill arises in considering the judgment now delivered. It will be remembered that after much discussion the following substances were in Clause 20, sub-clause (5) excepted from the Bill. "Common clay, common brick clay, common brick earth, or sand, chalk, limestone or gravel." but the Chancellor of the Exchequer declined to exempt granite, building stone, or road stone. In the review of the legal decisions by the Lord Chancellor it will be seen that the Lord Chancellor considers the cases decided in the years 1818 to 1841, before the passing of the Railways Clauses Acts, of the greatest importance in interpreting these Acts, and that in 1818 in the case Menzies *v.* Breadalbane the House of Lords decided that building stone did not fall within the reservation in a lease of "haill mines and minerals of whatever nature and quality." Having regard to this decision and many others cited in the judgment, it may be a question whether the exceptions now introduced into the Finance Bill may not operate in an exactly contrary way to that intended, the exemption of certain substances will lead to the inclusion of all substances not specially excepted, whereas if the matter were left at large it would be arguable that the decided cases applied to the Finance Act.

River Pollution.

Some very important questions were involved in the protracted litigation that has arisen in the case of Attorney-General *v.* Birmingham, Tamworth and Rea District Drainage Board. The action was brought by the Attorney-General at the relation of the Tamworth Corporation and the Rural District Council to restrain the Drainage Board from polluting the River Thame by allowing imperfectly purified liquid to pass into the same. The defendants were constantly improving their sewage works, but at the time of the trial it appears that, in time of flood at any rate, the river was polluted within the meaning of sect. 17 of the Public Health Act, 1875, and the Court granted an injunction. The defendants appealed, but at the time when the appeal came up for hearing the improvements being carried out by the defendants were not completed, and the hearing was adjourned for six months. Again when the appeal came on for hearing it was stated that in consequence of the report of the Royal Commission on Sewage Disposal stand-by tanks to receive storm water were being provided, and the appeal again stood adjourned. When it again came on for hearing, there being considerable conflict of expert testimony, the Court appointed Sir W. Ramsay to report whether the sewage effluents were such as to deteriorate a river of the character of the Thame at the point of entry and 600 yds. therefrom, and he reported in the negative. Two questions had then to be decided by the Court of Appeal—I. Was sect. 17 an absolute prohibition against conveying impure water into the river at all, or must the liquid be of such a character only that it would not deteriorate the purity and quality of the water? II. Could an injunction originally rightly de reed be discharged except by consent?

Sect. 17 provides that the sewer, drain, or outfall shall not be made, or used, to convey sewage or filthy water into any natural watercourse, etc., until such sewage is freed from all excrementitious or other such foul matter "as would affect or deteriorate the purity and quality of the water in such stream." The court held this was not an absolute prohibition against conveying filthy water into any stream, the nature of the stream must be regarded, and whether the quality of the water discharged into it polluted it or not. On the evidence of Sir W. Ramsay, the court held the character of the water of the stream was not deteriorated. In discharging the injunction the court intimated that they were going further than in any previous case, but an order was drawn up stating that owing to the defendants' permanent works, the state of things existing at the trial was altered, and that now there was no breach of the section, and on the defendants giving their undertaking to use their best endeavours to prevent a recurrence of the breach, the injunction should be discharged, but liberty was given to apply to the Court to enforce this order.

Road Authorities and Railways.

We have frequently noted cases on the liabilities of railway companies as to the roadways over bridges and the approaches thereto, and the latest case on the subject is a decision of the House of Lords, Rhondda Urban Council *v.* Taff Vale Railway. A bridge had been erected by the railway company over their railway to carry a public carriage way under powers conferred upon them by a private Act of the year 1846, which incorporated the provisions of an earlier private Act, 1836, "except so far as the same are inconsistent with the Railway Clauses Consolidation Act, 1845." The road at the time the bridge was constructed was narrow, in some places not more than 12 ft. wide, the road over the bridge was 18 ft., the limit in the Act of 1846 being 15 ft.

Digitized by Google

The carriage road had since been widened to a width exceeding 25 ft., but the approach to the bridge from this widened road was about 50 ft. Two questions were involved—I. Whether the private Act of 1846 applied, or whether under the Railway Clauses Consolidation Act 1845, sects. 50 and 51, the railway company were compellable to widen the roadway over the bridge? II. Whether that liability extended to the approaches? As regards the first point, the House of Lords held that the provisions in the private Act, that the roadway should not be less than 15 ft., were not inconsistent with the provision in sect. 50 of the Railway Clauses Act that the road over the bridge shall be 25 ft., and that the latter Act applied. As regards the second point, the House held that in this section the word "bridge" indicated the bridge proper, *i.e.*, where it intersects the line and the slopes and embankments, and not the approaches. In the two cases noted by us, Attorney-General *v.* Midland Railway (the *Builder*, December 26) and Hertford County Council *v.* Great Eastern Railway (the *Builder*, June 5) the question was the repair of approaches, and one was decided upon a private Act, and the other with reference to the common law.

REVOCATION OF PATENTS.

A recent decision of the Comptroller-General of Patents appears to raise one or two interesting points. The owners of the English patent were the Di Dion Bouton (1907), Ltd., and the patent related to mechanism in connexion with explosive engines. It was admitted that there was no manufacture here, but it was alleged that the patent was no longer used for practical purposes, and that the patented parts were only used in certain small stationary machines, and that as it could only be used in conjunction with engines of a complicated type that it would have been useless to set up a manufacture in this country since 1908. The applicants for revocation admitted the first allegation, but urged that the patentees had abused their monopoly rights as they acted only as distributors and not manufacturers, and as the importation of the French machines except through them was an infringement of their rights they were enabled to bring actions against innocent importers of French cars not purchased through them. The Comptroller held that any abuse of the monopoly must be connected with the non-working of the patent here and that the action of the patentees had not precluded the manufacture here. The demand was for the French engine, and it was by no means certain that there was a demand for the patented article apart from the French engine. With some reluctance the Comptroller dismissed the application. The case seems to show that when the patented article only forms part of a complicated machine manufactured abroad the Patent Act has little effect in encouraging manufacturers here. There was some evidence that had the patent been worked small Di Dion machines might have been imported and industry encouraged here by the manufacture of supplementary parts and bodies for cars. As it is, without any manufacture here, the patentees are able for the purposes of their own agency to restrain the importation through other sources of French cars, a course which the Comptroller said was within their legal rights.

GROWTH OF SYDNEY.—In the report of the Master Builders' Association of New South Wales to the Federated Association, read at the conference, the following figures in connexion with building operations were given:—In 1907 the new buildings were 4,256; in 1908 they were 4,268 (assessed annual value, 197,834*l.*). It is estimated that the total amount of money spent in the city and suburbs on buildings during 1908 was approximately 4,000,000*l.* The Government is calling, or is about to call, for tenders for 400,000*l.* worth of work in four buildings in the city and suburbs.

Competition News.

TOWN HALL, OLDHAM.

The Oldham Town Council has resolved to extend the Town Hall, but the competition for designs is limited to architects residing in the borough. At the meeting of the Finance Committee held on the 25th ult. the Borough Surveyor reported that he had received a communication from an architect residing outside the borough stating he had an office in Oldham. The Town Clerk held that if he had an office and paid rent and rates, although he resided outside the borough, he would be eligible for the competition. Councillor Ward pointed out that the plans had to be in by next February, and an architect might evade the condition by taking an office in the borough for three months.

NEW SCHOOL AT ACTON.

At the meeting of the Acton Education Committee on November 25 the School Management Committee brought up a report in regard to a proposed school at Rothschild-road, with accommodation for 850 children. They proposed that the school should be an infant and junior mixed school, with two floors, each with nine classrooms, and the cost would be about 13,000*l.* It was further recommended that the appointment of architects be thrown open to competition. The Chairman (Mr. G. R. Parkinson) suggested that the same plan be adopted with regard to this school as was carried out in respect to the Municipal Buildings—that was to advertise for plans in competition. He also was of opinion that the cost of the building should be limited to 10,000*l.* After discussion the following motion, moved by the Chairman, was carried:—"That plans be advertised for, and prizes offered of 100*l.*, 50*l.*, and 25*l.* each, the winner to be determined by the President of the Royal Institute of British Architects, or some other suitable person to be agreed upon by the Committee; that the architect's commission be 3½ per cent., and that the cost of the buildings shall not exceed 10,000*l.* for 850 scholars."

Trade Catalogues.

We suppose we must class the book of executed designs in "Leadwork," sent to us by Mr. G. P. Bankart, under this heading, as it is a set of specimens of work executed, but it might be more properly called an art catalogue, for everything in it is artistic from beginning to end. The author has evidently studied old decorative leadwork thoroughly, and his modern designs shown here for the decorative treatment of spentheads, cisterns, and other objects commonly made in lead, are as good as ancient work, and might indeed pass for a set of illustrations of old examples. Anyone who wants decorative leadwork carried out in a truly artistic spirit cannot do better than go to Mr. Bankart.

We have received from Messrs. Young & Marten two handy catalogues entitled "Leading Lines," and numbered 10 and 11. The first, of sixty-four pages, deals with drain-pipes, slates, tiles, cements, and other structural materials; fencing, doors, and other joinery; glass, metals, and plumbers' goods; colours and varnishes; nails, wire, hoop-iron, and soil and rainwater pipes. The second catalogue contains 216 pages, and deals with cooking ranges, grates, and chimney-pieces, sanitary fittings, ironmongery, gas and electric-light fittings, and electric bells. Taken together the catalogues have a wide range, and will prove very useful to the builder.

Messrs. Fredk. Braby & Co. have sent us a copy of their new catalogue dealing with copper and zinc roofing, ventilation, etc. It is divided into five sections. The first contains illustrations of domes, spires, and other kinds of roof covered by the firm with zinc or copper, including the domes at the new Sessions House and at Messrs. Thos. Cook & Son's offices in London, and turrets, spires, etc., on various provincial buildings. Perhaps the important examples of zinc roofing are those on the pier pavilions at Southsea, St. Anne's-on-the-Sea, and Great Yarmouth. Section II. contains illustrations of various patterns of zinc and copper tiles, and of roofs covered with them. Patent glazing is dealt with in section III.; the methods shown have undercloaks and caps of zinc or copper made to fit on rebated wood bars or on steel tees. Section IV. contains a few examples of ventilating turrets, shafts, Tobin tubes, etc., and section V. illustrates some moulded and enriched cornices and curbs of stamped zinc, copper, or galvanised-iron.

Messrs. Pilkington Brothers of St. Helens send us a small pattern-book of different designs of their figured rolled glass for glass partitions which are to obscure the view without obstructing light. Some of these patterns are in very wide use at present. In glass of this kind it is well not to attempt too much in the way of pattern, a very simple diaper founded on an agreeable repeated form is the best. Those called "Japanese," "Persian," and "Oceanic" in the catalogue attempt rather too much for the situation. The really good ones are the "Shell," the "Arabesque," and the "Chequered"; the "Kaleidoscope" is also a good one. The "Rippled" may have a good effect in execution too, though it is hardly to be called a pattern.

"Margewood Locks" have sent us a copy of their catalogue of lever locks on the "Margewood" principle. In an ordinary lever lock a stump is attached at one end only to the tail of the bolt, and moves along slots in the levers when the key is turned, the bolt, of course, moving with the stump. In the "Margewood" lock the stump is attached at both ends to the case of the lock, and the tail of the bolt is slotted in the same way as the levers; the levers, instead of being pivoted to the case as in the ordinary lock, are pivoted into the head of the bolt; the result of this arrangement is that, when the key is turned, the bolt and levers together move over the fixed stump. This method of construction is certainly an improvement on the ordinary method. The catalogue contains numerous illustrations of locks for tills, cupboards, drawers, safes, etc., and of mortise locks (both upright and horizontal), rim locks, night latches, etc., for doors. The same method of construction is also used in padlocks and mastership locks.

BOOKS RECEIVED.

HOW TO WRITE THE HISTORY OF A PARISH. By the Rev. J. Charles Cox, LL.D., F.S.A. Fifth edition, revised. Pp. 208. (George Allen & Sons. 3s. 6d.)

THE EVOLUTION OF ITALIAN SCULPTURE. By Lord Balcarres. Pp. 342. (John Murray. 21s.)

ENGLISH LEADWORK; ITS ART AND HISTORY. By Lawrence Weaver, F.S.A. Pp. 249. (B. T. Batsford. 25s.)

THE CATHEDRALS AND CHURCHES OF BELGIUM. By T. Francis Bumpus. Pp. 295. (T. Werner Laurie. 6s.)

RELICS AND MEMORIALS OF LONDON CITY. By James S. Ogilvy. Pp. 256 and sixty-four coloured plates. (Geo. Routledge & Sons, Ltd.)

TIPI ORIGINALI DI CASETTE POPOLARI, VILLINI ECONOMICI, ED ABITAZIONI RURALI. By Ing. I. Casali. Pp. 404. (Ulrico Hoepli; Milan. Lire 5·50.)

THE YOUNG CARPENTER. By Cyril Hall. Pp. 275. (Methuen & Co. 5s.)

MEMORIALS OF OLD STAFFORDSHIRE. Edited by Rev. W. Beresford, D.D. Pp. 271. (George Allen & Sons. 15s.)

THE ARTS AND CRAFTS OF ANCIENT EGYPT. By W. M. Flinders Petrie. Pp. 151. (Edinburgh: T. N. Foulis. 5s.)

IN ENGLISH HOMES. Edited by H. Avray Tipping, F.S.A. Vol. III. Pp. 443: numerous photographs by C. Latham. (Offices of *Country Life*. 42s.)

MANUSCRIPT AND INSCRIPTION LETTERS. By Edward Johnston. Portfolio of sixteen plates. (John Hogg. 3s. 6d.)

EROSION OF THE COAST AND ITS PREVENTION. By F. W. S. Stanton, A.M.Inst.C.E. Pp. 68. (The St. Bride's Press. 3s.)

Correspondence.

THE BIRKENHEAD BUILDING MISHAP.

SIR,—Our attention has been called to an article in your issue of the 13th inst. referring to a mishap in connexion with some building operations at Birkenhead, in which you refer to "a patent bar which is supposed by some people to provide a royal road to design."

As it is known that our "indented bars" were used in the structure in question, the obvious inference from your article (and one that has to our knowledge been drawn therefrom) is that this company is not expert in reinforced concrete construction.

The facts of the case are that neither was the design for this work prepared by us nor the erection supervised by us. Furthermore, before we executed the order for the indented bars we gathered that the design had not been modified in accordance with

some important suggestions we had made, and consequently we at once pointed out that if the work were carried out using the bars given in the order we had received "the responsibility for the design must rest with the consulting engineer on his own responsibility, and in no sense as a design issued by this company."

We would merely add that we entirely agree with you as to the absolute necessity for proper design, supervision, and workmanship in all reinforced concrete work, and that the use of any particular form of reinforcing bar cannot obviate the necessity for them.

THE PATENT INDENTED STEEL BAR COMPANY, LTD.

*** We never intended, of course, to imply that the use of the "indented bar" was in itself the cause of the accident.—ED.

LONDON AND PROVINCIAL BUILDERS' INFORMATION CENTRE.

[COMMUNICATED.]

BUILDERS are reminded that the period for becoming original subscribers at the reduced rates is now drawing to a close and that all who intend becoming subscribers and who have not up to the present sent in their subscription card should do so with as little delay as possible.

The following are typical questions received and answered by the Centre, which demonstrates in a practical manner one of the services offered to subscribers:—

(1) *Question from Builder.*—We have recently bought at a sale a quantity of asphalt blocks, and wish to use same in filling cavity walls, but find we cannot heat it sufficiently to cause it to run freely. Can you suggest anything? *Centre's Answer.*—This difficulty can easily be got over by adding to each copper of asphalt about a pint of boiled oil. This will cause it to run freely without impairing its setting properties.

(2) *Question.*—Can you inform us where we should be likely to obtain light wrought-iron roof trusses, about 30 ft. to 35 ft. span, second-hand? *Answer.*—We believe the contractors for the clearing of the London County Hall site have a number of these, resulting from the demolition of the old buildings, which no doubt could be bought at about half cost. Apply to Messrs. ——.

(3) *Question.*—We understand that good cement mortar can be made in the proportions of five sand to one of cement, and that these proportions are actually used in London. Is this so? *Answer.*—Yes, this is a fact, and we believe H.M. Office of Works have in some cases specified these proportions. There is no doubt the result is excellent if care is taken to thoroughly incorporate the cement and sand in the dry state.

(4) *Question.*—We are quoted 17s. 6d. for 1¼ deal grooved and tongued flooring on rail in London. Can you give us an easier price for this, for, say, 70 squares? We also inclose bulls from quantities for asphalt, artificial stone, and white glazed wall tiling. Please deal with these, and return by the 13th inst. *Answer.*—The first quality deal we cannot, as there is a scarcity of this class in the market, but for a slightly inferior quality it can be got at 16s. 6d. per square, at which price it will be put on rail by Messrs. ——. Bulls herewith duly priced by the firm signing same.

(5) *Question.*—Can you give us the name of the manufacturer of slate ridging that does not require either screws or nails for fixing? *Answer.*—The only ridging we know of answering your description can be got from Messrs. ——, and is known as ——. Particulars enclosed.

(6) *Question.*—Please let us know by return the mesh of expanded metal generally used for lining ceilings, etc., for plaster, and the price on rail in London for 600 yds. *Answer.*—Messrs. —— do not supply this direct, but any of the leading builders' merchants would do so. The mesh to be used is ¾ in. for hairless plaster and ⅜ in. for hair plaster, and the prices f.o.r. London quoted by the merchants for 600 yds. respectively are 11d. and 9½d. per yard.

(7) *Question.*—The architect agrees to a substitution for white marble steps specified, so long as it is somewhat similar. Can you tell us of anything, but it must, of course, be vastly cheaper? *Answer.*—We would suggest ——, supplied by Messrs. ——, which is a substance comprising an outer casing of real marble on a concrete backing, and works out at —— less in cost. Particulars enclosed.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on November 25 the following, amongst other matters, were dealt with:—

Wardour-street Widening.—The Finance Committee reported having received sanction for the borrowing of 3,000*l.* for defraying part of the expense of widening Wardour-street.

Waterloo-place.—The City Engineer was instructed to carry out the necessary paving and other works for widening the carriageway of Waterloo-place, between Charles-street and No. 6, Waterloo-place. The whole cost of the works is estimated to be 1,000*l.*

Suggested Improvement at Victoria.—A letter was received from Mr. Pocock, of Wandsworth-common, suggesting an improvement in the vicinity of Victoria Station, and stating that the spot was a veritable death-trap to the people who used the thoroughfare. His suggestion was to sweep away the Windsor Castle public-house and adjoining shops; also the Shakespeare public-house and the entire block of buildings over the underground station, make a "rest" in the middle of the road, and give the public the benefit of the view of Victoria Station. He further suggested that a statue of Queen Victoria should be placed on the "rest" facing down Victoria-street towards the Houses of Parliament.—It was decided to take no action in the matter.

Warwick-street.—A letter was also received from a number of residents in Warwick-street complaining of the excessive use of the street by motor 'buses. They pointed out that the street was paved with wood in 1888, and continued in excellent order for fifteen years, but that within eight months of the coming of the 'buses it was cut to pieces, and had to be relaid; that it had been under constant repair, and showed signs of breaking up again.—It was agreed to communicate with the omnibus companies on the matter.

THE INTERNATIONAL MAP OF THE WORLD.

THE International Conference, whose labours are now practically ended, have unanimously drawn up a report for the construction of a map in accordance with the general recommendations mentioned in our "Note" of November 20, p. 545 *ante*. The subcommittees have since agreed to adopt the hypso-metrical method for colouring and for indicating the surface features, to draw the contour lines in brown at intervals of 100 metres or decimal multiples or submultiples of 100 metres, with intervals of from 200 to 7,000, or more, metres for the higher altitudes; the intervening spaces being tinted green for the lower altitudes and brown of various shades, and other tints, up to 7,000 metres. A blue tint, becoming darker with the depth, will denote the sea; all other waters will be blue. Special symbols will indicate inland waters, and roads, railways, boundaries, etc. The spelling of place names will be that which prevails in every independent country or self-governing dominion, or that of the governing country in the case of colonies or protectorates—using the Latin alphabet. For transcription of names from non-Latin alphabets a code of special rules will be framed. Nearly all the sheets will cover 4 deg. in latitude by 6 deg. in longitude.

We have made some calculations which may be of interest at this juncture to our readers. As the scale of the map is to be 1:1,000,000, or very nearly 16 miles to 1 in., we find, assuming that a degree at the Equator has a mean length of 69·06 miles and that the mean diameter of the earth is 7,930 miles, that the map, if wholly completed, with the oceans also to scale, would require a globe of nearly 42 ft. in diameter for its entire display on the round. Each of the sheets, 2,700 in all, would embrace a maximum area of 276 miles by 414 miles at the Equator, and whilst all areas between the same parallels of latitude will be equal, that area will gradually diminish towards the Poles by reason of the convergence of the meridians. But the number of sheets will be a little less than 2,700, as some in the far zones, north and south, will be joined to cover 12 or more degrees of longitude. The Great Globe in Leicester-square, designed by H. R. Abraham for J. Wyld, contained a model of the earth to a ground scale of 11 miles to the inch, 60 ft. in diameter, made of plaster, laid on a frame of iron ribs.

LONDON AND DISTRICT BOROUGH COUNCILS.

Chelsea.—The Works and General Purposes Committee have considered a circular letter from the London County Council in regard to the case of Kershaw *v.* Brooks, in which it was held that the owner of premises and not the builder or contractor employed by him was liable for infringement of drainage by-laws. The Committee point out that in Chelsea drainage works are not usually carried out under the London County Council by-laws, but under an order of the Council made in pursuance of the provisions of sect. 76 of the Metropolis Local Management Act, 1855. This section provides that seven days' notice shall be given to the Council "by the person intending to build . . . or to make such drain," and the Council are required to make their order and to notify the same "to the person from whom such notice was received." Therefore the difficulty to which the London County Council call attention does not arise in Chelsea.

Deptford.—The following plans have been passed:—Mr. A. Roberts, four houses, Rokeby-road; Messrs. Hills & Sons, Ltd., additions to their soap and candle works in Frankham-street; Messrs. Maynard Brothers, rebuilding five houses, Martha-place, Briant-street; Messrs. J. & H. Robinson, Ltd., flour millers, additions to their premises in Church-street; Messrs. J. & A. Oldman, additions to the British Colour Printing Works, Briant-street; Mr. T. D. Leng, additions to St. Peter's Hall, Cranfield-road; Mr. F. A. Todman, additions to the Galen Manufacturing Works, Wilson-street; Messrs. Rogers & Corrington, factory in Bolina-road.

Hackney.—Plans have been passed as follows:—Messrs. J. Hamilton & Son, buildings on site of Nos. 171, 173, and 175, Lower Clapton-road; Mr. D. Morris, six shops and houses, Stamford Hill, northward from Amhurst Park; Messrs. Fair & Myer, skating-rink on site of Nos. 137 and 147 (inclusive), Lower Clapton-road; Mr. Percy Roche, sixteen houses, Castleward-road, and twenty-eight houses, Moundfield-road, northward of Ravensdale-road; Messrs. F. & H. F. Higgs, block of dwellings, Sylvester-road, and another block of dwellings, Pigwell-path.

Hendon.—The Hendon Rural District Council has passed plans for Mr. A. B. Champniss for ten pairs of houses, Southfield-Park, Pinner; and for Mr. Ronald Townley for seven houses on the Townley Estate, Paines-lane, Pinner.

Hornsey.—Plans have been passed as follows:—Messrs. Fair, Myer, & Marshall, Furnival-street, E.C., pavilion and skating-rink in Stroud Green-road, Finsbury Park; Mr. Gerald M. Horder, 21, Old Queen-street, Westminster, three blocks of flats in Campsbourne-road, two blocks of flats in Newland-road, and one block of flats in Myddleton-road, Hornsey. The following plans have been lodged:—Messrs. F. A. Coleman and H. Holmes, North Finchley, laying out the Halliwick Manor Estate, Muswell Hill, also building on Lightcliffe House Estate, Tottenham-lane, Hornsey; Messrs. E. A. E. Woodrow & H. J. Helsdon, 6, Raymond-buildings, Gray's-inn, W.C., cinematograph exhibition hall in Duke's-avenue, Muswell Hill; Messrs. Carl Zeiss, optical instrument makers, 29, Margaret-street, E.C., first block of large factory adjoining Mill Hill Barracks on the Bittacy House Estate.

Hounslow.—The following plans have been lodged with the District Council:—Mr. A. J. Buckingham, four shops and houses, Heston-road, Lampton, also iron workshop, Market-place, Heston-road, Lampton; Mr. H. Osborne Grice, workshop, 192, Staines-road, Hounslow; Mr. J. Easterbrook, three houses, New Heston-road, Heston.

Ilford.—The District Council have passed plans as follows:—Mr. H. Hollins, four houses, 69-75, Coventry-road; Mr. L. Cameron, iron schoolroom at rear of Unitarian church.

Lambeth.—Dumbarton-road is to be made up, at an estimated cost of 1,380*l.* The Council have passed the following plans:—Messrs. Sheppard & Co., six houses, Clovelly-road, Upper Tulse-hill; Mr. Thos. Kingsman, five houses, Norwood-road; Mr. James Wilson, six houses, Royal-circus, and six houses, Broxholm-road, West Norwood.

Leyton.—The following plans have been passed:—Mr. W. R. Lawrence, conversion of No. 696, High-road, Leytonstone, into electric theatre; Mr. A. Radcliffe, addition to factory, Carlisle-road. The Surveyor has been instructed to prepare plans and estimates for an underground convenience at Leytonstone.

Marylebone.—Electric lighting works are to be carried out at the Town Hall, at an estimated cost of 137*l.* 200*l.* is to be spent in the construction of four refuges in Cavendish-square. Plans have been lodged by Messrs. Wright & Co. for five shops at the corner of Wellington-road and Wellington-place.

Stepney.—The Borough Council has granted an application from Mr. H. Chestort, the Surveyor to the Bridewell and Bethlem Royal Hospitals Estate, for permission to let a 6-in. pump main from the factory of Messrs. Paton & Charles, High-street, Wapping, to No. 122. Messrs. Paton & Charles are to enter into occupation of the latter premises. The Borough Surveyor is to reconstruct sewers in Buxton-street and Worcester-street, at an estimated cost of 165*l.*, and is to repave the carriageway of Pigott-street and Buxton-street with asphalt at an estimated cost of 470*l.* Plans have been approved:—(1) For Mr. E. J. Gosling, for a building in Brook-street, Ratcliffe, abutting upon Cranford-street and Bere-street; and (2) for Mr. W. E. Wallis, for a block of buildings on the north side of Shorter's Rents, at the corner of Glasshouse-street, Whitechapel.

Walthamstow.—The following plans have been passed:—Mr. A. G. Barton, six houses,

Beech Hall-road; Mr. H. H. Iles, four houses, Aveling Park-road; Mr. A. P. Jordan, public hall, rear of 87, High-street; Mr. J. W. Dunford, addition to warehouse; Mr. W. G. Fuller, factory, Station-road.

Wandsworth.—The following tenders have been accepted for paving in lieu of tenders previously accepted and afterwards withdrawn:—Langside-avenue, Putney, Messrs. E. Parry & Co., 714*l.*; Welham-road, Streatham, Messrs. E. & E. Iles, 1,309*l.*; Wyatt Park-road, Streatham, Messrs. Harringdon & Co., 1,468*l.* For other paving works the successful tenderers were:—Esparto-street, Springfield, Messrs. Harringdon & Co., 361*l.* (Borough Engineer's estimate, 392*l.* 19s.); portion of Guelph-street, Springfield, Messrs. S. Lane & Co., 526*l.* (Borough Engineer's estimate, 545*l.* 17s.). The following plans have been passed:—Mr. R. Tilbury, seventeen houses, Heybridge-avenue, Streatham; Mr. C. F. Newman, three houses, Rostella-road and Thurso-street, Tooting; Mr. W. Darnell, five houses, Calbourne-road and Mayford-road, Balham; Mr. R. A. Jewell, addition to works of the Voelker Lighting Corporation, Ltd., Garratt-lane, Fairfield; Mr. W. J. Janes, three houses and shops, Mitcham-lane, Streatham; Messrs. E. Evans & Sons, thirteen houses, Fircroft-road, Balham.

Wimbledon.—Messrs. E. & E. Iles, North-road, Wimbledon, are to make up Farquhar-road, the contract price being 334*l.* The following plans have been passed:—Mr. T. Eaton, eleven houses, Stanton-road; Mr. J. C. Walker, conversion of 131, 133, and 135, Haydon's-road into shops. The following plans have been lodged:—The Ideal Bioscope Entertainment Company, alterations to No. 1, Russell-road; Mr. A. Mansel, music-hall, Merton-road; Mr. B. A. Boyton, seven houses and one shop in Laburnum-road; Mr. E. W. Evans, thirty-one houses, Dora-road.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDEEN.—Rescue home (2,000*l.*); Messrs. Kelly & Nicol, architects, 367, Union-street, Aberdeen.

Aberltefenni (Merionethshire). — School; architect, care of Mr. H. H. Jones, Secretary, Merionethshire Education Committee, Towyn.

Acrefair.—School; Mr. W. D. Wiles, architect, 42, High-street, Wrexham.

Aldershot.—Slaughter-houses; the Borough Surveyor, Town Hall, Aldershot.

Armagh.—Bank buildings; Messrs. R. Currey, Ltd., builders, 106, University-street, Belfast.

Biddulph.—Hall (1,700*l.*); Trustees, P.M. Congregational Church, Biddulph.

Bracoden.—School; Gamrie School Board, N.B.

Brighouse.—Salvation hall (2,000*l.*); Mr. A. Gordon, architect, 95, Queen Victoria-street, E.C.

Bronant (Cardigan).—School (1,200*l.*); Mr. J. D. Lewis, architect, 49, Parade, Aberystwyth.

Brymbo (near Wrexham).—School; Mr. W. D. Wiles, architect, 42, High-street, Wrexham.

Burslem.—Skating-rink (2,000*l.*); Mr. E. T. Watkin, architect, Swan Bank, Burslem.

Capel Bangor (Cardigan).—Additions to church; Mr. W. Bassett, architect, Terrace-road, Aberystwyth.

Clown.—Additions to parish church (2,300*l.*); Rev. J. Waugh, Clown.

Consett.—Skating-rink; Mr. J. Stephenson, builder, Consett.

Cowbit.—Methodist church; local U.M. Trustees.

Cradley (Worcester).—Chapel and school; Trustees, Colley Gate U.M. Church, Cradley.

Cramon, N.B.—Restoration of parish church (2,550*l.*); Messrs. Mitchell & Wilson, architects, 13, Young-street, Edinburgh.

Crewe.—Police-station (3,000*l.*); Mr. H. Beswick, architect, Newgate-street, Chester.

Dinnington.—Skating-rink; Secretary, Dinnington Roller Skating Rink Company, Ltd.

Downpatrick (Ireland).—Additions to workhouse; the Guardians.

Eccles.—The Town Council has passed the following plans:—Seven houses, Cecil-street, for Mr. W. Hanson; shop, Thorp-street, Peel Green, and shops and cottage, Lewis-street, Patricroft, for the Eccles Provident Industrial Co-operative Society, Ltd.; skating-rink, Corporation-road, for the Eccles Roller Rink Company, Ltd. A plan has been lodged by Mr. Ashworth Hamer, for four houses, Boardman-street, and three houses and shops, Barton-lane.

Edinburgh.—Masonic temple (10,000*l.*); Mr. W. A. Carter, architect, 14, Queen-street, Edinburgh.

Elland.—Residence (1,100*l.*); Mr. F. T. Beaumont, architect, Southgate-chambers, Halifax.

Glasgow.—Skating-rink, Summerfield-street (3,000*l.*); Mr. J. Lindsey, architect, 248, West George-street, Glasgow.

Gosport.—Skating-rink; Secretary Gosport Skating Rink Company.

Grassmarket (Edinburgh).—Women's home (12,000*l.*); Mr. J. Hamilton, architect, 212, St. Vincent-street, Glasgow.

Guiseley.—Residence (1,500*l.*); Mr. H. Chippendale, architect, Guiseley.

Haverfordwest.—Drill hall (2,000*l.*); Mr. H. T. Thomas, architect, 9, Victoria-place, Haverfordwest.

Hazlehurst.—Co-operative premises; Moorside Co-operative Society, Ltd.

Heston and Isleworth.—Two semi-detached villas, Thornbury-avenue, Spring-grove; Mr. H. Jackson, builder, Osterley Park Station Estate, Hounslow.

Keighley.—Engine-house, etc. (1,100*l.*); Mr. A. Harrison, architect, Highfield-lane, Keighley. Residence, Skipton-road (1,200*l.*); Messrs. W. H. and A. Sugden, North-street, Keighley.

Kenilworth.—Parish hall (1,700*l.*); Mr. H. Quick, architect, Hertford-street, Coventry.

Knowle (Yorks).—School; Mr. D. Lobley, architect, 58, Alexander-crescent, Dewsbury.

Liverpool.—Motor garage (2,000*l.*); Mr. O. Roberts, architect, Cook-street, Liverpool.

Manse (Wick).—Free church (1,400*l.*); Messrs. Gardiner & Miller, architects, 144, St. Vincent-street, Glasgow.

Medomsley.—Co-operative premises (2,500*l.*); Mr. G. T. Wilson, architect, Durham-road, Blackhill.

Merionethshire.—Alterations and additions to Croesan school (282*l.*); Mr. R. M. Lewis, builder, Penrhyndendraeth.

Middlesbrough. — Skating-rink, Park-road South; Park Acadia Rink Company, Middlesbrough.

Mountpottinger.—Co-operative stores; Mr. S. Stephenson, architect, 83, Royal-avenue, Belfast.

Newburgh. — Workmen's dwellings; Mr. D. S. Ross, builder, Newburgh.

Oswestry.—Skating-rink; Mr. E. B. Smith, architect, Oswald-road, Oswestry.

Oxford.—Education offices; Mr. S. Stalland, architect, New-road, Oxford.

Paisley.—Works for Messrs. Doulton's, Ltd. (3,000*l.*); plans by Messrs. Doulton's, Ltd.

Pendleton. — Additions, Seedley Castle Laundry, Ellor-street.

Pentre Broughton.—School; Mr. W. D. Wiles, architect, 42, High-street, Wrexham.

Pontnewynydd.—New mills; Pontnewynydd Galvanising Company, Ltd., Pontypool.

Rotherham.—The Town Council has passed the following plans:—Eleven houses, Blackburn, for Mr. W. Cooper; four houses, Hatherley-road, for Mr. H. James; three houses, Deepdale-road, for Mr. A. E. Rawson; four houses, Deepdale-road, for Messrs. Chas. Green's Sons; ten houses, Ewers-road, for Mr. W. Earnshaw; two-story warehouse and weigh office, Holmes Mills, for Messrs. J. J. Habershon & Sons.

Rowsley.—Church; Mr. D. Wildgoose, architect, Matlock.

Ruislip-Northwood.—The Urban District Council has passed the following plans:—Three houses, Cheney-street, Eastcote, for Mr. C. Perrins; four houses, Roy-road, for Mr. W. T. Johnson.

Sale.—New tower, St. Paul's Church (1,500*l.*); the Vicar.

Salford.—Proposed public conveniences in Trafford-road, Ordsall Park (3,560*l.*); Borough Surveyor.

Sandbach.—School; Mr. R. Beswick, architect, Newgate-street, Chester.

Shotley Bridge.—Hall; Trustees of the Wesleyan Church.

Sidmouth.—Manor-house (3,000*l.*); Mr. J. Skinner, builder, Sidmouth.

Skipton.—Business premises (1,300*l.*); Mr. J. W. Broughton, architect, 12, High-street, Skipton.

Sligo (Ireland).—Additions to hospital workhouse; Clerk to the Guardians, Sligo, Ireland.

Slough (Bucks).—Alterations to isolation hospital; Surveyor to the Urban District Council, High-street, Slough.

Tamworth.—Children's receiving home; the Guardians.

Tanfield Lea.—Church; Mr. J. Phillipson, architect, 8, Grainger-street, Newcastle.

Thorne.—Secondary school (5,000*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Toddington.—School (1,700*l.*); Mr. O. C. Drewer, builder, Kettering.

Trimdon Grange.—School; Messrs. Makepiece & Vallas, builders, Trimdon.

Wallsend.—Laundry (1,500*l.*); Mr. L. G. Ekins, Co-operative Offices, Blandford-street, Newcastle.

Wheelock.—Wesleyan school (2,000*l.*); Mr. F. Beswick, architect, Newgate-street, Chester.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Cleaning School Interiors.—Tenders as follows were recommended:—

Bethnal Green.—Cranbrook-road: Woollaston Bros.	£297	16
Bow and Bromley.—Knapp-road: A. E. Symes	285	0
Brixton.—Santley-street: Holliday & Greenwood, Ltd.	207	0
Camberwell, N.—Credon-road: H. Groves	436	10
Scarsdale-road: H. Line	317	0
Southampton-street: Rice & Son	212	0
Dulwich.—Heber-road: W. J. Mitchell & Son	334	0
Finsbury.—Ann-street: E. Triggs	249	0
Rotherhithe.—Keetons-road: H. Groves	540	0
Clapham.—Raywood-street: Rice & Son	141	0
Fulham.—Fulham Palace-road: J. & M. Patrick	192	0
Hackney.—Gayhurst-road: Woollaston Bros.	195	0
Northwold-road: F. Bull	186	0
Holborn.—Rosebery-avenue: Randall & Ball	160	0
Saffron-hill: Patman & Fotheringham	167	0
Tower-street: J. R. Sims	134	10
Hoxton.—Scrutton-street: G. Butters	146	13
Kensington.—"The Fox": W. R. & A. Hide	156	0
Lewisham.—Baring-road: L. Kazak	116	0
Wandsworth.—Brandlehow-road: J. & M. Patrick	177	0
Sunnyhill-road: W. Read	127	0
Whitechapel.—Buck's-row: F. & E. Davey	164	0
Woolwich.—Earl-street: E. Proctor & Sons	170	0
Fulham.—Ackmar-road: W. Johnson & Co., Ltd.	401	0
Hugon-road: W. Johnson & Co., Ltd.	214	0
Sherbrooke-road: W. Johnson & Co., Ltd.	328	0
Hackney.—Enfield-road: J. Grover & Son	310	0
Detmold-road: W. Silk & Son	267	0
Homerton-row: H. Whilmott	315	0
Mandeville-street: G. Butters	229	10
Haggerston.—Canal-road: J. Haydon & Sons	280	18
Hammersmith.—Ellerslie-road: S. N. Soole & Son	224	0
Islington, N.—Poole's Park: Stevens & Sons	283	0
Kensington, N.—Sirdar-road: A. & F. Polden	322	0
Wornington-road: T. Bendon, Ltd.	410	0
Lambeth.—Waterloo-road: F. Smith & Co.	281	15
Limehouse.—Broad-street: R. Woollaston & Co.	376	0
Newington.—Penrose-street: J. Garrett & Son.	256	0
Norwood.—Sussex-road: Holliday & Greenwood, Ltd	273	0
Peckham.—Choumert-road: T. Brown & Son.	211	0
Poplar.—Woolmore-street: H. C. Horswill	283	0
St. George-in-the-East.—Berner-street: R. Woollaston & Co.	331	0
St. Pancras, E.—The "Brocknock": McCormick & Sons, Ltd.	298	0
Carlton-road: Stevens & Sons	448	0
Haverstock-hill: Stevens & Sons	214	0
Princes-road: Stevens & Sons	253	0
Southwark.—Hatfield-street: F. Smith & Co.	269	15
Stepney.—Settles-street: H. C. Horswill	296	0
Baker-street: F. & E. Davey, Ltd.	237	0
Wandsworth.—Eardley-road: E. Orpin	273	10
Eltringham-street: W. Johnson & Co., Ltd.	290	0
Westminster.—The "Millbank": J. R. Sims	230	0
Woolwich.—Wood-street: Kirk & Randall	249	0
Mulgrave-place: Kirk & Randall	233	0
Bloomfield-road: E. Mills	297	0

Cow-lane, Rotherhithe.—Owing to withdrawal of an accepted tender one from Messrs. W. G. Cannon & Sons (477*l.*) for heating was recommended.

Improvements.—The following schemes were sanctioned:—

Bow and Bromley.—Knapp-road (I.)	£270	0
Monteith-road (I.)	86	0
Hackney.—Sidney-road (I.)	340	0
Benthal-road	225	0
Islington, S.—Richard-street	160	0
St. George-in-the-East.—Lower Chapman-street	234	0
St. Pancras, N.—Carlton-road	290	0

Open Fire Warm-air Stoves.—As the Carron Company's open fire warm-air stoves have been found very satisfactory for use in halls it is decided to add it to the list.

Obituary.

MR. HENNESSY.

The death is announced of Mr. M. A. Hennessy, of South Mall, Cork. Mr. Hennessy became a member of the Royal Institute of the Architects of Ireland in 1873, and designed several important buildings, with some private houses, in and around Cork and in the south of Ireland. He was the architect of the large cruciform church of the Holy Cross, Charleville, in the diocese of Cloyne, in the Gothic style, which is distinguished by a nave and chancel 136 ft. long—the nave having a main arcade of six bays, with massive shafts of Cork red polished marble, a high altar of Carrara marble, and a tower and spire rising to a height of 150 ft., 1902; the Monastery, Kinsale, 1896; the new church at Durrus, Co. Cork, with nave and chancel 101 ft. in length, aisles, and side chapels, 1900-1; a church at Kilcoe, 1902; the new parish church, Timoleague, Co. Cork, 1907-8; and the parish church, Charleville, recently completed. He also prepared the plans and designs for residences in Bandon and Castletownbere, and, for Mr. D. O'Sullivan, in Kinsale; and for Messrs. M. F. Lynch & Co.'s warehouses, with residential premises, in Main-street, Charleville.

Digitized by Google

General Building News.

ENLARGEMENT OF ST. CHAD'S CHURCH, FAR HEADINGLEY, LEEDS.

The foundation-stone was laid on the 27th ult. of an extension of St. Chad's Church, Far Headingley. The old chancel and apse have been taken down, and a new chancel, 40 ft. long by 24 ft. wide, an organ-chamber, and vestries for clergy and choir, are being built, thus extending the church further east by 24 ft. This alteration will give space for seventy-two additional seats in the nave and aisles, whilst the choir will accommodate forty. The contract is being carried out by Messrs. Wilson & Sons, of Headingley, from designs prepared in harmony with the original building by Messrs. J. Gibbons & Son, of Manchester. A new organ by Harrison & Harrison, of Durham, will be given by the widow and children of the late vicar.

U.F. CHURCH, GREENOCK.

The memorial-stone was recently laid of a new church for Mount Pleasant U.F. congregation, Greenock. The new church has been designed by Messrs. Stewart, Tough, & Alexander, architects, of Greenock.

HIGH SCHOOL FOR GIRLS, BISHOPS STORTFORD.

The foundation-stone of the new secondary building for Herts and Essex, at Bishops Stortford, has just been laid by Lady Evans, of the Herts Education Committee. The building is to be erected in Warwick-road, Hockerill, from plans prepared in competition by Mr. J. W. Fisher (Messrs. Talbot, Brown, & Fisher), of Wellingborough, by Mr. Joseph Day, of Bishops Stortford. Provision is made for an assembly hall to accommodate 170, dining hall for eighty, lecture-room for thirty, four classrooms for ninety, with laboratory, art-room, cookery-room, kitchen, principal's room, assistant's room, lavatories, and caretakers' lodge. The building will be built with local bricks, with Essex brick facings and stone dressings, the roof covered with Staffordshire tiles, the floors fire-resisting and laid with hard wood, and the walls plastered. The contract cost will be 5,746*l*. Mr. H. Unwin is clerk of the works for the Councils concerned.

THE NEW HIGHER GRADE SCHOOL, BANFF.

The School Board of Banff have resolved to proceed with the erection of new higher grade school buildings. The new school will occupy a site of about an acre in extent, to the north of the academy. Designed by Mr. Arthur Clyne, architect, Aberdeen, the school is planned as a one-story building on the central hall system, with entrances at the ends for boys and girls respectively, each with cloak-room and lavatory attached, and the several rooms grouped round the four sides of the hall. On the west side will be a laboratory, measuring 46 ft. long by 25 ft. wide, for the combined teaching of chemical and physical science; on the north side will be an art-room, on the east side four classrooms, and on the south side two classrooms. The hall, measuring about 60 ft. by 25 ft., will have an open-timbered roof. The cost of the building is expected to amount altogether to about 5,000*l*.

SCHOOL, LONGFORGAN.

A new public school has just been opened at Longforgan. The school is built of split-faced rubble, in local stone, and covered with blue slates. Accommodation is provided for 200 pupils. The architect for the building was Mr. James Findlay, Dundee.

SUNDAY-SCHOOLS, CATFORD, S.E.

Sunday-schools have been erected at the rear of the Wesleyan church at Rushey Green, Catford. The buildings consist of a large hall with gallery, and there are divisions with sliding partitions for classrooms. The builder was Mr. James Watt, of Catford, and Mr. H. Hopton, also of Catford, was the architect.

SCHOOLS, ACTON WELLS.

The new Acton Wells schools, which have been built off the Victoria-road, North Acton, at a cost of 17,345*l*., were opened a few days ago. The schools will accommodate three departments on three floors, and give accommodation for 1,124. The architects of the schools were Messrs. E. C. P. & H. Monson, of Acton.

NEW TECHNICAL WING, RUTHERFORD COLLEGE, NEWCASTLE.

A commemoration-stone of this annexe was laid on the 23rd ult. by Sir Ernest Shackleton. It is on the east side of the present building, with which it communicates on the first floor by a bridge. It comprises, on the ground floor, engineering, electrical and physical laboratories, and a classroom; and on the first floor three technical drawing-rooms and a classroom. The building, which is capable of being enlarged if required by additional stories, will have its own independent heating and ventilating systems. The materials are red brick, with diaper of darker bricks and terra-cotta dressings. The floors of the engineering and electrical laboratories are covered with patent jointless flooring, and those of the physical laboratory and ground floor classroom with wood blocks. The roof is a concrete flat, covered with asphalt. The contractors for the work are Messrs. Middlemiss Brothers, who are carrying out the building to the designs, and under the superintendance, of Messrs Oliver, Leeson, & Wood, architects, Newcastle.

CHURCH HOUSE, WREXHAM.

A new Church-house was opened at Wrexham on the 23rd ult. The scheme involves the expenditure of 18,000*l*., of which nearly 5,000*l*. has been spent on the Church-house. The structure is of Ruabon brick, with stone dressings, and built in the Gothic style. The frontage to Regent-street is 60 ft. in length, and the depth extends 100 ft. the greater part of St. Mark's-road. In the basement is a rifle range 80 ft. long, storage for chairs, and heating apparatus, and the ground floor comprises entrance hall, library, committee-room, and lecture hall. The latter is 65 ft. long and 35 ft. wide. Its seating accommodation is 450. The first floor contains a billiard-room and a clubroom. Accommodation for the caretaker is provided at the side of the building. Messrs. Prothero, Phillott, & Barnard, of Cheltenham, were the architects, and Messrs. W. E. Samuel & Son, of Wrexham, the contractors.

FREE LIBRARIES, CRADLEY HEATH, BLACKHEATH, AND TIVIDALE.

Free libraries have just been opened at Cradley Heath, Blackheath, and Tividale. The largest is that for the combined wards of Cradley Heath and Old Hill, and is erected in the large foreground to the Corngreaves Old School at the junction of Spinner's End and Reddall Hill-road; that for Blackheath and Rowley Regis wards is erected at the junction of the Ross-road and Yew Tree-lane; the Tividale Library is erected on a site adjacent to the Dudley-road. Upwards of 100 designs were presented to the Free Libraries Committee, and those of Messrs. Wills & Anderson, of Blomsbury-square, London, were accepted, and the buildings have been erected at Cradley Heath by Messrs. W. Willetts & Sons, Old Hill, and those at Blackheath and Tividale by Mr. William Cooper, of Blackheath. The actual cost of the building, without furniture, at Cradley Heath, is 2,646*l*. 14s. 5d.; at Blackheath, 1,738*l*. 10s.; and at Tividale, 714*l*. 11s. 10d.

CARDINAL NEWMAN MEMORIAL CHURCH, EDGBASTON.

A new church has been erected at Edgbaston to the memory of Cardinal Newman. Mr. Doran Webb, of Salisbury, is the architect. The style is a modified form of the early classical basilica, having nave and aisles, transepts, and sanctuary, but a barrel roof and dome have been substituted for the flat roof of San Martino. From the west wall to the back of the sanctuary the church measures 184 ft. long and 70 ft. 6 in. wide. The nave is 88 ft. long and 34 ft. wide, while from the floor to the centre of the ceiling the height is over 40 ft., the aisles being a little over half that height. A feature of the nave is a row of marble columns separating each aisle. They are of antique Breccia violet, and have been imported from the quarries at Serravezza. The internal stone for the fabric has been chosen to harmonise with the marble columns, and the external stone is Darley Dale. The present St. Philip's Chapel will become the new sacristy.—*The Times*.

PROPOSED EXTENSION OF LANCASHIRE COUNTY OFFICES.

A Local Government Board inquiry was recently held at Preston into an application of the Lancashire County Council for sanction to borrow 20,000*l*. for the extension of the County Offices. Mr. Cleaver, on behalf of the Council, stated that the accepted tender for the new buildings was 16,500*l*., or 1,000*l*. under the estimate, and the increased accommodation was required through more work being thrown on the County Council—the local collection of licence fees and the medical inspection of children. The education department had never been properly provided for, and half the new block would be devoted to this section. The departments which were housed in the old buildings also needed enlarged accommodation. Mr. Littler, the County Architect, also gave evidence.

VARIETY HALL, ABERDEEN.

A new variety hall, the Tivoli, is to be established in Guild-street, in the old theatre premises. The capital is 10,000*l*. An extensive scheme of reconstruction is to be carried out under the direction of Mr. Matcham, London.

PARISH HALL, KINGUSSIE.

A hall has been opened in connexion with the parish church of Kingussie. The hall is intended to accommodate from 300 to 400 people, but this accommodation can be added to by means of a revolving screen, which can throw workrooms and other apartments into the main body of the building. Lavatories, cloak and other rooms have been provided. The contractors for the work were:—Mason, Mr. James S. Macpherson; carpenters, Messrs. D. & M. Fraser; slater, Mr. Alexander Falconer; plumber, Mr. Hugh Ross; plasterers, Messrs. R. & L. Macpherson; painters, Messrs. Dunbar & Macpherson—all of Kingussie. Mr. Alexander Mackenzie, C.E., Kingussie, was the architect.

NEW BUILDINGS IN HULL.

The Works Committee of the Hull Corporation have approved the plans of the following:—Mr. G. Eckles, twenty-two houses, Hymers-avenue; Mr. W. Burnett, twelve houses, Goddard-avenue; Mr. J. W. Jordan, eight houses, Hardy-street; Mr. A. Winn, two houses, Marfleet; Mr. W. E. Wilkinson, two houses, Portobello-street; Mr. A. N. Whincop, fifteen houses, Devon-street; Garden Village, Ltd., two houses, Garden Village; Mr. J. H. Osborne, seventeen houses and one shop, Chanterlands-avenue.

TEMPLAR HALL, STRICHEN, N.B.

A hall has been built at Strichen in connexion with the Mormond Lodge of Good Templars. The building was erected from the designs of Mr. M'Robbie, architect, and the contractors were:—Mason, Mr. Andrew Cheyne, New Pitsligo; carpenter, Mr. J. W. Cassie, Strichen; plasterer, Mr. Charles Low, Strichen; plumber, Mr. Stewart, Fraserburgh; slater, Mr. Angus Gow, Strichen; painter, Mr. Stewart, Fraserburgh.

OPEN-AIR BATHS, GRAVESEND.

The Gravesend Town Council have approved a scheme for the erection of an open-air bath on the recreation-ground, at a cost not exceeding 2,000*l*. Mr. F. T. Grant, the Surveyor, has prepared the plans for the proposed work.

PROPOSED ADDITIONS TO REFORMATORY, LANGHO.

The House Committee of Langho Reformatory are effecting some improvements to the institution under their control. Mr. Littler, the County Architect, has prepared a scheme for converting the upper story of each home into a dormitory, capable of accommodating twenty-six additional women. There are six homes, and if each one were altered in the way suggested there would be provision for 156 additional beds. The estimated cost of altering each home, by the addition of a dormitory as suggested, is between 700*l*. and 800*l*.

PARISH COUNCIL OFFICES, BUCKHAVEN.

The Wemyss Parish Council have opened new offices at Buckhaven. The structure is of two stories, and is built of brick, and is harled, with red sandstone ashlar base and facings. The plans were by Mr. G. Charles Campbell, architect, Methil, and the cost of the buildings, including furnishings, will be about 1,600*l*.

PROPOSED HOSPITAL, HINDLEY.

A Local Government Board Inquiry was recently held at the Hindley Council Offices into a scheme for the erection of a new infectious diseases hospital, in Sandy-lane, for which the Council had asked the Local Government Board to sanction the borrowing of 8,300*l*., the estimated cost of the hospital. Mr. T. Robey, Clerk, then explained that the scheme comprised the following buildings:—Administrative block: Typhoid, eight beds; scarlet fever, twelve beds; observation, four beds; outoffices, comprising laundry, mortuary, stables, disinfector, ambulance, etc., discharging block. The Surveyor, Mr. O. P. Abbott, went into the details of the cost. He gave the cost of the structure itself as 5,319*l*., and the furniture 638*l*. 9s.

MOTOR GARAGE, BRISTOL.

The Bristol Tramways and Carriage Company have erected a motor garage in the Henleaze district. Mr. W. H. Watkins, of Bristol, was the architect, and the building comprises inquiry and clerks' offices, messroom, stores, etc., while the large garage gives accommodation for twenty vehicles. Messrs. W. Cowlin & Sons, of Stratton-street, were the contractors.

NEW BUILDINGS FOR UPPER RENFREWSHIRE.

At a meeting of the Buildings Committee for the First or Upper District of the county of Renfrew, it was intimated that plans had been lodged for the erection of the following buildings:—Double villa at the corner of Calderwood-road and Kilmarnock-road, Newlands, for Messrs. Train & Taylor, Dalmarnock Bridge, Rutherglen double villa in Southbraedrive, Jordanhill, for James Watson, 494, Crow-road, Partick, villa in Busby-road,

Digitized by Google

Giffnock for John Whitewright, 15, Carolside-gardens, Clarkston: two-story tenement in Beith-road, Elderslie, for William Storrie, Gleniffer View, Elderslie; and two double cottages in Kilmarnock-road, Newton-Mearns, for Messrs. Young & Pollock, 134, Main-street, Barrhead.

PROPOSED ADDITIONS TO GUARDIANS' OFFICES, COCKERMOUTH.

The Workhouse Committee of the Cockermouth Board of Guardians are considering plans for the erection of board-room, committee-room, pay-station, and lavatory at Grecian Villa. The plans have been prepared by Messrs. W. S. Scott & Co.

NEW BUILDINGS IN LONDON.

Rebuilding Union Bank of Scotland, Cornhill; Messrs. G. Trollope & Sons and Colls & Sons, Ltd., builders. Restaurant in Furnival-street, E.C., for Food Reform Company, Ltd.; Messrs. McLaughlin & Harvey, builders, 13, Brecknock-road, N.W. Shops and flats, Mitcham-lane, S.W.; Mr. Jas. Harding, builder, 123, Mitcham-lane, Streatham. Buildings, Balham High-road and Marius-street, S.W.; Messrs. Rice & Sons, builders, Stockwell. Buildings on site of Old Sergeants' Inn, Chancery-lane, W.C.; Messrs. Howell J. Williams, Ltd., builders, 11-17, Bermondsey-street, London Bridge. Business premises, Blackfriars-road, S.E.; Messrs. Fairhead & Co., builders, Enfield. Fifteen shops, Hendon-lane, Finchley, N.W.; Messrs. Taylor & Huggins, architects, Church End, Finchley. Iron building, Camberwell, for nurses' home; Mr. Mullins, architect, care of the Clerk to the Guardians. Factory, Mill Hill, N.W.; Mr. M. Prosser, architect, Lowood, Mill Hill, N.W. Block of buildings, Merton-road, S.W.; Mr. E. Mansel, architect, Parliament-mansions, Victoria-street, S.W.

PAROCHIAL HALL, ST. BARNABAS CHURCH, NEWCASTLE-ON-TYNE.

The foundation-stone of the new St. Barnabas Parochial Hall, which is to be erected on the site adjoining St. Barnabas Church, Goldspink-lane, Jesmond, Newcastle, was laid on the 27th ult. The hall is to be built in such a position as to leave enough ground for a vicarage adjoining the west end of the Terrace in Springbank-road. The cost will amount in all to about 1,950*l*. The plans were prepared by Mr. A. B. Plummer, Newcastle, and Mr. John Craven, Newcastle, is the contractor.

THE NEW CORDWAINERS' HALL.

The new hall which is being built for the Cordwainers' Company has a frontage to Cannon-street of 62 ft., and has a depth of 60 ft., or thereabouts, and is the sixth hall built upon the same site, the first hall having been built in or about 1393. The new building provides for an entrance to the hall premises at the western end of the site, leaving the rest of the frontage to Cannon-street, by a dept of over 30 ft., for letting purposes on the ground and basement floors. This part of the premises will be self-contained and quite distinct from the rest of the premises to be occupied by the Company. The entrance hall is octagonal on plan, and is to be finished in marble, and leads to an inner hall, from which the main staircase ascends to the upper floors. At the foot of this staircase cloakroom provision has been made, and an electric lift provided to serve throughout the premises. The mezzanine floor will contain a suite of offices for the use of the clerk of the Company, a large committee-room, and also an office for the beadle. The first floor will contain the court-room and the court reception-room, while on the second floor the large hall is situated. This hall will be 60 ft. in length by 32 ft. wide and 23 ft. high. On the top floor accommodation is provided for the beadle and a kitchen to serve the large hall. Internally the premises are to be fitted with oak on the main floors, the staircase being oak throughout, and the large hall is panelled in oak to a height of 20 ft., or thereabouts. Besides the main staircase a secondary service staircase is provided, fitted with electric lifts for quick service from all floors. The front elevation is treated in an English form of the Renaissance, with very little ornamentation. The front is dealt with in two heights, the lower being rusticated and containing two floors, the ground and mezzanine; and the upper portion containing the court-rooms and hall, where an Ionic Order is used, running through the two floors and terminating with an open balustrade. The entrance doorway is to be executed in grey polished Aberdeen granite. The whole of the premises are being built with fireproof construction, and will be heated with low-pressure hot water throughout. The builders for the works are Messrs. Ashby & Horner, and the building is being carried out from the designs prepared by the Company's Surveyor, Mr. H. Chatfeild Clarke, under whose personal supervision the works are being executed. Mr. W. Crossley is acting as the clerk of works.

TRADE NEWS.

At the Royal Palace Hotel and Empress Rooms, Kensington, a new fire-protective installation has recently been fitted up by Messrs. Merryweather & Sons in connexion with the Hydraulic Power Company's main. The main carries water at a pressure of 750 lb. to the square inch, and a special hydrant is provided by means of which the pressure at the discharging nozzle is reduced to a suitable pressure for fire-extinguishing purposes, such as can be readily withstood by ordinary canvas hose. Ten of these hydrants are provided on the various floors of the building, each fitted with 120 ft. of canvas hose and nozzle, enabling a fire to be promptly attacked at any point where it may break out. At a recent test a jet was brought into play on the roof, which is over 100 ft. from the ground, and it was found that the presure was ample for fire-extinguishing purposes. A special feature of the hydraulic hydrants is that they are each fitted with a relief valve, so that, in the event of the hose becoming kinked or twisted this valve automatically operates and prevents a burst hose resulting.

Messrs. Patman & Fotheringham have been successful in obtaining the contract for the alterations and reconstruction of No. 2, Seamore-place, Park-lane, W., under Mr. W. H. Romaine Walker, the architect.

The Brightside Foundry and Engineering Company, Ltd., of Sheffield, London, and Birmingham have recently secured the contract for the heating and hot-water service installation at the new Central Tramways Depôt, Shoreham-street, Sheffield, and also for similar work at Bradford Union Hospital. In both cases steam at atmospheric pressure will be utilised as the heating medium, in conjunction with special calorifiers for the supply of hot water.

The Berridge-street Schools, Nottingham, and the Fletton Technical School, Peterborough, are being heated and ventilated by D. O. Boyd's "Hygiastic" warm air ventilating grates, supplied by Messrs. O'Brien, Thomas, & Co., of London.

Messrs. E. A. Roome & Co. have secured the contract for the completion of St. John the Baptist Church, Holland-road, Kensington, under the supervision of Messrs. James Brooks, Son, & Adkins.

The extensions to the Wallsend and Willington Quay Fever Hospital are being warmed and ventilated by means of Shorland's double-fronted patent Manchester stoves, with descending smoke flues, and patent Manchester grates, supplied by Messrs. E. H. Shorland & Brother, of Manchester, who are also supplying similar grates to Haines Hospital, Ramsgate. The Empire Theatre, West Hartlepool, is being ventilated by means of the same firm's patent exhaust roof ventilators and inlet ventilators.

Sanitary and Engineering News.

NEW BRIDGE, DONCASTER.

A new bridge over the railway level crossing at Doncaster is now approaching completion. The new structure is 705 yds. long, against 710 yds., the length of the present road. The road on the north and south of the ironwork is carried on embankments and brick arches, there being eight arches on the north side and twelve on the south, with one span of steelwork over the approach to the Great Northern cattle dock. Over 4 million bricks have been used for the arches. The stanchions of the bridge are carried on concrete cylinders, which rest on the solid rock, reached at depths varying from 36 ft. to 52 ft. About 600 tons of steelwork is being used; 6,000 tons of material has been excavated, and 5,000 tons of concrete has been put in. The road is 50 ft. wide from parapet to parapet, and there is a 7-ft. footpath on each side. A double line of tramways is being put down. The cost of the scheme will probably be about 100,000*l*. Messrs. Arnold's contract was about 48,000*l*., but a good deal of property has had to be pulled down, and considerable amounts have been paid for compensation. Messrs. Parry & Bidder are the engineers.

PROPOSED DRAINAGE EXTENSIONS, ETC., OKEHAMPTON.

Mr. P. M. Crosthwaite, Inspector of the Local Government Board, held an inquiry on the 24th ult. at Okehampton into the application of the Town Council to borrow 591*l*. for market and street improvement purposes, and 4,300*l*. for sewerage and sewage disposal, including the execution of works in the parish of Okehampton Hamlets. Evidence in support of the scheme was given by the Town Clerk (Mr. J. J. Newcombe) and the Council's Surveyor.

NORTHALLERTON SEWAGE WORKS.

The contractors for the new system of sewage disposal at Northallerton are now constructing the necessary offices. The site of the works is adjoining Romanby Beck, about Romanby sewage works, and next to that first country lane on the right-hand side of the road from Romanby. The engineers are Messrs. Wilcox & Raikes. The cost is estimated to be between 11,000*l*. and 12,000*l*.

Stained Glass & Decoration.

MEMORIALS IN A CHESHIRE CHURCH.

Memorials to the late Mr. Peter Owen, one of the founders of the Parish Church of St. John the Evangelist, Great Sutton, have been erected in that church. The memorials take the form of an elaborately-carved chancel screen and altar rails of oak, and also a window and ornaments. The work has been designed by Messrs. Charles E. Deacon & W. P. Horsburgh, architects, of Liverpool, and carried out and erected under their supervision by Messrs. Harry Hems & Sons, of Exeter.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.

A partnership has been arranged between Messrs. W. F. Unsworth & Son and Mr. H. Inigo Triggs, A.R.I.B.A. The business will be carried on under the name of Unsworth, Son, & Triggs, in the offices hitherto occupied by Messrs. W. F. Unsworth & Son, at 16, Station-road, Petersfield.

THE BOARD OF EDUCATION PERSPECTIVE DRAWING.

We have received a circular from the Board of Education stating that it has been represented to the Board that the standard of difficulty of the papers in perspective recently set in the Board's art examinations is somewhat too high for students who do not require an advanced knowledge of geometrical perspective. The paper in perspective set for the Board's examination in 1909, for which two hours were allowed, consisted of two sections—(A) and (B). Sect. (A) contained questions involving the use of instruments and requiring accurate measurements for their solution. Sect. (B) contained questions testing the candidate's ability to apply the rules of perspective to the representation of objects, views of buildings, landscapes, etc., but not involving the use of instruments. With a view to meeting the difficulty indicated the Board propose to make certain changes in the form of the paper to be set in 1910. The division into two sections will be maintained, and the character of sect. (B) will remain unaltered. Sect. (A), however, will be divided into two parts, each containing two or three questions that require the correct use of instruments in drawing to scale. The first of these parts of sect. (A) will consist of questions of a simpler character than any of those set in sect. (A) of the 1909 paper. The second part will contain questions of the same standard of difficulty as those hitherto set. As in 1909, candidates will not be allowed to answer in all more than four questions, of which one, and one only, must be taken from sect. (A). The questions in the first part of sect. (A) being of a more elementary kind, will naturally carry lower marks than those in the second part.

THE FOUNDERS' COMPANY.

This Company is arranging to hold an exhibition (which will be opened by the Lord and Lady Mayoress) in London, on June 7 and 8 next year, of castings and models in metals, viz., aluminium, bronze, brass, gold, iron, and silver, also of designs in wood, plaster, and any other suitable material for casting, to be competed for by founders, designers, craftsmen, apprentices, and improvers who are British-born subjects engaged in foundry business or its allied trades. Money prizes as well as certificates and medals will be awarded.

FLOATING AWAY THE OLD BRIDGE AT COLOGNE.

The old road and railway bridge at Cologne connected with the main station, being unable to cope with the increased traffic, it was resolved to replace it with new and larger bridges. The difficulty in the undertaking lay in the fact that the old site was to be used, and neither road nor railway traffic was to be interrupted in the course of the work. The old

Digitized by Google

bridge consisted of two parallel bridges which independently served road and rail. The old two-track railway bridge is to be replaced by two two-track bridges, of which one is already built and in use. The old road bridge is to be replaced by one of a much larger section. In order to comply with the conditions the following programme was adopted:—On the completion of the first railway bridge, the traffic was diverted on to it, and the original rail bridge so arranged as to take the road and electric tram traffic. The original road bridge could then be destroyed This, however, was no simple matter, for at Cologne the river traffic is great, and forbade the use of fixed scaffolding. At the same time, the extremely short contract building period excluded a slow breaking-up process. It was therefore resolved to destroy the bridge in four sections, and completely remove each one separately. The metal was cut through by the oxy-hydrogen process, each section being 90 metres in length and weighing 420 tons. These were in turn floated away on four barges carrying a wooden scaffold, which was introduced under the sections by employing water ballast. Three steamers towed away each floating colossus, about 100 metres up stream, where they were deposited for subsequent demolition. Each section took about two hours to remove.

LOAN COLLECTIONS, CAMBRIDGE UNIVERSITY.

Mrs. Morris has deposited, temporarily, in the Fitzwilliam Museum a piece of high-warp tapestry woven by the late William Morris upon his own loom, and a copy of Horace's works, written and illuminated by him. Dr. Glaisher, of Trinity College, has also lent some valuable specimens of English faience and pottery.

LONDON COUNTY COUNCIL BY-LAWS.

The London County Council has been circularising the Borough Councils, calling attention to the case of Kershaw *v.* Brooks, where the Divisional Court upheld the decision of the Police Court magistrate, that the owner of premises and not the builder or contractor employed by him, was liable for any infringement of the by-laws made under sect. 202 of the Metropolis Management Act, 1855, and the Metropolis Management Acts Amendment (By-laws) Act, 1899, and stating that the Council has been in communication with the Local Government Board as to the desirability of securing an amendment of the by-laws in order to place upon the builder the responsibility of complying with the by-laws above mentioned; but the Board points out that it is not satisfied that it is necessary to amend the by-laws, the effect of the decisions in the case of Kershaw *v.* Brooks and in that of Brown *v.* Edmonton being to show that the applicability of the by-law to a particular person must be judged by the facts of each case; and asking for the views of the Councils on the opinion expressed by the Local Government Board.

PROPERTY SALES.

The properties recently placed in the market comprise "The Priory," Bedford Park, Chiswick, planned and designed by Mr. R. Norman Shaw, R.A.——Kelmscott House, a large late XVIIIth century house in Upper Mall, Hammersmith, which was the home of William Morris from 1878 until his death in 1896. The house has fine old gardens, and is one of the few after its kind now remaining in that locality; it had been the residence of Francis Ronalds, who there experimented, in 1816, with his invention of the electric telegraph, and of Dr. George Macdonald, in whose time it was styled "The Retreat." Morris named it from his home in Oxfordshire, near Lechlade, and there set up his press and hand loom for weaving high-warp tapestry.——The Carlton, formerly known as Morton's Theatre, London-street, Greenwich; the interior was remodelled, for 700 seats, at a cost of about 2,000*l.*, from designs by Mr. Alfred Roberts eight years ago. ——No. 25, Cadogan-gardens, Chelsea, the residence of Mr. Mortimer Menpes, who will also dispose of his collections of furniture; the interior contains beautiful decorative work in porcelain, metal, wood, and silk fabrics executed by Mr. Menpes, and by artists he employed in China and Japan.——Berkhampstead House, an Elizabethan mansion, the seat in Hertfordshire of Lord Brownlow; the greater part of the old house, built of flint and stone set chequerwise, was burned in 1660.—— Penfound Manor House, Holsworthy, which is mentioned in the Domesday Survey as being held by Briend of the Earl Moriton Witemot, and is described in the Rev. S. Baring-Gould's book, "An Old English Home."——The Theatre Royal, Dumfries, which was built in 1792, and formed a place of fashionable resort in the time of Burns and the old Caledonian Hunt. The building did not satisfy modern requirements as a theatre, and a new one will be erected in its stead.——The Island of North Uist, with Loch Namaddy village, and some small islands of the Outer Hebrides, extending over some 92,000 acres, and yielding a rent-roll of 5,000*l.* per annum. Prince Charles Edward sought refuge in Loch Namaddy from pursuit by an English vessel, and narrowly escaped from capture at the hands of the Rev. Aulay Macaulay, Lord Macaulay's grandfather.——Derby House, Colchester, has been bought for 2,000*l.*, and will, it is understood, be adapted as the palace of the Bishop of the new diocese in Essex and Hertfordshire.——Holme Lacy, Lord Chesterfield's estate, 5,500 acres, in Herefordshire, was withdrawn at a bid of 210,000*l.* The house was, together with 3,400 acres, afterwards treated for. The effects will be offered for sale in January; they include some fine carving, ascribed to Grinling Gibbons, and English furniture of the XVIIth-XVIIIth centuries, and examples bought by Lord Scudamore when ambassador to France, *temp.* Louis XIV.

PLASTERERS' WAGES AT THE BRUSSELS EXHIBITION.

In the House of Commons on November 25, Mr. W. Thorne asked the President of the Board of Trade if he is aware that the British section being built at the Brussels Exhibition has been let to a British contractor, and that the fibrous plastering work has been sublet to a foreign firm, and the rate of wages paid is 4 francs per day; and, seeing that the work was let to a British firm, should the London rates of wages be paid for the work; and whether, in view of the Fair Wages Resolution, he intends taking action in the matter?—The President of the Board of Trade (Mr. Churchill) replied:—I have been in communication with the contractors for the decoration in the British section of the Brussels Exhibition, who inform me that no portion of their contract has been sublet, that they are paying their Belgian workmen at the rate of more than 4 francs per day, and that the rates paid are not less than the rates current in Brussels. In these circumstances I see no occasion for taking action in the matter.—Mr. J. Ward: Is 4 francs per day the standard rate of wages for plasterers in Brussels?—Mr. Churchill replied:—Yes.—Mr. J. Ward: There is a lot of difference between that and the wages paid in this country.—Mr. W. Thorne: Did the right hon. gentleman advise the contractor as to the rate of wages to be paid?—Mr. Churchill replied:—No, sir; it it obvious that in decorating an exhibition in a foreign country you cannot import British workmen. That would cause a great deal of ill-feeling, and might destroy the purpose of the exhibition. The rule followed by the Government is to pay the current rate of wages in the district, and that, I am informed, is 4 francs per day for plasterers.

THE ROYAL SANITARY INSTITUTE.

A Congress and Health Exhibition is to be held in the Brighton Royal Pavilion, Dome, and Corn Exchange on Monday, September 5, until Wednesday, September 14, 1910. The exhibition is held in connexion with the twenty-fifth Congress of the Institute, and includes sanitary apparatus and appliances, and articles for domestic use and economy. The principal boroughs throughout the kingdom are invited to send delegates to the meeting, in addition to the members and ordinary visitors. Applications for space must be made on the official form, and must be sent to the offices of the Institute, 90, Buckingham Palace-road, London, S.W., not later than Saturday, August 6.

STREETS IN CHISWICK URBAN DISTRICT.

A new departure in the district for the making-up of private streets has been adopted by the Chiswick Urban District Council in the plans prepared by the Engineer for Park-road, and for which tenders have been received. The method adopted is to provide 24-ft. carriageways, grass margins, with trees planted thereon and a dwarf iron railing round them, and artificial paved footpaths only 6 ft. in width for roads 50 ft. and 60 ft. in width in a residential thoroughfare. The carriageway in the case above cited will be finished with Guernsey granite, the frontagers, although originally objecting, finally agreeing, and the whole of the work will be carried out at their expense.

PUBLIC TASTE AND ARCHITECTURE.

At the opening meeting of the architectural section of the Royal Philosophical Society of Glasgow on the 22nd ult., the President, Mr. Alex. Cullen, F.R.I.B.A., F.R.S.E., gave an address entitled "The Critical Study of Architecture." He remarked that while the merits or defects of the drama, music, books, and pictures were discussed and criticised in the newspapers, architecture received no such recognition. It was seldom, in fact, that an intelligent criticism of a modern building appeared in the daily Press. Why should the mother of all the arts be thus neglected? The newspapers generally provided what the public desired, and seemingly the public had no desire to know about the art of architecture. Behind everything lay a cause. Architects were apt to blame the public. But the fault lay in both directions, the public indifference being caused, to a considerable extent, through the want of sufficient knowledge to distinguish between what is good and what is inferior in a building, and by the architect failing to interest the public with his work. The lecturer urged that closer attention should be paid to the quality of the domestic architecture produced, because it was by a man's environment that his taste was formed. There never could be fine public buildings while there was a general absence of good domestic architecture.

GLASGOW INFIRMARY EXTENSION.

In the annual report of the Western Infirmary, Glasgow, mention is made of the scheme for a still further extension of the infirmary. An addition to the nurses' home is now all but completed, the cost of which has been nearly 14,000*l.*; while the managers have accepted estimates for the erection of a new pavilion, giving at least ninety additional beds, and involving a further expenditure of 35,000*l.* Altogether the schemes for extension entail a capital expenditure of 80,000*l.*

HOUSING, BELFAST.

At a joint meeting of the Belfast Corporation Rating, Health, and Improvement Committees on the 25th ult., it was decided to carry out a scheme which includes the clearing away of insanitary areas, the formation of new streets, the widening of existing streets in congested districts, and the erection of blocks of model dwellings. The scheme will involve an expenditure of a quarter of a million sterling.

HOUSES BUILT OF CEMENT SLABS.

A lecture was delivered recently in Edinburgh by Mr. Graham Yooll to the Royal Scottish Society of Arts. Mr. Yooll gave a description of machinery which he has had erected at Victory Tile Works, Georgie, for the manufacture of inlaid cement flooring tiles, which had formerly to be imported from the Continent. The tiles, however, said Mr. Yooll, could not be brought over at a profit, owing to the expense of transit and other difficulties. They could, on the other hand, be manufactured profitably in this country. Inlaid cement tiles were very much employed all over the Continent for paving the interior of churches, halls, and schools, for vestibules, and for footpaths. Their manufacture was a new industry to Scotland, and, so far as Mr. Yooll knew, carried on only in Edinburgh. The tiles were very durable. The same tiles that were laid in Charles the Fifth-street, in Ghent, in 1865, were still in position, and bore heavy foot traffic daily. The lecturer showed a cottage built of "Victory" cement slabs on a concrete foundation. Two distinct walls, with an air space of 2½ in. between them, were carried up from base to roof. The outer wall was 3 in. and the inner 2½ in. thick. They were strengthened by iron standards sunk in the concrete foundation, and securely fixed to the wall plate. A cottage of this description could be put up and made ready for occupation in three weeks. At Annerley a school built of cement slabs had just been erected to the design of Mr. Cecil Sharpe, London. The building of the entire school, including boiler-house, drains, etc., only occupied fifteen weeks from start to finish, and in this short period a hot-water system of heating was also installed. The school was built of steel, and of concrete slabs of a dove-tailed character. The entire surfaces of the walls and ceilings internally were finished with a marble plaster. All the work was absolutely rigid, of a most substantial character, and perfectly weather-proof. The school was a large building, with a hall, 65 ft. by 35 ft., which could be made 107 ft. long by 35 ft. wide. There were eleven classrooms, all opening out from the central hall. The latter was constructed for use as a gymnasium. The building all over could not be distinguished from a permanent built brick one, and the entire cost was 3,832*l.* all told. This type of school accommodated 400 scholars, and the cost of them was 9*l.* per scholar.—*Aberdeen Journal.*

APPOINTMENT OF SANITARY OFFICERS.

The Local Government Board has sanctioned the appointment of Mr. B. H. Thompson as sanitary inspector in the Metropolitan Borough of St. Pancras, in the room of Mr. W. J. Storer.

RECENT ART SALES.

The dispersal recently of a portion of Mr. John Ford's collections at Old Park, Enfield, realised 13,200*l.* The principal lots comprised an old-English marqueterie oyster walnut cabinet from Bower Hall, Essex—300 guineas; a Chippendale serpentine chest of

Digitized by Google

drawers—185 guineas; a pair of English leaden figures of a shepherd and shepherdess, by Sir J. Cheke, from Vauxhall-gardens—283*l.*; a leaden figure of a negro boy supporting a marble sundial, also by Cheke, illustrated in Mr. I. Triggs's "Formal Gardens of England"—200 guineas; the marble statue, 40 in. high, of Oliver Goldsmith, by J. H. Foley, R.A., 1860, for which Mr. Westhall sat to the sculptor, and of which the bronze version is at Trinity College, Dublin—280 guineas; a pair of wrought-iron carriage gates, 10½ ft. high, on red brick piers, from Lord George Gordon's house in Enfield—150*l.*; a Watteau leaden figure of a jester, 32 in. high—130*l.*; and on old Italian statuary marble pedestal elaborately sculptured with fruit swags and heads of rams and sphinxes, from Lord Egremont's collection at Petworth—130 guineas. The pictures and engravings included Earlom's "Marriage à la Mode," after Hogarth—32*l.*; D. Lucas's "Dedham Lock," after Constable, a proof—90 guineas; two water-colours by S. Prout, of a continental street scene and cathedral interior—101 guineas; a river and village scene by J. Van der Meer—52 guineas; and an alehouse exterior and a landscape with peasants reaping, by D. Teniers the elder—60 guineas.——The sale at Christie's rooms of Mrs. Hartmann's collection, removed from White Lodge, Richmond Park, included a pair of mahogany side tables of Louis XVI. design—180 guineas; four Louis XVI. fauteuils covered with Aubusson tapestry—165 guineas; a pair of Louis XVI. candelabra, with bronze nymphs, etc.—145 guineas; a pair of Boulle cabinets having panels inlaid with brass scrolls, on a tortoiseshell ground and chased ormolu mounts—140 guineas; and a set of fifty Vienna plates painted with amorini—170 guineas.

COLLAPSE OF A BUILDING, EVESHAM NEW SECONDARY SCHOOL.

A building collapse, happily unattended with injury to any of the workmen engaged, occurred at Evesham recently. Messrs. Espley & Co., local builders, have the contract (at a sum exceeding 9,000*l.*) for building the new secondary schools at Evesham, and good progress is being made in the erection of the new buildings. The concrete constructions of the galleries and roof of the main hall was being carried out by a well-known firm of reinforced concrete specialists, this being practically a sub-contract. The concrete flooring had been completed about two months ago, and asphalt was being laid, when about eleven o'clock in the morning the concrete flooring and roof over the main hall, covering a space of about 50 ft. by 30 ft., suddenly collapsed, and fell to the floor below. A number of workmen had narrow escapes.—*Worcester Times.*

NEW PARK, PRESTON.

Mr. M. K. North, M.Inst.C.E., Inspector to the Local Government Board, held an inquiry recently into an application of the Preston Town Council for sanction to borrow 6,000*l.* for the purpose of laying out Haslam Park. The Town Clerk (Mr. Howarth) stated that the Borough Surveyor had in the first instance prepared a plan showing a comprehensive scheme comprising a lake, children's playgrounds, bowling-green, etc., the estimated cost of the carrying out of which was 15,000*l.* The Parks Committee, however, thought the present was not an opportune time to proceed with so large a scheme, and Mr. Cookson prepared a modified one to cost 6,000*l.* Although there was no suggestion to proceed with the larger scheme, if the Council, at a future date, did desire to do so, the carrying out of the less ambitious idea would in no way interfere with it.

BIRMINGHAM BUILDING BY-LAWS.

The Birmingham Public Works Committee, in their report to the next meeting of the City Council, on December 7, state that the Local Government Board are not prepared to reconfirm the Council's by-laws relating to new streets, and, as the Committee are of opinion that the existing by-laws are more satisfactory than those contained in the latest model of the Board, they do not recommend any change with regard to them other than few minor alterations relating to the deposit of plans and the like, which the Board are prepared to agree to. The Committee propose, however, to repeal the by-laws relating to new courts, as they think that courts should be dealt with under the by-laws relating to new streets. With these exceptions the by-laws submitted with this report relate solely to new buildings, and they are based upon the latest model of the local Government Board. The principal alterations or additions are those relating to paved floors, and to hollow walls and walls of timber framing. A provision is inserted that in computing the length of walls for the purposes of the by-laws walls are deemed to be divided into distinct lengths, not only by cross-walls, as in the present by-laws, but also by piers if constructed in accordance with the by-law. Provision is also made for walls of steel or iron framework, the construction of hearths with a view to the prevention of fire, and the width and thickness of timbers. In the existing by-laws the minimum extent of air space in the rear of dwelling-houses varies from 150 sq. yds. to 200 sq. yds., according to the height of the building. This minimum is raised in the present by-laws to 300 sq. yds. in all cases. There is also provision for securing proper ventilation of pantries, while the composition of mortar has throughout the by-laws been more particularly specified. The by-laws, as provisionally approved by the Local Government Board, are submitted with the report, and the Committee recommend that they be made and adopted by the Council.

THE ROYAL COMMISSION ON ANCIENT AND HISTORICAL MONUMENTS.

A meeting of the Royal Commission on the Ancient and Historical Monuments of Scotland was held at 29, St. Andrew-square, Edinburgh, on the 24th ult., Sir Herbert Maxwell presiding. The Secretary reported on his examination during the past summer of the monuments and constructions in Sutherland, an inventory of which is now in course of preparation, and will be embraced in the second Report of the Commission. It was reported that the Town Councils of the Royal burghs had been approached with a view to their giving the Commission some assistance by compiling lists of monuments in their respective towns, and that a gratifying response had been made.

MEANS OF DEADENING SOUND.

Among the various means which may be employed for obstructing the passage of sound through floors, Messrs. Arthur L. Gibson & Co. send us samples and a description of "Cabot's sheathing and deafening quilt," which appears to have been originally an American invention, but which they are bringing into use in England. The "Quilt" is a light, thick cushion of dead air spaces, composed of a matting of cured eel-grass (*Zostera marina*), the broad, flat blades of which, crossing each other at every angle, form innumerable minute cells in which the air is held closely confined so that it cannot circulate and thus conduct heat. Its physical structure is therefore such as to carry the most imprisoned air possible in as many separate spaces as possible. Eel-grass is used for the filling because the fibre is long and flat, and the ribbons form the successive air-cells which produce the insulation, and which would be

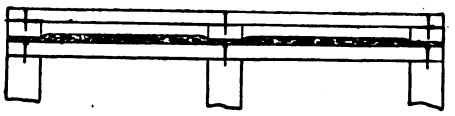


Fig. 1.

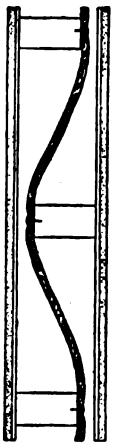


Fig. 2.

impossible with a round fibre; it is said to be indestructible by decay, and, containing silicon and iodine, is repellent to insects and vermin; and it will not burn, on account of its large percentage of silicon. Some of the testimonies as to efficiency as an insulator are remarkable, especially that in regard to its use in partitions at the New England Conservatory of Music. The two diagrams reproduced illustrate its use in a wooden floor and in an upright partition. In the floor (Fig. 1) the furring strips are not nailed, and the floor nails do not pass through the Quilt; the finish floor is floated on the cushion of the Quilt. Fig. 2 shows the method of weaving the Quilt through the studding of a partition. The material is evidently worth the attention of those who do not like pugging, and who want an inexpensive insulator.

FLOATING DOCK, WALLSEND.

A provisional order for one of the large floating docks which the Admiralty intend building has been received by Messrs. Cammell, Laird, & Co.

BUILDING BOOM IN AUSTRALIA.

Information from Australia show there is a building boom in Sydney. In certain trades there is a considerable dearth of labour, and there is a movement everywhere for increased wages. The number of contracts in existence, buildings in course of erection, and the plans on the boards in the architects' offices this year will easily be a record. Stonemasons are very difficult to get, bricklayers are scarce, and good joiners are at a premium. When the mail left, however, there were fears of a strike of quarrymen, which would disorganise the industry.

TESTING OF TACKLE.

At the Marylebone Coroner's Court, on the 29th ult., Mr. Walter Schroeder resumed his inquiry as to the death of John Cummings, aged 65, a scaffolder, which occurred in the Middlesex Hospital on November 16, as the result of an accident at some building works in Regent-street. Cummings, who was working for Messrs. Allen & Co. on a building near Conduit-street, Regent-street, was engaged in the elevation to the fourth floor of a block of stone weighing 4½ tons when the tackle broke, the stone crashing through the scaffolding and precipitating him to the basement. The jury returned a verdict of accidental death, and they recommended the adoption of the annual testing of tackle in the case of buildings as well as in docks.

MAIWAND MEMORIAL AT READING.

A County Committee has been formed for the restoration of the Maiwand Memorial in the Forbury Gardens, at a cost of about 600*l.* Mr. G. W. Webb, of Reading, is the architect entrusted with the restoration.

BLOCK PAVING, KENSINGTON.

Kensington Borough Council has for some time been making road-paving bricks at its depôt in Wood-lane, Shepherd's Bush. The bricks, which weigh about 10 lb., are in size 9 in. by 4½ in. by 3 in., and are made practically out of house refuse. The stuff is burnt in the destructors; each burning cell has a capacity of five tons, and is fed by a blast from a separate fan, an equal distribution of forced draught being thus secured. Six hundred tons are burned in a week. The clinker which is formed is ground in a mill, very much like a mortar mill, being screened at the same time through the bottom of the pan. After going through a measuring hopper it is put into a mixer, where preparations of Trinidad Lake asphalt and oil are added and well mixed. The product is then thrown into another hopper leading to the brick press, which turns the blocks out after passing them through water for cooling purposes at the rate of 500 per hour. No "seasoning" is necessary, the bricks being quite ready for laying in the roads. Several roads in Kensington were thus paved two years ago, and are wearing well. The new blocks cost much less than the ordinary blocks; another advantage is that they are non-slippery.

A RESIDENTIAL PARK, LEATHERHEAD.

A scheme is formulated for the establishment of a residential settlement in Packesham Park, near Leatherhead, where 200 acres have been acquired by the promoter. The land is finely wooded, and contains a large lake. The project embraces the erection of about one hundred houses, each to stand in an acre, more or less, of ground, to be let at a weekly rental of 2*l.* 5s., inclusive of rates and taxes, and a first-class railway season ticket to London, and with a view to enabling the tenants to become, in time, owners of their houses and sites. Links and recreation-grounds will be laid out, and the houses will be fitted with all modern appliances. The promoter, an American gentleman, contemplates the formation hereafter of similar private parks around London and some of the chief provincial towns.

Law Reports.

DISTRICT SURVEYORS' FEES.

At Lambeth Police Court, before Mr. Hopkins, Messrs. Galbraith Brothers, builders, of Camberwell Green, were summoned by Mr. Bernard J. Dicksee, District Surveyor, for the recovery of 16*l.* 7s. 6d., being fees which he alleged to be due to him in connexion with the erection by the defendants for the London County Council of a new school for defective children at Walworth. The case was a test one. Mr. Walter Ryde appeared for the complainant, and Mr. A. H. Bodkin for the defendants.

Mr. Hopkins, having dealt at length with the points involved, delivered judgment to the effect that the District Surveyor was entitled to payment, and he accordingly made an order for the payment of the amount claimed. Upon the application of Mr. Pasmore, solicitor for the complainant, Mr. Hopkins allowed 20 guineas costs.

LAW REPORTS.—*Continued on page* 627.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, —; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

DECEMBER 3. — **Otley.**—SCHOOL.—The Governors of Prince Henry's Grammar School, Otley, have decided to erect new school buildings, and will be glad to hear from architects who are willing to submit designs and estimates. If the number of applications is excessive, it is intended by selection to invite twenty or twenty-five only to compete. A fully qualified non-competing architect, in conjunction with the West Riding Education Committee's Inspector of Secondary Schools, will assist the Governors in adjudicating upon the plans. Applications, stating qualifications and experience, must be received by Mr. Ernest S. Mead, Clerk to the Governors, East View, Otley, before December 3, 1909.

DECEMBER 3.—**Royal Leamington Spa.**—PUMP ROOM EXTENSION.—The Council offer a prize of 10*l.* for the best design for an extension to the cooling room at the Pump Room and Baths. Full particulars may be obtained on application to Mr. Leo. Rawlinson, Town Clerk.

DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See October 2 and 23, also advertisement in our issue of November 27 for further particulars.

DECEMBER 18. — **Headingley, Leeds.** — TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 1. — **Hetton.** — CLUB.—The Committee of the Hetton Working Men's Club invite plans for the erection of a new club. Plans, with estimates, to be sent to Mr. Jas. Widdowfield, Secretary, Hetton Working Men's Club, Pemberton-street, Hetton-le-Hole.

JANUARY 1.—**Larne.**—TECHNICAL SCHOOL.—The Larne Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Victoria-street. A premium of 21*l.* will be paid for the approved design. Further particulars may be obtained from Mr. Thomas Clearkin, Secretary.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1. — **Oldham.** — PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. F. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 6. — **Bridlington.** — ALTERATIONS, ETC.—Alterations and additions to the Hilderthorpe Hotel, Bridlington. Plans, etc., at the Hilderthorpe Hotel. Messrs. Brodrick, Lowther, & Walker, architects, 77, Lowgate, Hull.

DECEMBER 6. — **Bristol.** — LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of Nos. 18 and 20, Victoria-street, Bristol, for a Labour Exchange. Drawings, etc., may be seen on application to the Assistant Architect, H.M. Office of Works, Bristol. Forms of tender may be obtained on application to the Secretary, H.M. Office of Works, etc., Storey's-gate, London, S.W.

DECEMBER 6.—**Taunton.**—ALTERATIONS.—Alterations to premises in Fore-street, Taunton (lately known as "The King Alfred Temperance Hotel"), for Mr. Hadland Davis, of Exeter. Plans, etc., may be seen on the premises, on application to Mr. W. Carnes, adjoining; and copies of the same on application to the architect, Mr. James Crocker, F.R.I.B.A., Stuckey's Bank-chambers, Exeter.

DECEMBER 7.—**Bradford.**—WAREHOUSE.—The Bradford Corporation invite tenders for works of all trades required to be done in the erection of new warehouse at Dumb Mill, Frizinghall. Drawings and general conditions of contract may be seen, and bills of quantities, etc., obtained, on application to the City Architect, Town Hall, Bradford.

DECEMBER 7. — **Bridlington.** — ALTERATIONS, ETC.—Alterations and additions to No. 35, King-street, for Mr. J. R. Collinson. Drawings, etc., may be inspected at the office of Mr. J. Earnshaw, architect, Carlton House, Bridlington.

DECEMBER 7. — **Gateshead.** — ALTERING SHED.—North-Eastern Railway Directors invite tenders for extending and altering engine shed at Gateshead. Plans, etc., may be seen, and quantities, etc., obtained, on application to Mr. William Bell, the Company's Architect, Newcastle-on-Tyne. Quantities supplied on personal application to parties tendering for the whole of the works.

DECEMBER 7. — **Pentre.** — HOUSES.—Two detached houses for Messrs. Taylor & Austin on The Maindy, Pentre, Ystrad. Plans, etc., may be seen at office of Messrs. T. E. Richards & Kaye, architects, Pontypridd.

DECEMBER 7. — **Poole.** — WARD AND TOWER.—The Guardians invite tenders, from builders within the Poole Union, for the erection of a new casual ward and restoration of the clock tower at the Workhouse, in accordance with plans, etc., which may be inspected on application to Mr. Ed. Van Schepdael, architect, Tincleton Villa, Wimborne-road, Poole.

DECEMBER 8.—**Oldham.**—LAVATORIES.—The Markets and Baths Committee invite tenders for the erection of new lavatories at the Market Grounds. Plans may be seen, and bill of quantities and form of tender obtained, at the Borough Surveyor's Office.

DECEMBER 8.—**Ormskirk.**—DINING HALL.—For a new dining hall and kitchen at the Workhouse, for the Guardians. Plans, etc., may be seen on application to the Master of the Workhouse, and any further information obtained from Mr. Dod, architect, D16, Exchange-buildings, Liverpool.

DECEMBER 8.—**Rathdown.**—REPAIRS TO DUNDRUM DISPENSARY.—The Board of Guardians invite tenders for repairs to Dundrum Dispensary, in accordance with the specification which can be seen at the Clerk of the Union's Office.

DECEMBER 8.—**Wattstown.**—HOUSES.—Erection of twenty-one houses at Wattstown, Rhondda Fach, for the Wattstown Building Club No. 2. Plans, etc., can be seen at office of Messrs. A. O. Evans, Williams, & Evans, architects, Pontypridd.

DECEMBER 9.—**Elgin.**—HOUSE.—Carpenter, slater, plumber, plaster, and painter works of house to be erected at Lady-lane. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

DECEMBER 9.—**Merthyr Vale.**—COTTAGES.—Twenty or more cottages at Mount Pleasant, Merthyr Vale, for the South Wales Estates Company, Ltd. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect, Treharris.

DECEMBER 10.—**Bawtry.**—REPAIRS TO WALLS.—For repairs to walls and asphalting at the Bawtry mixed school, for the District Sub-Committee. Specifications for the work will be supplied on application. Mr. L. J. Blackburn, Divisional Clerk, 10, Priory-place, Doncaster.

DECEMBER 11.—**Crosby.**—HOUSES.—Erection of seven dwelling-houses at Crosby, in the county of Lincoln. Plans, etc., may be seen at office of Mr. W. H. Buttrick, P.A.S.I., architect, Scunthorpe.

DECEMBER 11. — **Heanor.** — SCHOOL ALTERATIONS.—The Derbyshire Education Committee invite tenders for the alteration of Council school, Codnor Mill-lane. Drawings, etc., at the office of the Architect to the Committee, St. Mary's-gate, Derby. A copy of the bill of quantities, etc., can be obtained at the architect's office upon payment of 1*l.* 1s.

DECEMBER 11. — **New Tredegar.**—HOUSES.—Erection of twenty or more houses on the Lawrence Estate, near New Tredegar, for the Greenmeadow Building Club. Plans, etc., may be seen on application to the architect, Mr. D. W. Price, Cloth Hall, New Tredegar.

DECEMBER 11.—**Wimbledon.**—SANITARY CONVENIENCE.—The Corporation of Wimbledon invites tenders for the erection of an overground sanitary convenience at the junction of Cap-road and Durnsford-road. Plans may be inspected, and forms of tender obtained, on application at the office of the Borough Surveyor, Town Hall, Wimbledon.

DECEMBER 13.—**Barnet.**—WATER TOWER.—The Guardians invite alternative tenders for the construction of a water tower having a capacity of 60,000 gallons. Full particulars, etc., may be obtained, and drawings seen, at the office of the Engineer, Mr. J. C. Melliss, M.Inst.C.E., 264, Gresham House, Old Broad-street, London, E.C., on payment of the sum of 2*l.*

DECEMBER 13. — **Camborne.**—RESEATING, ETC.—The Trustees of the Centenary Wesleyan Methodist Church invite tenders for reseating the gallery with sundry alterations and painting, according to plan, etc., which may be seen by appointment at the office of Mr. Sampson Hill, architect, Green-lane, Redruth.

DECEMBER 13.—**Hull.**—ALTERATIONS AND ADDITIONS, WAWNE-STREET SCHOOL.—The Education Committee invite whole tenders for the necessary work to be performed in the alteration and additions to Wawne-street School. Drawings, etc., may be seen at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull, and quantities obtained upon payment of a deposit of 2*l.* 2s. Remittances to be made payable to the City Treasurer.

DECEMBER 14. — **Greenock.** — LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of part of the Custom House building at Greenock for a Labour Exchange. Drawings, etc., may be seen on application to the Collector of Inland Revenue, Custom House, Greenock. Bills of quantities, etc., may be obtained at H.M. Office of Works, Parliament-square, Edinburgh, on payment of 1*l.* 1s.

DECEMBER 14.—**Tudhoe Grange, Spennymoor.**—SCHOOL.—The C.C. of Durham invite tenders for new Council school (for about 810 scholars) at Tudhoe Grange, Spennymoor. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. W. Rushworth, Shire Hall, Durham.

DECEMBER 15. — **Leeds.** — ALTERATIONS. — The Property Committee invite tenders for alterations to and furnishing of the offices, Nos. 38 to 46, Great George-street, Leeds. Specification, etc., at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

DECEMBER 15.—**Penygraig.**—ADDITIONS, ETC.—The Committee of the Penygraig and District Labour and Progressive Club invite tenders for proposed additions and alterations to their premises in Penygraig-road, Penygraig. Plans, etc., to be seen on the premises with the Secretary, Mr. W. Lewis.

DECEMBER 15. — **Skircoat.** — HOUSE. — Mason's, joiner's, plumber's and glazier's, plasterer's, stone slater's, and concretor's work required in the erection of a detached house at Skircoat. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh, F.S.I., & Graham Nicholas, F.R.I.B.A., architects and surveyors, Museum-chambers, Halifax.

* DECEMBER 16. — **Croydon.** — SUNDRY WORKS, SCHOOLS.—The Guardians of Bermondsey invite tenders for alterations of school buildings at Shirley Schools, Wickham-road, near Croydon. See advertisement in this issue for further particulars.

* DECEMBER 20.—**Brighton.**—TRAINING COLLEGE.—The Brighton Education Committee invite tenders for a day training college in Richmond-terrace, Brighton. See advertisement in this issue for further particulars.

DECEMBER 20.—**Radyr.**—TOWER, ETC.—Erection of the tower, chancel, and vestries at Christ Church, Radyr, near Cardiff, for the Rev. David Phillips, M.A., and Committee. Plans may be seen, and bills of quantities obtained, at offices of Mr. Geo. E. Halliday, F.R.I.B.A., 19, Castle-street, Cardiff.

* DECEMBER 21. — **Wednesbury.** — POST-OFFICE ENLARGEMENT.—The Commissioners of H.M. Works, etc., invite tenders for enlargement of Wednesbury Post-office. See advertisement in this issue for further particulars.

DECEMBER 22.—**Chadderton.**—REFUSE DESTRUCTOR.—The U.D.C. of Chadderton invite tenders for the erection of a refuse destructor in connexion with existing buildings, and inclined roadway at the sewage disposal works, Middleton Junction. Specification, etc., may be obtained on application to the Surveyor to the Council, Town Hall, Chadderton, on payment of 2*l.*

DECEMBER 24.—**Wandsworth.**—ROOFS.—The Guardians of the Wandsworth Union invite tenders for overhauling the roofs at the Infirmary, St. John's-hill, Wandsworth, S.W. Form of specification, etc., can be obtained upon application at office of Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

* JANUARY 8. — **Crewe.** — TRAINING COLLEGE.—The Cheshire Education Committee invite tenders for new training college for teachers at Crewe. See advertisement in this issue for further particulars.

NO DATE. — **Bristol.**—ALTERATIONS.—Alterations to premises in Broadmead, Bristol, belonging to Broadmead Baptist Chapel. Apply to the architects, Messrs. Holbrow & Oaten, 9, Clare-street, Bristol.

NO DATE.—**Clones.**—REBUILDING.—Rebuilding of licensed premises in Fermanagh-street, Clones, for Mr. P. Murphy. Plans, etc., may be seen at Cara St. Clones, or at offices of Mr. J. V. Brennan, C.E., architect, Belfast Bank-chambers, Belfast.

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NO DATE.—**Hull.**—CONVENIENCE.—Small brick-built convenience at East Park. Particulars of City Engineer.

NO DATE.—**Sneinton.**—CHURCH.—New Church of St. Christopher's, Colwick-road, Sneinton. Quantities from Mr. F. E. Little, A.R.I.B.A., architect, Lowdham, Notts, on deposit of 1*l.* 1s.

✱ NO DATE.—**Tunbridge Wells.**—CHURCH.—Tenders are invited for erection of St Luke's Church, Wilkin-road, Tunbridge Wells. See advertisement in this issue for further particulars.

ENGINEERING, IRON, AND STEEL.

DECEMBER 6.—**Edinburgh.**—ELECTRIC LIGHT INSTALLATION.—The Lord Provost, Magistrates, and Council of the City of Edinburgh invite tenders for the electric lighting installation at the refreshment-rooms, blood-treating house, etc., in connexion with the new slaughter-houses, Gorgie. The specification, etc., can be obtained at the Engineer's Office, Dewar-place, Edinburgh, on payment of a deposit of 1*l.* 1s.

DECEMBER 6.—**Ossett.**—DRIVING STONE DRIFTS.—Driving pair of stone drifts, 7 ft. by 5 ft. and 6 ft. by 4 ft. respectively, Pildacre Collieries, Ossett.

DECEMBER 7.—**East Ashford.**—BRIDGE.—East Ashford R.D.C. invite tenders for the erection of a bridge over a stream on the road leading from Wye to Plumpton, near Young's Tile Works. Plan, etc., can be seen by appointment at the office of Mr. Pullen, Surveyor, at Kennington, Kent.

DECEMBER 7.—**Penderyn.**—TRIAL HOLES.—Mountain Ash U.D.C. invite tenders for the sinking of two trial holes on the Tai-cwplau Farm, in the Parish of Penderyn, in the County of Brecon. A plan, etc., may be seen on application to the Surveyor, Town Hall Mountain Ash.

DECEMBER 8.—**London.**—BRIDGES.—East Indian Railway Company invite tenders for the supply and delivery of thirteen 150-ft. spans for Kiul and Hullohur Bridges, as per specification to be seen at the company's offices. For each specification a fee of 1*l.* 1s. is charged, which cannot, under any circumstances, be returned. Mr. C. W. Young, Secretary, Nicholas-lane, London, E.C.

DECEMBER 13.—**Manchester.**—ELECTRIC INSTALLATION.—Manchester Corporation invite tenders for the wiring and complete installation of electric lighting at the Harpurhey Baths, about 700 lights. Drawings may be seen, and specifications obtained, at the office of the City Architect, Town Hall, upon payment of 2*l.* 2s. All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

DECEMBER 15.—**Southport.**—SLUDGE-PRESSING PLANT.—The Southport Corporation invite designs and tenders for the supply and erection of a complete installation of sludge-pressing plant. Specification, etc., may be obtained from the Borough Engineer, Town Hall, Southport, on payment of a deposit of 3*l.* 3s.

DECEMBER 18.—**Saints Bay.**—LANDING-PLACE.—The Coast Defences Committee invite tenders for the construction of a landing-place at Blanchelande, Saints Bay. For further particulars apply to Mr. J. H. Duquemin, States' Engineer, States Office, Guernsey.

DECEMBER 20.—**Dublin.**—RAILS, ETC.—Dublin and South-Eastern Railway Company Directors invite tenders for the supply of 700 tons bull-head steel rails and 500 tons cast-iron chairs. Specifications and forms of tender can be had on application to Mr. S. J. Shannon, Engineer's Office, No. 1, Westland-row, Dublin.

DECEMBER 20.—**Morecambe.**—MARINE ROAD WIDENING, NEW SEA WALL, AND TRAMWAY RECONSTRUCTION AND DOUBLING.—The Corporation of Morecambe invite tenders for the execution of the above work. Plans, etc., may be seen, and form of tender, etc., obtained, on deposit of 3*l.* 3s., upon application to Mr. J. W. Hipwood, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Morecambe.

✱ JANUARY 3.—**Sawbridgeworth.**—IRON PIPES.—The Sawbridgeworth U.D.C. invite tenders for supply of 625 yds. of 4-in. cast-iron pipes. See advertisement in this issue for further particulars.

FEBRUARY 1.—**Tiflis.**—GASWORKS.—The Municipality of Tiflis (Russia, Caucase) invite tenders for the construction and exploitation of the gaswork for lighting, heating, and power gas. The conditions of contract may be obtained at the offices of Municipality (Gorodskaja Ouprawa). Other particulars at the City Engineer's Office (Gorodskoj Ingenier).

MARCH 1.—**Chili.**—NEW GRAVING DOCK FOR TALCAHUANO.—The Chilian Naval Commission invite tenders for the construction of a new graving dock and tidal basin at Talcahuano Dockyard. Specifications, etc., at the office of the Chilian Naval Commission, upon payment to the Fiscal Treasury of Chili, 121, Victoria-street, S.W., of the sum of 2*l.*

MISCELLANEOUS.

DECEMBER 6.—**Castlerahan.**—CRANES.—Castlerahan R.D.C. invite tenders for the supply of cranes for labourers' cottages in accordance with the specification prepared by the Engineer.

DECEMBER 6.—**Chesterfield.**—SCAVENGING.—Chesterfield R.D.C. invite tenders for cleansing the ashpits, privies, and dustholes in the Hepthorne-lane District of the Parish of North Wingfield. Forms of tender may be obtained from Mr. E. S. Robinson, woodthorpe House, Tupton, Chesterfield.

DECEMBER 6.—**London.**—GULLY VANS.—The Finsbury B.C. invite tenders for the supply of two gully vans. Particulars and forms of tender may be had on application to the Cleansing Superintendent, at 26, Wharf-road, City-road, N.

DECEMBER 7.—**London.**—WARD LOCKERS.—Poplar and Stepney Sick Asylum District Managers invite tenders for the supply of thirty-six ward lockers. Printed forms of tender may be obtained upon application to Mr. Walter R. Foskett, Clerk to the Managers, Clerk's Offices, Devon's-road, Bromley-by-Bow, London, E.

DECEMBER 7.—**Taunton.**—ROAD ROLLER.—The T.C. invite tenders for the supply and delivery of a 12-ton compound steam road roller. Mr. D. Edwards, A.M.Inst.C.E., Borough Surveyor, Municipal Buildings, Taunton.

DECEMBER 7.—**Watford.**—BLACKSMITHS' WORK.—The Watford U.D.C. invite tenders for blacksmiths' work. Form of tender, etc., on application to Mr. D. Waterhouse, Engineer, Council Offices, Watford.

DECEMBER 8.—**Newport.**—CREOSOTED WOOD BLOCKS.—The Corporation invite tenders for the supply and delivery of 70,000 creosoted deal blocks, 9 in. by 3 in. by 4 in. deep. Full particulars may be obtained upon application to Mr. Robt. H. Haynes, Borough Engineer, Town Hall, Newport, Mon.

✱ DECEMBER 9.—**Blackpool.**—TILING.—The Commissioners of H.M. Works and Public Buildings invite tenders for supplying and fixing of tile and faience dados at Blackpool new Post-office. See advertisement in this issue for further particulars.

DECEMBER 11.—**Snodland.**—SCAVENGING.—Snodland P.C. invite tenders for the dry scavenging, *i.e.*, house refuse of the Parish. Particulars, etc., can be obtained on application at office of Mr. Tom Hilder, Clerk to the Council, Pelham House, Snodland.

DECEMBER 11.—**South Shields.**—DISINFECTANTS.—The Corporation invite tenders for the supply of disinfectants. Forms of tender, etc., may be obtained from Dr. Mostyn, Health Office, Russell-street, South Shields.

DECEMBER 11.—**Warrington.**—POINTING.—The Water Committee invite tenders for the pointing, etc., of the chimney shaft at their Winwick Pumping Station. Further particulars may be had from Mr. James Deas, A.M.Inst.C.E., Water Engineer, Municipal Offices, Warrington.

✱ DECEMBER 13.—**London.**—OFFICE FURNITURE, ETC.—The London C.C. invite tenders for supply and delivery of office furniture. See advertisement in this issue for further particulars.

✱ DECEMBER 14.—**London, W.**—GLAZED WALL TILING.—The Commissioners of H.M. Works, etc., invite tenders for supply and fixing of leadless glazed wall tiling at the new Western District Post-office, Wimpole-street, W. See advertisement in this issue for further particulars.

✱ DECEMBER 14.—**Willesden.**—MOTOR FIRE-ENGINE.—The Willesden D.C. invite tenders for supply of a motor fire-engine. See advertisement in this issue for further particulars.

DECEMBER 16.—**Bradford.**—GAS RETORTS, ETC.—The Bradford Corporation invite tenders for the supply of gas retorts and of firebricks and fireclay. Form of tender may be obtained on application to Mr. Chas. Wood, Gas Engineer, Town Hall, Bradford.

DECEMBER 16.—**Southwark.**—TELEPHONE INSTALLATION.—The Southwark Guardians invite tenders for the supply, delivery, and erection of a 38 instrument, central battery telephone installation, at their Infirmary, East Dulwich-grove. A copy of the specification, etc., may be obtained from Mr. P. Richardson Shill, Bassishaw House, 70A, Basinghall-street, London, E.C., on the deposit of 1*l.* 1s.

DECEMBER 19.—**Warrington.**—PARTITIONS.—The Education Committee invite tenders for the supply of two small sliding partitions. Forms of tender may be obtained from Mr. J. Moore Murray, Secretary and Director, Education Office, Warrington.

NO DATE.—**Oldham.**—CLOCK.—The Tramways Committee invite tenders for the supply and fitting-up of public clock, with 4-ft. diameter dials, at Hollinwood Tramway Depot. Particulars and form of tender can be obtained from Borough Surveyor, Oldham.

NO DATE.—**Swanscombe.**—HARROWING, ETC., THE SOIL OF THE NEW RECREATION GROUND.—The Swanscombe P.C. invite tenders for harrowing and rolling the new Recreation Ground, at Galley Hill; also to clear away household and other refuse; and also to fill up and level hollows. Mr. M. H. Heys, Clerk to the Council, will supply further particulars at the Council Office.

PAINTING, etc.

DECEMBER 8.—**Leeds.**—PAINTING.—Development Committee invite tenders for painting the exteriors of Lady Bridge Mills, Lady-lane, and other properties in St. Mary's-street, York-street, etc. The specifications may be seen, and forms of tender obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

DECEMBER 10.—**Hull.**—COLOURING, ETC.—The Education Committee invite tenders for colouring and whitewashing, etc., certain of their schools. Particulars and forms of tender can be obtained at offices of Mr. J. T. Riley, Secretary of Education, Education Offices, Albion-street, Hull.

DECEMBER 22.—**Harrogate.**—COLOURING, ETC.—The Committee of Management of the Royal Bath Hospital and Rawson Convalescent Home, Harrogate, invite tenders for colouring, painting, whitewashing, etc. Mr. B. Shaw, Secretary.

NO DATE.—**Elswick.**—CLEANING.—Newcastle-upon-Tyne Education Committee invite tenders for the internal cleaning of Elswick Works Schools. For particulars send stamped addressed foolscap envelope to the Secretary, Education Offices, Northumberland-road, Newcastle-upon-Tyne.

ROADS, SANITARY, AND WATER WORKS.

DECEMBER 6.—**Bradford.**—FOOTPATH.—The Bradford Corporation Education Committee invite tenders for footpath, etc., at the open-air school, Thackley. Drawings, etc., may be seen, and specification, etc., obtained, on application to the City Architect, Town Hall, Bradford.

DECEMBER 6.—**Gellygaer.**—IMPROVEMENTS.—Gellygaer U.D.C. invite tenders for the following works:—(1) Improvement to entrance of Brynavon-terrace, Hengoed; (2) improvement to Station-terrace, Brithdir; (3) improvement to Lane at rear of Cardiff-road, Bargoed; (4) kerb, channel, and pavement at Bedlinog. Plans, etc., can be seen, and bills of quantities obtained, upon application to the Council's Surveyor, Mr. James P. Jones, F.I.S.E., Council Offices, Hengoed, *viâ* Cardiff.

DECEMBER 6.—**Porthcawl.**—WATER MAIN.—For a 3-in. diameter cast-iron water main in Mackworth-road, of a length of 330 yds., for the U.D.C. Plans may be seen, and specification, etc., obtained, on application to Mr. A. S. Lilley, A.I.C.M.E., Engineer and Surveyor, Council Offices, Porthcawl, on payment of 1*l.* 1s.

DECEMBER 7.—**Aberlour Estates.**—DRAINAGE.—Estimates wanted for draining about 12 acres at Moss-side. Contractors meet ground officer at Moss-side Farm Steading, on Tuesday, December 7, at 11.30 a.m.

DECEMBER 7.—**Devizes.**—SEWER.—Devizes R.D.C. invite tenders for the laying in of a sewer with manholes, etc., in the Breach, Devizes. Plans, etc., can be seen on applying to Mr. Jas. M. Butcher, Sanitary Inspector, Southbroom-terrace, Devizes.

DECEMBER 7.—**Tottenham.**—MAKING-UP.—The Council invite tenders for making-up Fairview-road (remainder). The plans can be seen, and general conditions, etc., obtained, on application to Mr. W. H. Prescott, A.M.Inst.C.E., Engineer to the Council, at the Council Buildings, The Green, Tottenham. The sum of 10s. 6d. will be charged for the quantities.

DECEMBER 8.—**Enfield.**—MAKING-UP.—The U.D.C. of Enfield invite tenders for making-up the private street known as Burleigh-road (part of), Enfield. Plans, etc., can be seen, forms of tender, etc., obtained, on application to Mr. Richard Collins, the Council's Surveyor, Public Offices, Enfield, Middlesex.

DECEMBER 9.—**Hale.**—MAKING-UP.—Hale U.D.C. invite tenders for the making-up of a portion of Moss-lane Hale. Plans, etc., can be seen, and bills of quantities, etc., can be obtained, on the payment of a deposit of 1*l.* 1s., at the office of the Council's Surveyor, Mr. S. A. Pickering.

DECEMBER 9.—**Newport (Mon.).**—STREET WORKS.—The Corporation invite tenders for the execution of private street works in Oswald-road and Kingsmill-lane. Plans, etc., to be seen at the Borough Engineer's Office, where bills of quantities may be obtained upon production of the Borough Treasurer's receipt for 10s. 6d.

DECEMBER 9.—**Twickenham.**—PRIVATE STREET IMPROVEMENT WORKS.—The Council invite tenders for street works:—(1) Cambridge-road; (2) Clevedon-road. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the office of Mr. Fred W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham, and the payment at office of Mr. H. Jason Saunders, Clerk to the Council, Town Hall, Twickenham, of a deposit of 1*l.* 1s.

✱ DECEMBER 11.—**Wimbledon.**—SANITARY CONVENIENCE.—The Wimbledon Corporation invite tenders for erection of an overground sanitary convenience. See advertisement in this issue for further particulars.

DECEMBER 12.—**Middlestone.**—FOOTPATHS.—The Middlestone P.C. invite tenders for the levelling, making, and completing footpath between Mr. John Lindsay's Moors and Salter's-lane, Middlestone Moor. Mr. Richard Cheesmond, Clerk, 15, Oak-terrace, Leasingthorne.

✱ DECEMBER 13.—**Camberwell.**—ROAD-MAKING, ETC.—The Camberwell B.C. invite tenders for work in connexion with certain roads within the Borough. See advertisement in this issue for further particulars.

DECEMBER 13.—**Lyndhurst.**—DRAIN.—The C.C. of Southampton invite tenders for the construction of a surface-water drain at Lyndhurst. Plan and specification at the office of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. A deposit of 2*l.* 2s. will be required. Cheque, payable to the Hants C.C., and crossed Bank of England.

DECEMBER 13.—**Manchester.**—DRAINAGE.—The Corporation invite tenders for the execution of general contractors' and plumbers' work that may be required in connexion with the drainage of houses and other premises, for a period of three months. Forms of tender, etc., for the districts of Gorton and Levenshulme may be obtained, and samples of work and materials seen, on application to Mr. H. Prescott, Manager of the Drainage, etc., Department, on payment of 1*l.* 1s.

DECEMBER 13.—**Stockton-on-Tees.**—PRIVATE STREET IMPROVEMENTS.—The Corporation invite tenders for private street improvements works. Plans, etc., may be seen, and quantities and forms of tender obtained, from Mr. M. H. Sykes, Borough Engineer, Town Hall.

✱ DECEMBER 15.—**Hammersmith.**—ROADS.—The Hammersmith B.C. invite tenders for making-up and paving sect. 1 of Wormholt-road. See advertisement in this issue for further particulars.

DECEMBER 15.—**Holywell Green.**—DRAINAGE.—Drainage, including manholes, etc., at Brookroyd Mills, Holywell Green. Plans, etc., will lay for inspection, and bills of quantities may be obtained at offices of Messrs. Chas. F. L. Horsfall & Son, architects, Lord-street-chambers, Halifax.

DECEMBER 20.—**Newport.**—WATER MAIN.—The Isle of Wight Hospital Board invite tenders for providing and laying about 250 yds. of 3-in. water main, with the necessary fittings, from the 7-in. main at Foster's-corner, Fairlee-road, Newport, to the Hospital site. A plan and specifications of the works may be seen at the office of the Board's Architect, Mr. S. R. Cocks, No. 5, St. Thomas-street, Ryde.

JANUARY 1.—**Pencoed and Coychurch.**—WATER-WORKS.—Penybont R.D.C., Bridgend, invite tenders for the laying, jointing, and completing of about eleven miles of steel-tube water mains. Plans can be seen, and specifications, etc., obtained, from the Engineer, Mr. Eiryn W. Davies, "Kingston," Coity road, Bridgend, upon payment of the sum of 1*l.* 1s. The Engineer will be prepared to meet intending contractors at Pencoed Station on Monday, December 20, at 9.15 a.m., to go over the ground.

✱ JANUARY 3.—**Sawbridgeworth.**—SEWERAGE WORKS.—The Sawbridgeworth U.D.C. invite tenders for sewerage works. See advertisement in this issue for further particulars.

Digitized by Google

STONES, MATERIAL, AND STORES.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 6. — **Broadstairs.** — LIMESTONE TAR PAVING.—Broadstairs and St. Peter's U.D.C. invite tenders for supplying and laying 1,090 super. yds. or thereabouts of limestone tar paving at various roads within the district in accordance with the plan, etc., prepared by the Town Surveyor, Mr. Howard Hurd, C.E., which can be seen at his office.

DECEMBER 6.—**London.**—STEEL MATERIALS.—Burma Railways Company, Ltd., Board of Directors invite tenders for the supply of steel material. For each specification a fee of 1*l.* will be charged, which will not be returned. Mr. W. Hone, Managing Director, No. 199, Gresham House, E.C.

DECEMBER 6.—**Londonderry.**—PIPES.—The Council of the County Borough of Londonderry invite tenders for the supply of cast-iron pipes in accordance with specification, etc., to be obtained from Mr. M. A. Robinson, C.E., City Engineer, Guildhall, Londonderry.

DECEMBER 6.—**Sunderland.**—WHINSTONE.—Sunderland R.D.C. invite tenders for the periodical supply and delivery of 2½-in. hand-broken whinstone and ½-in. blast furnace slag chippings. Samples of stone are to be forwarded, carriage paid, to the Surveyor, Mr. T. Young, at these offices. Forms of tender may be obtained from Mr. J. C. Wilson, Clerk to the Council. Offices, 17, John-street, Sunderland.

DECEMBER 7.—**Bootle.**—PAVING MATERIAL.—The Corporation of Bootle invite tenders for the supply of granite paving materials. Forms of tender may be obtained at the office of Mr. B. J. Wolfenden, A.M.Inst.C.E., Borough Engineer, Town Hall.

DECEMBER 7.—**London.**—STORES.—The South Indian Railway Company, Ltd., invite tenders for the supply of stores, bridge work, etc. Specifications and forms of tender may be obtained at the company's offices, 91, York-street, Westminster, S.W. A charge, which will not be returned, will be made of 1*l.* for each copy of specification. Copies of the drawings may be obtained at the office of Mr. Robert White, M.Inst.C.E., consulting engineer to the company, 3, Victoria-street, Westminster, London, S.W., on payment of 5*s.* per sheet.

DECEMBER 8. — **Macclesfield.**—DRAIN PIPES.—The Corporation invite tenders for the supply of drain pipes, cement, bricks, iron and steel, timber, etc. Forms of tender can be obtained at the Borough Surveyor's Office.

DECEMBER 9.—**Nottingham.**—STORES.—The Works and Ways Committee invite tenders for the supply of stores and materials. Forms of tender may be obtained on applying to Mr. Arthur Brown, M.Inst.C.E., City Engineer, Guildhall, Nottingham, on payment of a deposit of 5*s.* each.

DECEMBER 10. — **Ceylon.** — RAILS, ETC.— The Crown Agents for the Colonies, acting on behalf of the Government of Ceylon, invite tenders for the supply of about 4,092 tons of 80 lb. Bessemer acid steel rails and angle fishplates. Forms of tender, etc., may be obtained on application at the Office of the Crown Agents for the Colonies, Whitehall-gardens, London, S.W., on payment of a deposit of 1*l.*

DECEMBER 10.—**Leicester.**—STORES.—The Corporation of Leicester invite tenders for the supply of materials. Forms of tender, etc., may be obtained on deposit of 10*s.* Cheques, etc., should be made payable to the Borough Treasurer.

DECEMBER 10. — **Llwynypia.** — STORES. — The Directors of Cambrian Collieries, Ltd., and others invite tenders for the supply of stores and materials for a period of six months. Forms of tender, etc., may be seen at the General Offices, Llwynypia.

* DECEMBER 11.—**London, S.E.**—MATERIALS.—The House Committee of Guy's Hospital invite tenders for supply of material for twelve months, from January 1, 1910. See advertisement in this issue for further particulars.

DECEMBER 11. — **Middlesbrough.** — STORES.—Tees Conservancy Commissioners invite tenders for the supply of stores and materials. Forms of tender, etc., can be obtained on application, Mr. John H. Amos, Secretary, Board-room, Middlesbrough.

DECEMBER 13. — **Madras.** — PIPES, ETC.—The Corporation of Madras invite tenders for the supply of English stoneware pipes and specials. Full particulars, etc., can be obtained from Messrs. James Mansergh & Sons, Agents to the Corporation, 5, Victoria-street, Westminster, S.W., on payment of 5*s.* per set, which will not be returned.

DECEMBER 14.—**Hull.**—MATERIALS.—The Committee of Visitors of the Hull City Asylum invite tenders for the supply of articles. Printed forms of tender may be obtained from the Town Clerk's Department, at the Town Hall.

DECEMBER 14. — **Middleton.** — CEMENT. — The Corporation of Middleton invite tenders for the supply of 250 tons of cement. Further particulars and form of tender may be obtained on application to Mr. W. Welburn, Borough Surveyor, Town Hall, Middleton.

DECEMBER 15.—**Maidstone.**—BROKEN ROAD STONE AND TARRED MACADAM.—The Bridges and Roads Committee of the C.C. invite tenders for the supply of materials. Tenders are also invited for tarred macadam. Forms will be furnished upon application to the County Surveyor, Maidstone.

DECEMBER 16.—**London.**—GRANITE.—The Guardians of the Poor of the Parish of Fulham invite tenders for the supply of 450 tons of Guernsey granite spalls (large). Forms to be obtained at office of Mr. E. J. Mott, Clerk to the Guardians, No. 129, Fulham Palace-road, W.

DECEMBER 18.—**Merthyr Tydfil.**—PIPES.—Tenders are invited by the Corporation for the supply of about 300 tons of cast-iron pipes and specials for water mains. Forms of tender and specifications may be obtained upon application to the Borough Engineer, Merthyr Tydfil.

DECEMBER 18. — **West Sussex.** — MATERIALS AND CARTAGE.—The Roads and Bridges Committee invite tenders for the supply of (1) broken quartzite, granite; (2) picked surface flints and pit flints; (3) cartage; (4) team labour. Forms of tender may be obtained on application to Mr. H. W. Bowen, County Surveyor, County Surveyor's Office, Worthing-road, Horsham.

DECEMBER 20. — **Nottingham.** — STORES. — The Guardians of the Poor of the City of Nottingham invite tenders for supplies of engineers' materials, ironmongery, plumbers' materials, and tinware. Forms obtainable at the Poor Law Offices, Shakespeare-street.

JANUARY 1. — **Reading.**—ROAD MATERIALS.—Berkshire C.C. invite tenders for the supply of broken road materials. On the receipt of a stamped addressed foolscap envelope, forms of tender, etc., will be forwarded by the County Surveyor.

NO DATE. — **Newcastle-on-Tyne.** — STONE.— Northumberland C.C. invite tenders for supplying, breaking, and carting stones for the maintenance of main roads during the year ending March 31, 1911. For forms of tender, etc., apply to the County Surveyor, Moothall, Newcastle-upon-Tyne.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale
*STOCK OF IRONMONGERY, ETC., OXFORD-STREET, W.—On the Premises	Henry H. Collier & Madge	Dec. 6
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	Dec. 8
*BLDR. & CONTR.'S STOCK, PLANT, & MCHRY., EDGWARE-RD., W.—On the Premises	H. W. Smith	Dec. 9
*CONTRACTOR'S PLANT—At 192, Hercules-road, Lambeth	B. Norman & Son	do.
*BUILDER'S STOCK AND PLANT, CROYDON—On the Premises	Blake, Son, & Williams	Dec. 14
*STONEMASON'S PLANT AND STOCK, MANSFIELD—On the Premises	J. H. Bradwell & Sons	Dec. 17

LAW REPORTS.—*Continued from page* 624.

ACTION FOR ALLEGED SLANDER BY CEMENT COMPANY.

THE hearing of the case of the Queenborough Cement Company *v.* Page was concluded in the King's Bench Division on the 27th ult., before Mr. Justice Channell and a common jury.

This was an action brought by the plaintiffs against the defendant, Mr. Henry William Page, for damages for alleged slander, the plaintiffs' case being that whilst the defendant was employed as the clerk of the works upon the occasion when an extension was being built to the Croydon Workhouse at Thornton Heath he made a statement to the effect that the cement supplied by the plaintiffs for the building was foreign rubbish. Defendant denied uttering the words complained of, and alternatively pleaded that they were uttered on a privileged occasion.

Evidence was given on behalf of the plaintiffs that the defendant had stated to Mr. W. E. Lindley, manager to Messrs. Pattison & Son, the contractors for the building, that the plaintiffs did not make English cement, but sent out "a lot of foreign muck."

At the close of the plaintiffs' case the defendant went into the witness-box, and said that until he was told that the cement was to come from the Queenborough Company he had never heard the name, and he declined to allow the cement to be used before tests were carried out. He made inquiries, and afterwards said that the result of the inquiries was not satisfactory. He never described the cement as "foreign rubbish." He made what observations he did in the discharge of his duties.

Cross-examined: He made the remarks upon the information of a friend. He said to the contractor that he had been informed that the plaintiffs had supplied inferior cement to a firm of merchants. He never said anything about the cement being foreign.

Mr. Bernie, a member of the firm of Messrs. Bernie & Sons, architects, examined, said it was most important that cement should be of good quality. He did not think that the defendant had exceeded his duties in any way.

In the result the jury returned a verdict for the defendant, and judgment was entered accordingly.

Patents.

APPLICATIONS PUBLISHED.*

23,214 of 1908.—John Thomas Scattergood: Kitchen ranges.

23,416 of 1908.—John Thomas Perks, Ernest Benjamin Josiah Gould, and Albert Henry Male: Burglar-proof blind or shutter for windows and the like.

23,433 of 1908.—James Johnstone Fraser: Fireproof composition for floors, walls, paving and general structural work, and for other purposes.

23,481 of 1908.—Charles Burton Whitney: Ball-cocks.

24,880 of 1908.—William Abraham McCormick: Stoves, fireplaces, and the like.

26,604 of 1908.—Charles Shaw and Francis Joseph Gibbons: Fastenings for doors, windows, and the like.

28,127 of 1908.—Douglas Mancel Strode, executor of the late William Winstanley Strode: Wall conduits for pipes, wires, or the like.

529 of 1909.—John Edward Lewis Ogden: Steam traps.

1,013 of 1909.—Allen James McDougall: Bolt or fastening applicable to double doors, such as French windows, bookcases, and the like.

1,833 of 1909.—John Leeming and Joseph Leeming: Tiles for facing or lining walls, ceilings, and other surfaces.

1,923 of 1909.—Frank Pascall: Combined domestic grates and cooking stoves.

3,378 of 1909.—Archibald Harvey: Reversible windows.

4,929 of 1909.—Jesse William Baker: Joint for casement window stays and similar articles.

4,975 of 1909.—Heinrich Philipp Hermann: Process and composition for the production of a relief coating on surfaces.

6,303 of 1909.—Heinrich Weygand: Joints and connexions for crossed or abutting parts.

6,803 of 1909.—James Scott, jun.: Apparatus for moulding pipes and like internally-cylindrical articles in concrete or the like.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

6,905 of 1909.—Ernest Chadderton: Valve discharge apparatus for flushing water-closets.

8,566 of 1909.—Izidor Kertesz: Locks.

8,826 of 1909.—William Turnbull: Flushers for water-closets and the like.

9,237 of 1909.—Richard Whorton Hubbard: Brackets.

10,112 of 1909.—Albert James Farr (communicated by Mathias Peters and Karl Gruber): Roller mill for producing tubes.

13,424 of 1909.—Leona Borth: Fencing.

14,535 of 1909.—William Edward Evans (communicated by Minimax Consolidated, Ltd.): Colour or paint spraying apparatus.

15,338 of 1908.—David Price: Machine for the manufacture of bricks.

17,135 of 1909.—Rudolph Niemoller and Albert Uhe: Plaster-supporting structures for ceilings and the like.

17,634 of 1909.—Joseph Duffy: Wood-flooring blocks.

17,656 of 1909.—Edwin Dodge Whitney: Devices for forming concrete and like piles.

18,832 of 1909.—George Lincoln Robinson and James Dean: Door checks and means for holding doors in the closed position.

20,033 of 1909.—Albert Edward Woolley: Draught, dust, and rain excluders for doors.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

November 22.—By KEMSLEY.

Kingsland.—20, 22, and 30, St. Jude-st., f., y.r. 75*l.* 12*s.*...	£830

By ERNEST OWERS.

Hampstead.—32, Belsize-sq., u.t. 42 yrs., g.r. 18*l.*, y.r. 80*l.*	400

By RICHARD OUGHTON.

Canning Town.—40, Ordnance-rd. (s.), f., w.r. 4*l.* 4*s.*	385

November 23.—By C. RAWLEY CROSS & Co.

Stepney.—27 to 34, Ann-st., u.t. 32½ yrs., g.r. 20*l.*, w.r. 282*l.* 2*s.*	755

By MARK LIELL & SON.

Manor Park.—Salisbury-rd., f.g. rents 25*l.* 4*s.*, reversion in 88 yrs.	545
Ruskin-av., f.g. rents 40*l.*, reversion in 87 yrs.	850
Walton-rd., f.g. rents 35*l.*, reversion in 88 yrs.	715
Stratford.—29 to 43 (odd), Rosher-rd., u.t. 37 yrs., g.r. 24*l.*, w.r. 236*l.* 12*s.*	750
Bow.—103, Morville-st., u.t. 31½ yrs., g.r. 3*l.* 10*s.*, w.r. 33*l.* 16*s.*	105

Digitized by Google

By FREDERICK WARMAN.

Highbury.—144 and 146, St. Paul's-rd., f., y. and e.r. 90*l*. £1,085
East Ham.—69 and 71, Stafford-rd., f., w.r. 62*l*. 8s. 370
Kentish Town.—71, Wilkes-rd., u.t. 43 yrs., g.r. 6*l*., y.r. 80*l*. 205
Islington.—426, Essex-rd. (s.), u.t. 11 yrs., g.r. 3*l*. 15s., y.r. 50*l*. 170

By DEBENHAM, TEWSON, RICHARDSON, & CO.

Holloway.—Tollington-pk., f.g.r. 12*l*., reversion in 13 yrs. 1,450
Tollington-pk., f.g.r. 14*l*., reversion in 49 yrs. .. 330
Tollington-pl., f.g.r. 21*l*., reversion in 25 yrs. .. 630
Tollington-pl., f.g. rents 50*l*. 8s., reversion in 48 to 51 yrs. 1,300
Tollington-pl., f.g.r. 15*l*., reversion in 47 yrs. .. 350
Tollington-pk., f.g.r. 56*l*. 14s., reversion in 20 yrs. 2,100
Turle-rd., f.g. rents 69*l*., reversion in 48 yrs. .. 1,880
Turle-rd., f.g.r. 55*l*. 13s., reversion in 41 yrs. .. 1,355
Wray-cres., f.g.r. 37*l*., reversion in 64 yrs. 920
Turle-rd., f.g.r. 60*l*. 18s., reversion in 51 yrs. .. 1,440
Tollington-pk., f.g. rents 88*l*. 4s., reversion in 20 yrs. 3,150
Seven Sisters-rd., f.g. rents 113*l*. 8s., reversion in 45 yrs. 3,000
Thane-villas, f.g.r. 35*l*., reversion in 87 yrs. ... 775
Thane-villas, f.g. rents 63*l*., reversion in 147 yrs. 1,400
Thane-villas, f.g. rents 72*l*. 9s., reversion in 145 yrs. 1,695
Thane-villas, f.g.r. 10*l*. 16s., reversion in 40 yrs. 500
Thane-villas, f.g.r. 42*l*., reversion in 92 yrs. ... 1,000
Seven Sisters-rd., f.g. rents 65*l*. 10s., reversion in 85 yrs. 1,580
Rotherfield, Sussex.—Lower Greenhouse Farm, freehold rental of 16*l*. 470
Part of Upper Greenhouse Farm, 39 acres, f.... 1,100
Millers Haw, 1 a. 1 r. 19 p., f. 150
Holloway.—Thane-villas, f.g. rents 25*l*. 4s., reversion in 145 yrs. 625
Stratford.—Chobham-rd., f.g. rents 51*l*. 3s., reversion in 151 yrs., etc. 1,200
Wycliffe-rd, f.g. rents 90*l*., reversion in 42 and 52 yrs. 1,880
Temple Mill Field, 3 a. 1 r. 33 p., f. 505
Clerkenwell.—Eagle-ct., f.g.r. 7*l*. 10s., reversion in 61 yrs. 190
Willesden.—Bruce-rd., f.g. rents 84*l*., reversion in 69 yrs. 1,960

November 24.—By F. W. BALCH.

Kentish Town.—35, Hadley-st., u.t. 49 yrs., g.r. 5*l*., y.r. 32*l*. 270
Hornsey-lane.—Cromartie-rd., f.g.r. 8*l*. 8s., reversion in 70 yrs. 190
Harringay.—111, 115, 117, 119, and 121, Allison-rd., u.t. 80 yrs., g.r. 35*l*., y.r. 152*l*. 1,160

By DYER, SON, & HILTON.

Blackheath.—46, Lee-rd., u.t. 48 yrs., g.r. 20*l*., p. 215

By RUSHWORTH & BROWN.

Kensington.—2, Bedford-gdns., f., y.r 55*l*. 740

By DOUGLAS YOUNG & CO.

Tooting.—Fairlight-rd., f.g. rents 27*l*. 8s. 6d., reversion in 93 yrs. 610
Norwood.—29 and 31, Woodland-rd., u.t. 66 yrs., g.r. 12*l*., y.r. 60*l*. 300

November 25.—By EDWIN EVANS & SONS.

West Kensington.—126 and 128, Blythe-rd., u.t. 44½ yrs., g.r. 16*l*., w.r. 93*l*. 12s. 310
Battersea.—5, Dorothy-rd., u.t. 78 yrs., g.r. 7*l*. 10s., y.r. 36*l*. 300

By HERBERT HOOKEY & CO.

Bermondsey.—9, Bermondsey-st., f., e.r. 48*l*. .. 410

By C. C. & T. MOORE.

Ilford.—41, Grange-rd., u.t. 984 yrs., g.r. 4*l*., w.r. 24*l*. 14s. 145
2, 3, and 4, Khartoum-ter., f., w.r. 74*l*. 2s. .. 455
Plaistow.—70, Stephens-rd. (s.), f., y.r. 29*l*. 18s. 215

By NEWBON, SHEPHARD, & EDWARDS.

Battersea.—Battersea Rise, The Rising Sun (b.h.), f., y.r. 50*l*. 1,150
Eltham.—92, High-st. (s.), f., y.r. 63*l*. 1,185
4 and 5, Elizabeth-ter., f., w.r. 36*l*. 8s. 390
Stockwell.—10 and 12, Stockwell-gr., u.t. 20 yrs., g.r. 5*l*. 5s., w.r. 54*l*. 12s. 205

By J. A. & W. THARP.

Mile End.—133, Devonshire-st., f., w.r. 33*l*. 16s. 235
Bow.—9, Lichfield-rd., u.t. 33 yrs., g.r. 1s., y.r. 28*l*. 180
Walworth.—2, Bodley-st., u.t. 33 yrs., g.r. 5*l*., w.r. 46*l*. 16s. 1,980

By STIMSON & SONS.

Walworth.—Lorrimore-st., i.g.r. 200*l*., u.t. 44 yrs., g.r. 70*l*. 12s. 800
Old Kent-road.—63, Marlborough-rd., f., w.r. 36*l*. 8s. 750
1, 5, and 7, Canterbury-rd., f., w.r. 89*l*. 14s. .. 240
23 and 25, Wagner-st., f., w.r. 36*l*. 8s. 230
New Cross-road.—Nos. 3 and 5, u.t. 14½ yrs., g.r. 18*l*., y. and w.r. 100*l*. 2s. 105
Southwark.—40 and 42, Swan-st., u.t. 7 yrs., g.r. 7*l*. 10s., y. and w.r. 72*l*. 18s. 325
69 to 75 (odd), Union-st. (s.), u.t. 9 yrs., g.r. 85*l*., y.r. 204*l*. 10s. 240
Kennington.—27, Faunce-st., u.t. 55 yrs., g.r. 6*l*., e.r. 35*l*. 465
Peckham.—6 and 7, McKerrell-rd., u.t. 56 yrs., g.r. 10*l*., w.r. 78*l*. 230
Norwood.—9, Avenue-rd., u.t. 64½ yrs., g.r. 12*l*. 10s., y.r. 55*l*. 960
Stockwell.—72, 74, and 76, Lingham-st. (s.), f., y.r. 84*l*. 9s. 4,800
By GRIMLEY & SON (at Birmingham).
Birmingham, Warwick.—9 and 10, Edgbaston-st., f., y.r. 235*l*. 3,250
107, Dale-end, f., y.r. 175*l*. 3,075
50 and 51, Dale-end, f., y.r. 150*l*. 1,120
Heath Mill-la., f.g. rents 47*l*. 7s. 11d., reversion in 58 yrs. 4,700
Oxford-st., Iron Plate Works, f. 940
Bordesley, Warwick.—130 and 131, High-st., and two houses in rear, f., y. and w.r. 95*l*. 14s. 6d. 260

November 26.—By FOWLER, RICHARDSON, & POTTIER.

Hackney.—22, Darnley-rd., u.t. 30 yrs., g.r. 6*l*. 6s., y.r. 40*l*. .....

By MAY & PHILPOT.

New Southgate.—5, Albert-villas, f., y.r. 32*l*. .. £420

By ALFRED PREECE & SON.

South Kensington.—70, Redcliffe-gdns., u.t. 57 yrs., g.r. 27*l*. 10s., y.r. 100*l*. 650

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 8 0	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 6 0	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Best Dipped Salt Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	" less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
Scappled random blocks	3 0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×16 best blue Bangor	13 2 6	per 1000 of 1200 at r.d
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42	0 per 1000 at rly. dep.
Hip and Valley tiles	3	7 per doz. "
Best Broseley tiles	50	0 per 1000 "
Do. Ornamental tiles	52	6 " "
Hip and Valley tiles	4	0 per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6 per 1000 "
Do. Ornamental do.	60	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	0 " "
Best Red or Mottled Staffordshire do. (Peakes)	51	9 per 1000 "
Do. Ornamental do.	54	6 " "
Hip tiles	4	1 per doz. "
Valley tiles	3	8 " "
Best "Rosemary" brand plain tiles	48	0 per 1000 "
Best Ornamental tiles	50	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	8 " "
Best "Hartshill" brand plain tiles, sand-faced	50	0 per 1000 "
Do. pressed	47	6 " "
Do. Ornamental do.	50	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	6 " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6 per 1000 "
Hand-made sand-faced	45	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	6 " "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 0 0	... 15 10 0
Deals: best 3 by 9	13 10 0	... 14 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	... 12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in.	9 10 0	... 10 10 0
2 in. by 4½ in. and 2 in. by 5 in.	9 0 0	... 10 0 0
Foreign Sawn Boards—		
1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft 5 0 0	... 5 10 0
Seconds	4 10 0	... 5 0 0
Small timber (8 in. to 10 in.)	3 17 6	... 4 0 0
Small timber (6 in. to 8 in.)	3 5 0	... 3 10 0
Swedish balks	2 12 6	... 3 0 0
Pitch-pine timber (30 ft. average)	4 10 0	... 5 5 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 10 0	... 25 10 0
3 in. by 9 in.	22 10 0	... 23 10 0
Battens 2½ in. and 3 in. by 7 in.	17 0 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0	... 20 0 0
3 in. by 9 in.	18 0 0	... 19 10 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	... 15 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	14 0 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	... 12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 10 0	... 22 10 0
Do. 3 in. by 9 in.	18 10 0	... 19 10 0
Battens	14 0 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	... 17 10 0
Do. 3 in. by 9 in.	15 0 0	... 16 0 0
Battens	11 10 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	... 14 10 0
Do. 3 in. by 9 in.	13 0 0	... 14 0 0
Battens	10 10 0	... 11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	15 0 0	... 16 0 0
" " 3 in. by 9 in.	14 0 0	... 14 10 0
Battens	11 10 0	... 12 10 0
Second white deals, 3 in. by 11 in.	14 0 0	... 15 0 0
" " 3 in. by 9 in.	13 0 0	... 14 0 0
Battens	10 10 0	... 11 0 0
Pitch-pine: deals	19 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak logs—		
Large, per ft. cube	0 3 0	... 0 3 9
Small " "	0 2 6	... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¾ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 10	... 0 1 1
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak per load	18 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3488. DECEMBER 11, 1909.

Contents.

	PAGE
St. Genou, Indre	631
The Development Bill	633
Notes	633
Novel Method of Constructing Small Buildings in Reinforced Concrete	636
The Builders' Benevolent Institution	637
Industrial Education and Apprenticeship	638
Penrhyn Old Hall	639
Architects' Technical Bureau: Permanent Building Exhibition	640
Hot Water Service Installations	640
Exhibitions	640
The London County Council	640
Applications under the London Building Acts, 1894 to 1909	640
Architectural Societies	641
Engineering Societies	641
Meetings	642
Fifty Years Ago	642
Court of Common Council	642
Illustrations:—	
Church of St. Martin-in-the-Fields	642
"Upton Grey," Hants	643
Clapham Secondary School for Girls	644
Legal Column	645
Trade Catalogue	646
Books Received	646
Competition News	646
Correspondence:—	
The Ventilating Trap on Drains	646
Measuring Slating and Tiling	646
Frieze of the Parthenon	646
London and Provincial Builders' Information Centre	647
Master Builders' Associations, etc.	647
Education Committee of the London County Council	647
London and District Borough Councils	647
Metropolitan Asylums Board	648
Metropolitan Water Board	648
Projected New Buildings in the Provinces	648
London County Council Education Committee	649
Obituary	649
General Building News	649
Sanitary and Engineering News	650
Miscellaneous	651
Law Reports:—	
Architect's Libel Action	652
Action against Builders and Contractors	652
Claim for Rent for Land of Highway	652
Patents	652
List of Competitions, Contracts, etc., Open	653
Some Recent Sales	655
Prices Current	655
Tenders	656

Illustrations.

Late Renaissance Churches of London.—XII.

St. Martin-in-the-Fields.

"Upton Grey," Hants: Two Views. Mr. Ernest Newton, F.R.I.B.A., Architect.

London County Council Clapham Secondary School for Girls. Mr. T. J. Bailey, F.R.I.B.A., Architect.

Illustrations in Text.

	PAGE
St. Genou, Indre:—	
Fig. 1. Plan	631
Fig. 2. The Choir	632
Fig. 3. Capitals	632
Fig. 4. Exterior of Choir and Apses	633
A New Method of Concrete Construction:—	
Building with Part of the Walls up and Others Ready to be Raised	636
Figs. 1 to 3	636
Figs. 4 and 5	637
Penrhyn Hall, Llandudno	639
Plan of St. Martin-in-the-Fields	642
"Upton Grey," Hants: Elevation of House before Alterations; First Floor and Ground Floor Plans	643
Ditto. Centre Portion of Entrance Front	644
Clapham Secondary School. Plans	645

St. Genou, Indre.

THE abbey church of St. Genou is reckoned among the thirty most interesting and finest churches in France by the Commission des Monuments Historiques, and has the reputation of being one of the finest and purest types of Romanesque architecture in Berry. It lies some 30 kilometres east north-east of Chateauroux, near the left bank of the Indre, where the Cité or Ru de Sougé falls into it. The little town, scarcely more than a village, is served by a station on the railway to Loches and Tours, Palluau-St. Genou, the first-named place lying on the hillside some distance to the left, distinguished from a distance by a castle, portions of which date from the XIIth century, though the greater part is of the XVth, to which period the fine doorway belongs. The vaults and walls of the chapel are ornamented with curious paintings. There is also in the place a church, of which portions were built in the XIVth century, with a curious Gothic seignorial chapel of 1503 attached with remains of frescoes and glass. Not far away is a church with an early transept and central tower, perhaps of late XIth or early XIIth century work, converted into farm buildings.

The saint from whom the abbey and the town of St. Genou were named was S. Genulphus, first bishop of Cahors, who had retired to live as a hermit near a little spring not far away, where the site of his cell is still pointed out. The foundation of the monastery is said to date from the Vth century by some, but it seems more probable that it began with a Benedictine foundation made by Wifred, Count of Bourges, and Ode his wife, about 828 at a place called "l'Estrée" (*strata*, a paved road), near the Roman road from Chabris to Poitiers, further south, where the monks' cemetery remained for many years, and where a XIIth-century funerary lantern tower nearly 30 ft. high still existed a few years ago, called the "lanterne des moines." The monks came from St. Savin in Poitou. The relics of S. Genou appear to have been brought hither about 870, but the monastery was devastated several times by robber bands, generally Norman, during the IXth and Xth centuries, and the monks sought refuge at St. Pierre-le-Moutier in the Nivernais, carrying the relics with them.

Finding the abbey a heap of ruins on their return, they determined to move to the present site, and began to rebuild their church on a magnificent scale. It was sufficiently advanced in 990 for the translation of the relics, but was not dedicated till 1066. Of this church the choir with aisles and eastern apses, the crossing, and portions of the transepts remain (see plan Fig. 1). The nave was pulled down because it was thought to be in a dangerous state, though its destruction has been ascribed to the Huguenots. They indeed visited St. Genou, but respected the abbey, which was suppressed in 1772, and during the Revolution the buildings were sold as national property. The whole of the church as now standing was restored in 1877-78 under M. D. Darcy, with a somewhat superfluous

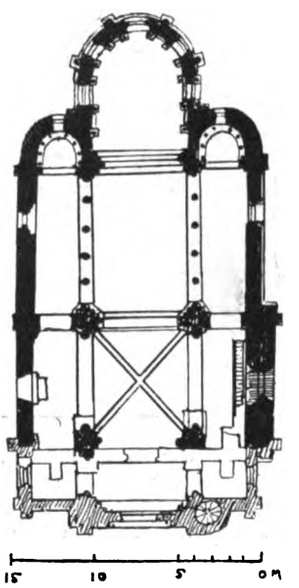


Fig. 1. Plan of St. Genou.

amount of roughly-shaped stones and several additions; but the original portions of the structure are well preserved and exceedingly interesting.

In 1886, in demolishing the high altar for some alterations, a stone was found bearing an inscription in sunk capital letters which, extended, runs thus:—

HIC PAVSAT PRESVL PIVS EXIMIVSQVE GENVLPHVS
QVEM PEPERIT NVMERVS SIBI PONTIFICVM DVODENVS
ECCLESIÆ MATRIS ROMANE FOMITE SANCTI
IMBVTVS SYSTI CVI PAREBAT CHORVS OMNIS
QVO MONITORE SVI SACER HIC VIRTVTE BEAVIT
HOS FINES NOSTROS PRESENTI CORPORE SACRO.

The forms of the C, Q, and N, with the frequent abbreviations and letters enclosed within other letters, suggest the end of the Xth century as its date, in which case it probably is the stone which was placed above the relics when they were deposited here in 990.

The church is entered by descending three or four steps, either from the west or south, the ground having risen. The arches of the crossing are irregular. On one side is a large semicircular arch at

Digitized by Google

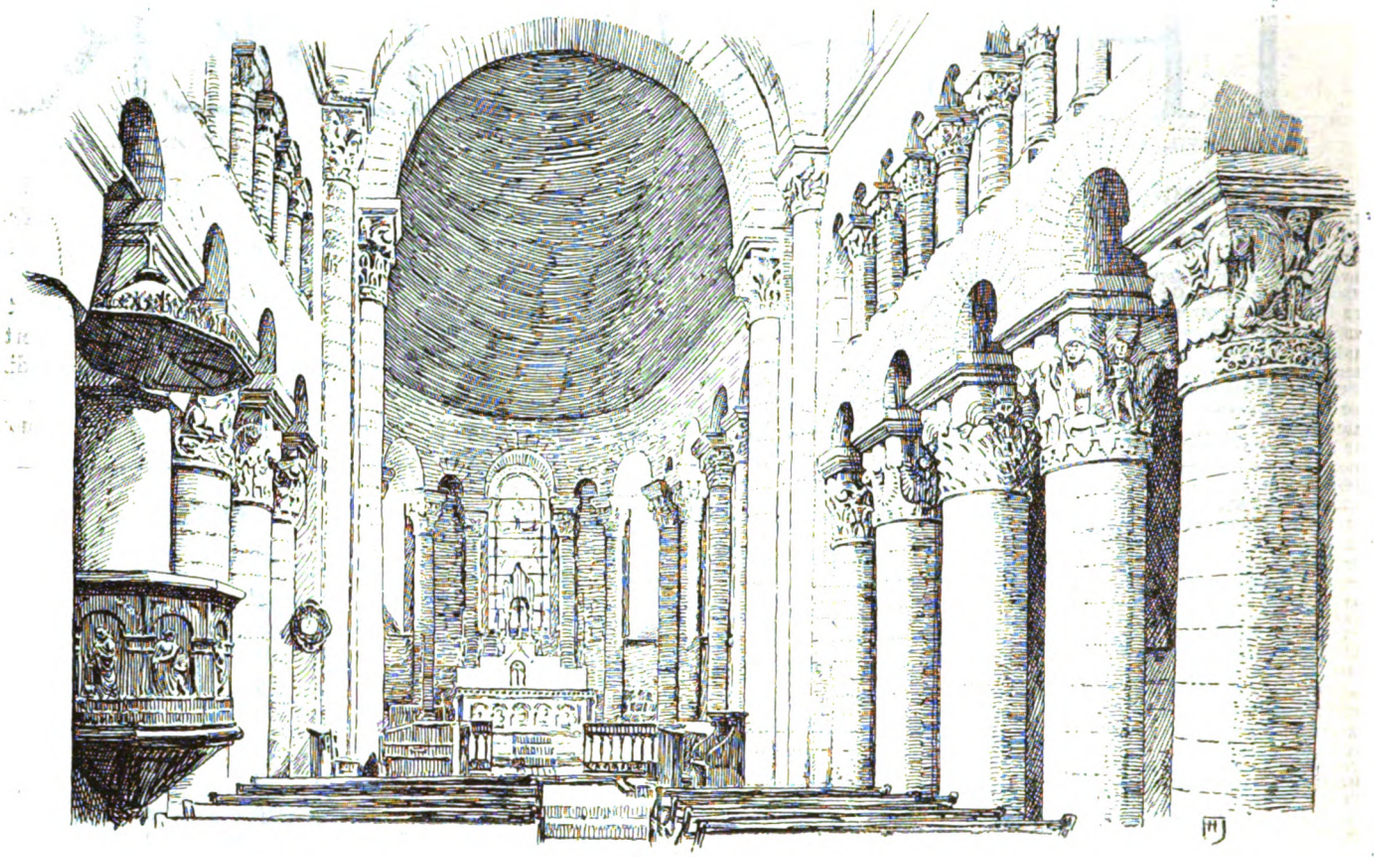


Fig. 2. St. Genou: The Choir.

the level of the choir arcade, with a window above it; on the other, a lofty arch springs from the level of the string of the barrel vault. In a line with the aisle wall is a pair of arches on a central column beneath a large arch; above this is another, a little smaller; both have impost mouldings at the sides, and all are unmoulded. At the end of the XIIIth century this upper arch was filled up and a traceried window inserted, now also filled up. The crossing is vaulted somewhat domically, but with moulded ribs springing from long carved corbels in the angles, one of which bears a figure of a bishop. The arch to the choir is in two orders and very lofty. The choir itself (Fig. 2) is barrel-vaulted on a much higher level than the apse. The arcade rests on five columns on each side with elaborately carved caps and narrow unmoulded semicircular arches; above is a kind of triforium arcade, similarly treated, but with the columns placed irregularly with reference to those below. Higher still is a clearstory of small roundheaded windows surrounded by a roll. The great arch to the apse has the peculiarity that the outside order, with its column and cap, ranges with the string between clearstory and triforium, while the inner arch corresponds to the string at the springing of the apse vault. Above it the wall is decorated with a blind arcading.

The apse is surrounded by a lofty unmoulded arcading with finely-carved caps to the slender columns. It is lighted by five roundheaded windows, the spaces between them being narrow, thus giving variety to the arches above. The side apses have one window and an arcade of small arches set upon a kind of stylobate, some 6 ft. high. The base profiles vary a great deal, from a modification of the attic base to profiles which recall Saxon baluster shafts. All the smaller shafts are turned, and the drums both of the columns of the apse arcade and of the triforium show similar rings and sinkings, suggesting the use of the lathe. The vaults of the aisles are quarter-circle, with supporting semicircular arches at important structural points. The wall of the south aisle has been arcaded with unmoulded arches on columns with carved caps; the lower portion is obliterated by later building. There is no sign of anything of the sort in the north aisle, only a window high up, with one arch by its side. The only places in which mouldings occur are in the abaci and bases of the columns, all of which are elaborately moulded.

The carving of the capitals (Fig. 3) is extraordinary for work of the XIth century, the ornament, as is usual at the period, being much superior to the figure work. One of the caps, that with the pendent palm-leaves, is almost identical with one in the rotunda at Neuvy-St. Sepulchre, a building of the same period, the resemblance being so great as to suggest the same carver having executed both.

The exterior is much disfigured by the hideous slated roof of the crossing, which bears much resemblance in shape to that which disfigures the narthex at St. Benoît-sur-Loire, and the modern rebuildings of portions do not do much to improve it. Still, the arcade of the choir, repeating the character of the triforium arcade within, between the corbelled cornice and the clearstory windows, is a very decorative feature, and the design of the apse has been little meddled with (Fig. 4). Here again there is a corbelled cornice with a well-proportioned arcade beneath it above a

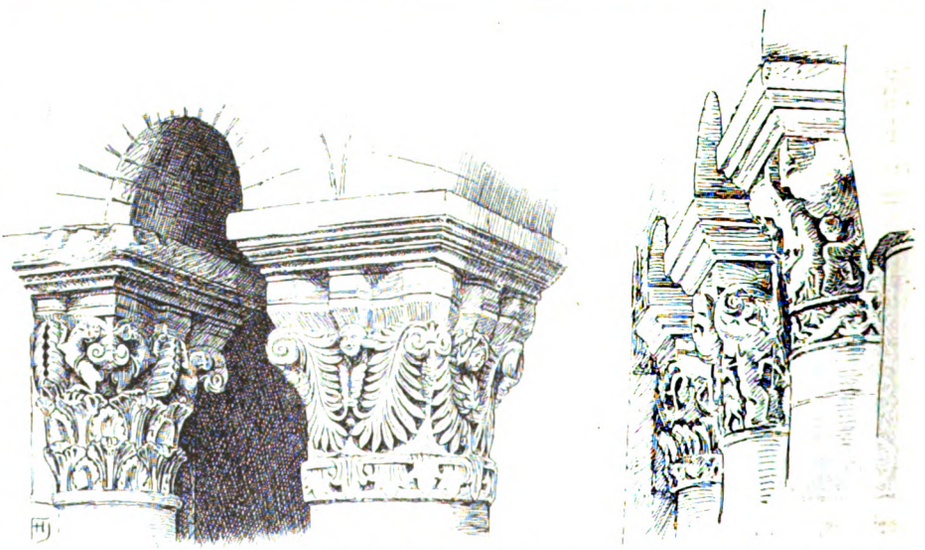


Fig. 3. Capitals, St. Genou.

Digitized by Google

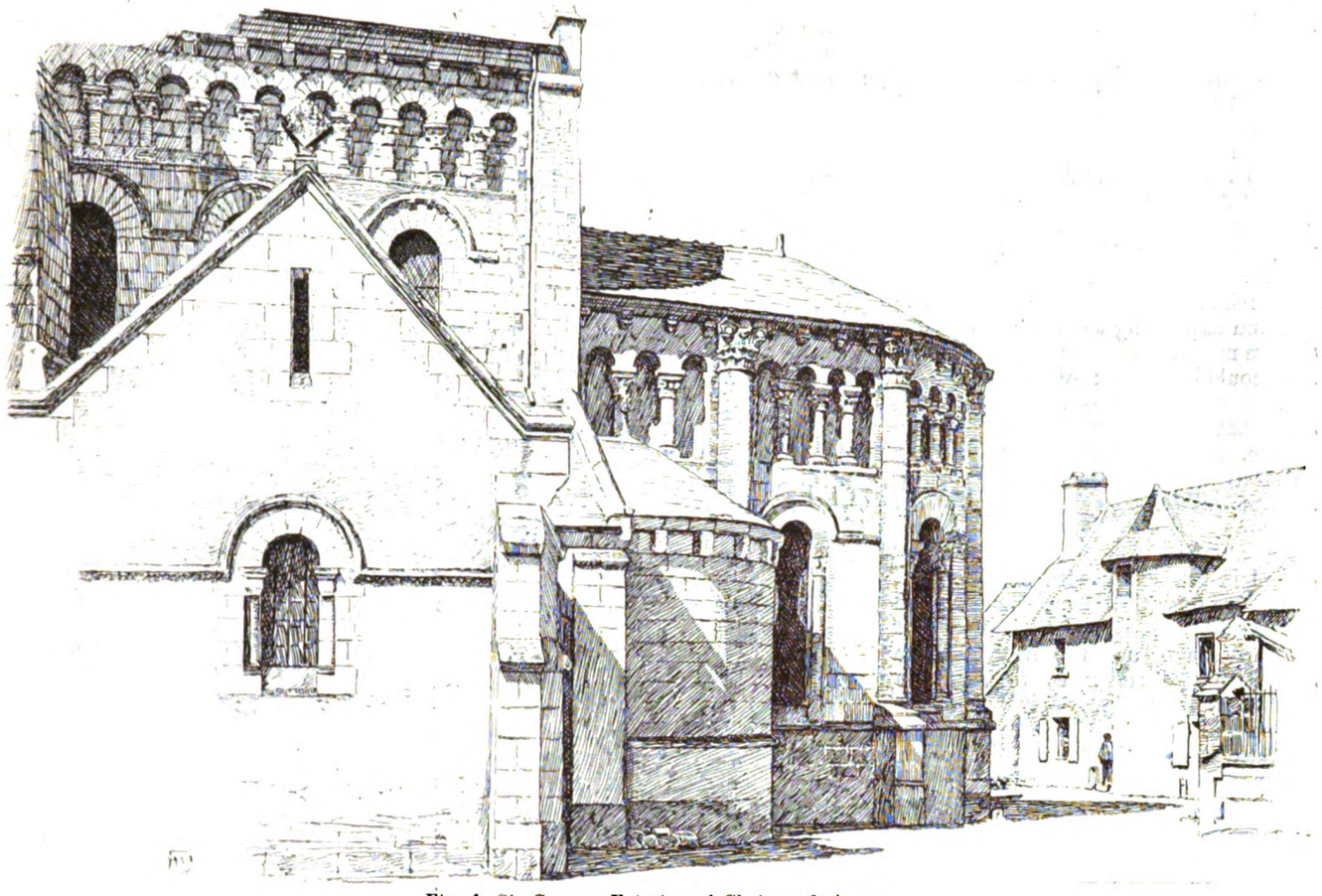


Fig. 4. St. Genou: Exterior of Choir and Apses.

row of rather more ornamented windows, but the cutting of the surface up into bays by engaged columns with finely-cut capitals and the play of light and shade produced by the curving of the surface increase the value of the individual portions of the design, which combine into a very pleasant whole. Our illustration also shows an old house opposite the church, of which there are a few examples remaining in the place, while here and there are cottages surrounded by orchard gardens quite English in appearance.

But the principal interest and glory of St. Genou must always be the remains of its abbey church, and one wonders and laments that it was possible for the splendour of the original building to have been so damaged by the nave being pulled down instead of being repaired.

The plan is copied from that published by the Commission des Monuments Historiques of France, and shows the condition before the alterations and additions of 1877-8.

THE DEVELOPMENT BILL.

THE House of Lords have yielded in not pressing those of their amendments in the Development Bill objected to by the Commons, but it is very doubtful whether the Bill is now as practical a measure as it might be. In a Bill inaugurating an entirely new departure such general words (following specific purposes towards which grants may be made) as "and for any other purpose calculated to promote the economic development of the United Kingdom," appear rather to confer too wide a latitude, but these words have been reinserted. Matters of more importance were, however, dealt with in other clauses, and without referring to them in detail, we may say that in clause 8 the amendment enabling the road authority to make advances towards meeting the extraordinary expenditure incurred by highway authorities on the maintenance of roads in consequence of motor traffic was disagreed with. It certainly would have been more satisfactory had reasons other than the mere question of privilege been assigned for rejecting these amendments.

In the construction of new roads the safeguard of Parliamentary sanction where the County Councils object to the proposed new road has been omitted. This may be reasonable now that by an amendment introduced by the Lords in clause 9 it is clear that the new roads are to be maintained at the cost of the Road Board, but it seems a matter for regret that the power to acquire land to an extent of 220 yds. on each side from the centre of a new road should have been reinserted. Such a power will create a feeling of uncertainty and stimulate opposition, and will unnecessarily depreciate the neighbouring land, since there must be some apprehension as to the purposes to which this surplus land may be put by the Road Board. The safeguards against the compulsory acquisition of lands of corporations and companies were not agreed to, and the amendment to the clause relating to the power to regard the state of the labour market, which would have prevented that being a ground for approving an advance, was struck out. But one of the most important points was that relating to commons. The Lords' amendments to this clause were preferred by the Commons Protection Society. The Solicitor-General summarised these amendments as directing that no common land should be acquired without a provisional order, which, he said, was a proposition the Government could not accept. Open spaces and commons are of increasing national importance, and we cannot but regret that a Government which has carried a Housing and Town Planning Bill should fail to recognise the necessity of scrupulously safeguarding all open spaces. The provision which enables common land to be acquired for the purposes of forestry, if reasonable access is given to it, has been shown to be unsatisfactory. A businesslike scheme of forestry is incompatible with free public access, and the commons in their present condition are an important element in rural life.

NOTES.

The Institute of Architects.

THE last issue of the Institute *Journal* contains a most interesting and valuable article by Sir Charles Nicholson, illustrated by sketches, on "Churches in Northern France." It is articles such as these that give their real value to the *Journal*. The Report of the private business meeting on Monday last, now printed in full in the *Journal*, includes a long address by Mr. Middleton on the subject of a Registration Bill of his own, concerning which it had been announced that he was to move its adoption by the Institute clause by clause; a resolution which was not put or acted on, but resulted in Mr. Middleton handing in his Bill to the Council of the Institute for their consideration, so that the matter

Digitized by Google

did not come to any vote. Mr. Greenop spoke in regard to the defects of the Institute scale of charges, which we certainly think needs revision. An amended resolution on the subject was ultimately carried, to the effect that the Council be requested to prepare a circular letter for issue to all Fellows and Associates, inviting statements of any difficulties they have met with in its use, and suggestions for its amendment. Mr. J. J. Burnet struck a higher note, deprecating this commercial attitude in regard to architecture, and expressing the opinion that (as we have more than once suggested) architects should be free, like other professional men, to make their own contracts. It would have been more exactly to the purpose, perhaps, if he had said "like other artists." Mr. Woodward, out of a series of questions on different subjects, put one which it was certainly well to put, viz.: what had been done by the Council in connexion with the proposed new bridge over the Thames, and we are glad to find elicited the information that the Lord Mayor and the Bridge House Committee had consented to receive a deputation from the Institute on the subject. It is to be hoped that the deputation will succeed in obtaining some assurance that the architectural treatment of the bridge will have full attention; it is a matter of the greatest importance to London architecture.

A United Profession. IN the same issue of the Institute *Journal* Mr. Percy Tubbs writes a letter suggesting that before architects could hope to get a Registration Bill through Parliament it is necessary that they should become a united profession, and advising that the Society of Architects and all other outstanding architectural societies in the United Kingdom should be admitted as allied societies by the Institute. Apart from any question of Registration, this is what we have urged over and over again. Union is strength; and it is only by a general support of the central representative body that architects can hope to be strong enough to control public opinion in regard to any measure for their general benefit; besides which, a good many of those who have expressed an objection to Registration as usually understood, have intimated at the same time that they would be ready to support a measure that would have probably the same result, if brought forward under the ægis of the Institute. The Society of Architects is a body which has, no doubt, very much advanced in standing since its first not very fortunate start; but no one surely can help seeing that the mere existence of two separate architectural societies in London, with separate interests, is in itself an element of weakness in regard to the relations between architects and the public.

The Panama Canal. THE annual Report issued by the Isthmian Canal Commission contains much interesting information with regard to the great undertaking which is in progress at the total estimated cost of nearly 60 millions sterling. Thanks to the admirable organisation of the engineering department, work is proceeding at a particularly rapid pace. More than half of the excavation necessary has been performed; the lock chambers are nearly excavated, and the deposition of concrete has been commenced in the Atlantic and Pacific locks. Additional machinery is about to be installed, and early next year we may expect further rapid strides towards final completion. We gather from an American contemporary that considerable numbers of European engineers have visited the Isthmus to study the methods of construction there followed. As the canal is one of the greatest engineering works ever inaugurated, professional institutions in this and other countries would do well to arrange facilities enabling their members to visit the site while all the machinery and plant are in full operation. A joint Panama meeting of the principal engineering and scientific associations of Great Britain would probably be appreciated, and ought to make easy the arrangement of inclusive fares at very moderate rates.

Fire Tests of Natural and Artificial Stone. SOME tests were recently conducted at the Royal Saxon Experimental Institute, Dresden, on cubes of natural granite, natural sandstone, and two varieties of artificial sandstones—red and white. The cubes were subject to gas flame for about one hour, the temperature attained being between 800° and 900° centigrade. One specimen of each stone was then cooled by water from a hydrant, and two others of each description were cooled by immersion in water at 13° centigrade. From the Report issued by the director of the Institute it appears that the granite cubes burst open in many places, and the natural sandstone was badly fissured, neither kind retaining the capacity for withstanding compression. The artificial sandstones showed no sign of injury by fire and water beyond the formation of numerous hair cracks from which chemically combined water had escaped in the form of steam, while the compressive resistance of the red variety remained unaltered, and that of the white variety was reduced to the extent of about 15 per cent. These tests agree generally with experiments made by the United States Geological Survey, and indicate that carefully-made concrete blocks are capable of resisting, without appreciable injury, any temperatures likely to prevail during ordinary outbreaks of fire.

Depositing Concrete under Water. IN the construction of the Detroit Tunnel, of which a brief account has already been published in our columns, large quantities of concrete have been deposited for external protection of the two steel tubes affording subaqueous communication between Canada and the United States. The concrete was delivered to its place through a tube whose upper end terminated at some distance above water level, the head so obtained ensuring consolidation far more perfect than that resulting from tamping in the ordinary manner. Test cores recently taken from the concrete show that it is sound, free from air spaces, and remarkably well compacted, while its strength is fully equal to that of high-class concrete hardened in open air. Trouble has frequently arisen in connexion with concrete deposited under water, and as a rule engineers prefer to employ cofferdams or pneumatic caissons for the execution of subaqueous foundation works. The satisfactory results attained at Detroit suggest that less costly methods may be developed for laying concrete required in marine and river engineering projects.

The German Electrical Industry. THE paper on the German Electrical Industry which was read to the Institution of Electrical Engineers this week by Messrs. Lepine and Stelling contains many facts which deserve careful consideration by electrical engineers. The most important factor in the competition between German and English manufacturers is undoubtedly the thorough system of specialising adopted by the former, combined as it is with long hours and cheap labour. The authors consider that English manufacturers make the better machines, but that they are handicapped by the want of enterprise of their commercial leaders. In our opinion, however, the authors do not lay enough stress on the necessity of continually experimenting on and improving machines and apparatus. The main object of many works' managers seems to be to cut down expense in every department that is not immediately profitable. Experiments are costly, and if the results can be anticipated by engineering "intuition," much money can be saved. Hence the salaries in the testrooms are low, and the apparatus provided is often totally inadequate to make the required tests. In order to interpret experimental results very special training is required, and without such interpretation they are frequently most misleading. Cable manufacturers have at last realised this. Ten years ago large sums of money were expended on making tests on the "electric strengths" of insulating materials. Owing to the neglect of certain physical factors such as the shape of the electrodes, the amount of moisture in the dielectrics, and whether the applied pressure was direct or alternating, the results obtained are practically useless. A thorough scientific knowledge is an essential preliminary to research experimental work, and to interpret the results the help of an expert mathematician is often necessary. The results obtained by mathematical research are often of greater importance than those obtained experimentally. We have only to remember how Hopkinson laid down some thirty years ago the principles used in dynamo design at the present day, and how Maxwell evolved the laws which govern radio-telegraphy, in order to see how indebted the electrical industry is to mathematical research.

An American Theory Concerning Paints. MANY practical outdoor tests with paints of different composition have recently been made in various parts of the United States to ascertain the comparative durability of the paints. As a result of these tests there appears to be a fairly general agreement to the statement that a paint containing two, three, or more

Digitized by Google

good pigments is superior to any paint which contains only one pigment. The theory advanced to explain this accepted fact consists in the supposition that when one pigment alone is used a number of voids or pinholes are left between the particles of pigment in the dried paint, but that when other suitable pigments are mixed with the primary pigment these additional pigments have particles of a different size, which cover the voids which would be left in a paint having pigment particles of a uniform size. The theory may not be correct, but the American tests certainly appear to prove that a mixture of pigments yields a more durable paint than a single pigment.

The Longest Concrete Arch.

IN our "Note" last week on the Albero Bello Bridge, about to be commenced in Rome, we pointed to that structure as the longest arch authorised in reinforced concrete. The statement is quite correct, but we now learn that the dimensions of the arch are very nearly reached by the middle span of a reinforced concrete bridge under construction by the city authorities of Auckland, New Zealand. The work in question, described as the Grafton Bridge, is 910 ft. long by 40 ft. wide, and includes a main arch of 320 ft. span, carrying a road at the elevation of 147 ft. above the valley. Hence, for the time being, the credit for the longest arch in concrete or reinforced concrete belongs to an oversea State of the British Empire.

Housing and Town Planning Conference.

WE may draw attention to the important conference which is to be held at the Mansion House on the 14th and 15th inst. on the subject of the Housing and Town Planning Bill, especially in regard to the practical administration of the Town Planning clauses. It is proposed to place before the meeting, as the basis for discussion, a series of suggestions as to the most practical lines of town planning procedure adapted to (1) great centres of Population, and (2) Urban Districts. The following gentlemen have been asked to co-operate in preparing this series of suggestions :—

Professor S. D. Adshead, Professor of Town Planning, Liverpool University.
Mr. John H. Barlow, Bournville Village Trust.
Professor Berlepsch-Valendas, Munich.
Mr. Albert E. Cave, London.
Professor Eberstadt, Berlin.
Professor Fuchs, Tubingen
Professor Patrick Geddes, Edinburgh.
Ober-Baurat Geusen, Düsseldorf.
Mr. E. M. Gibbs, F.R.I.B.A., Sheffield.
Mr. T. C. Horsfall, Manchester.
Mr. Percy B. Houfton, architect, Woodlands Colliery Village.
Mr. T. H. Mawson, Windermere.
Beigordneter Rehorst, Cologne.
Monsieur Augustin Rey, Paris.
Mr. B. Seebohm Rowntree, Earswick Village Trust.
Mr. Raymond Unwin, Hampstead Garden Suburb.
Oberbürgermeister Wagner, Ulm.
Mr. Percy Scott Worthington, F.R.I.B.A., Manchester.

The suggestions of these gentlemen will take the form of a skeleton plan setting forth the best course for a local authority to take in the administration of the new Act. These suggestions will be printed and placed before the representatives at the meeting. The occasion is one of great interest in connexion with the future of town planning, and it is to be hoped that some useful result will follow from the meeting.

Byzantine Research Fund.

A MEETING of this Fund was held on Wednesday in the rooms of the Society of Antiquaries, Dr. Edwin Freshfield in the chair, when a paper was read by the Rev. A. C. Headlam, Principal of King's College, on "The Scope and Interest of Byzantine Studies"; a paper dealing with the subject rather from the general historical point of view than the architectural. Part of the argument, however, went to support the idea that the dome of St. Sophia was due rather to Roman influence than to that of Asia Minor; a view we should think more than doubtful. Mr. William Harvey and Mr. Ramsay Traquair then described the work they had done for the Fund, much of which was seen on the wall in the shape of a valuable collection of sketches and measured drawings of Byzantine buildings and their mosaic decorations. As the Chairman observed, perhaps the most valuable result of the work of the Fund so far was that permission had been obtained to examine and illustrate the church of St. Irene, which had hitherto been a closed building to architects and archæologists.

Street Improvement in Paris.

THE best way of treating open spaces for the meeting of streets, in large cities, has been discussed a good deal lately both in books and at meetings, and there seems to be at present in Paris an opportunity of putting a new scheme of this kind into execution. With the prolongation of the Boulevard Haussmann, which is now to be definitely made after a delay of some forty years (for it was one of the schemes under Napoléon III.), there will be a junction at an awkward angle between the new street and the Boulevards des Italiens and Montmartre. To avoid this, M. Louis Bonnier, architect, has submitted to the Municipal Council of Paris a scheme for the formation at this point of a large *place*, of either circular or oval plan, into which the various streets will enter without interfering with each other, and which is to be laid out in a decorative manner, and surrounded by buildings carried out, as in the Place Vendôme, in accordance with a general design on symmetrical lines. It is proposed also that there should be a sculptural group as a central object. If the proposal is definitely accepted by the Council, where it is generally popular, it is probable that it will be made the subject of a public competition.

Old Sarum, and its Site.

THIS historical spot, which is now in the charge of H.M.'s Office of Works as an "ancient monument," marks, it is believed, the site of the Roman post of Sorbiodunum, by the Ikenield Street, which, however, the chief earthwork seems to show, was founded over a fort constructed in a much earlier period. After its capture in 552 by Kenric, son of Cerdic, King of Wessex, it was called Searesbyrig, from the dryness of its position, and the Kings of Wessex made it their residence for nearly three hundred years until the time of the Heptarchy In 1003 Sweyn pillaged Old Sarum and burned the castle. The synod of 1075-6, who decreed the removal of sees into fortified cities, transferred the seat of the diocese from Sherborne to Old Sarum, where Bishop Herman and his successor, Bishop Osmund, built a cathedral, finished in 1092. Some ruins of the cruciform church in the north-west of the enceinte were discovered seventy-five years ago. Disputes having arisen between the castellan and the clergy, and there being a great lack of water, Richard I. granted a licence to Bishop Herbert to migrate to an adjacent spot in the Vale of the Avon, where Herbert's successor, Poore, in 1220, began the building of Salisbury Cathedral. The inhabitants went to the new city, and Old Sarum became deserted, though it continued to send two members to Parliament until the reform of William IV.'s day. The materials of the church were taken (1331) for repairing the cathedral and building the wall of the close at Salisbury, and a Chapel of Our Lady was erected on the site. The castle, which King Alfred entrenched and fortified with a palisade, was occupied from time to time by our Norman and Plantagenet kings, and was repaired by Henry II.; it fell into decay during the XVth century, and Leland found it in ruins. In our number of September 18 we described the condition of the remains of the castle as recently explored by Mr. St. John Hope, Colonel Hawley, and Mr. M. Stephenson, for the Society of Antiquaries.

The Wedgwood Exhibition.

TO STEP into No. 11, Conduit-street is to walk into the atmosphere of the XVIIIth century, for here Messrs. Josiah Wedgwood & Sons (the lineal descendants of "Old Josiah") are holding an exhibition illustrating the progress and development of their ware during the 150 years which have elapsed since the founder of the firm became a master potter in 1759. One of the chief points of interest in the exhibition is that, for the first time since 1774, a representative selection of the celebrated service made by Josiah Wedgwood for the Empress Catherine II. of Russia is to be seen in this country. A member of the Wedgwood family lately visited St. Petersburg and brought a selection of pieces to England, which are now being shown at No. 11, Conduit-street. The set, consisting of 952 pieces, is ornamented with 1,282 "various views of Great Britain, country seats of the nobility, gardens, landscapes, and other embellishments" (to quote from Wedgwood's own catalogue). The body is of pale brimstone, and the views are painted in a warm purple. Perhaps the gem of the collection is the well-known copy of the Portland vase in Jasper ware, that exhibited here being one of the first issues. The Pegasus vase, designed by Flaxman, the subject being the Apotheosis of Vergil, is a splendid work. Many of the best portrait medallions are also to be seen. Not the least interesting items are the Bisque pattern models and the carved wood working models brought from the Etruria Museum. The exhibition covers all the periods and kinds of Wedgwood ware, from "Queen's

Digitized by Google

ware" to "Jasper" and "Basalt." Sir Joshua Reynolds's portraits of Josiah Wedgwood and his wife have also been lent for the occasion, together with autograph letters, pattern-books (containing numbered sketches of designs)—in short, a very complete collection of "Etruriana."

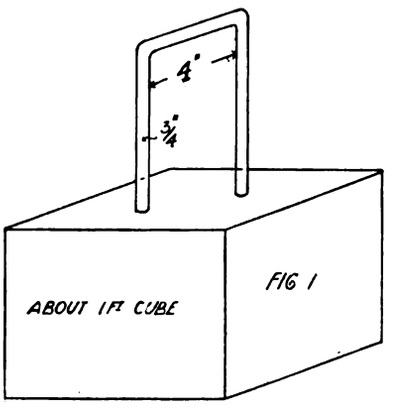
The Heating of Railway Stations.

ENGLISH railways frequently come in for considerable adverse criticism, and it is often justified. There is said to be want of economy and want of system. Absence of economy is certainly evident in the manner in which railway waiting-rooms and offices are warmed—or tried to be warmed—by means of open fires. These, admirable in their proper place, are quite unsuited to such places as railway-station waiting-rooms, for they are both inefficient and costly. At this season a group of a few persons may be witnessed on every English line huddled round a roaring fire, the heat drawn up the chimney, whilst outside this charmed circle all other passengers out in the cold. The coal bill for stations of such a company as the London and North Western must be very large, and there can be equally little doubt that it might be lessened considerably if a more efficient system of heating were adopted. It is singular that in the interests both of the public and of the shareholders railway managers do not pay more attention to this subject.

NOVEL METHOD OF CONSTRUCTING SMALL BUILDINGS IN REINFORCED CONCRETE.

A SYSTEM of reinforced concrete construction specially adapted for farm buildings, cottages, sheds, and kindred structures has recently been patented by Mr. H. W. Buddicom, of Mold, from whom we have received particulars, together with the diagrams reproduced in this article.

Briefly described, the idea is to mould all the walls upon horizontal platforms, each provided with a simple form of hinge, so that the slabs can be brought to the vertical position by means of winches. The outer walls are jointed at all angles by posts formed of cement grout into which are embedded projecting bars of the reinforcement, and party walls are secured by dovetailed joints and cement grout. After each wall has been reared up the moulding

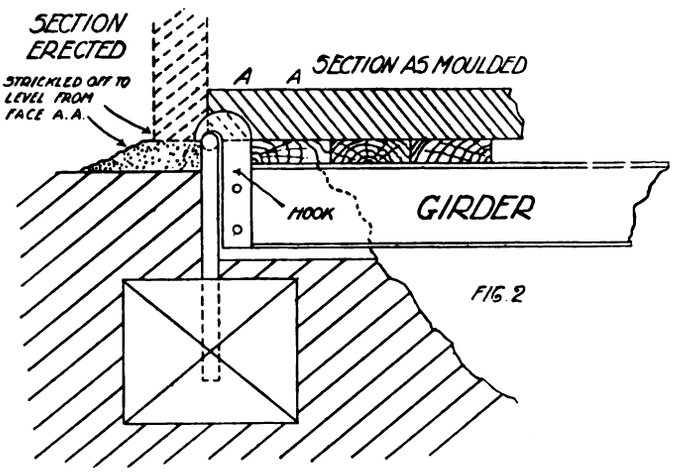


platform is lowered and removed for use elsewhere.

The first operation is to decide upon the number of sections into which the walls can best be divided. Then the platform hinges, formed of ¾-in. diameter steel bars bent to the shape of a croquet hoop and measuring 4 in. wide by 24 in. long, are partly embedded in 12-in. concrete cubes, allowing the loop of the hinge to project (see Fig. 1). The blocks are set in the foundation trench, the top of the hinges level and projecting a few inches above the surface of the ground. The platform consists of light I-beams, each having a hook riveted to one end, as shown in Fig. 2, for attachment to the hinge and fixed at such height that the boards of the platform come level at the top with the centre line of the horizontal bar of the hinge. When the foundation course is being filled in with concrete channels must be left at all places where the I-beams of the platform will occur, a matter easily arranged by laying timber cores in the intended positions of the steel beams.

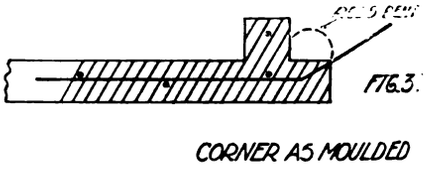
When these preliminaries have been settled and the platform is in place paper is laid over the platform to prevent the concrete from adhering to the boards, and the wall is moulded very much like a reinforced concrete floor slab. The reinforcing bars, usually of ⅜-in. diameter, are embedded in two directions about 12 in. apart.

After the wall section has been moulded and while the concrete is setting the bed upon which it is to be erected is prepared by depositing concrete along the end of the platform and strickling off the surface level with the top of the platform, an operation readily performed by the aid of a board



notched to the same depth as the thickness of the wall. As soon as the wall slab has sufficiently hardened it is swung up into position by ropes attached to winches, one winch opposite each platform hinge. Care must be taken to avoid unequal hoisting and to prevent the wall from going beyond the vertical. After the section has been got into place it must be propped or otherwise secured; the platform can then be lowered and taken away.

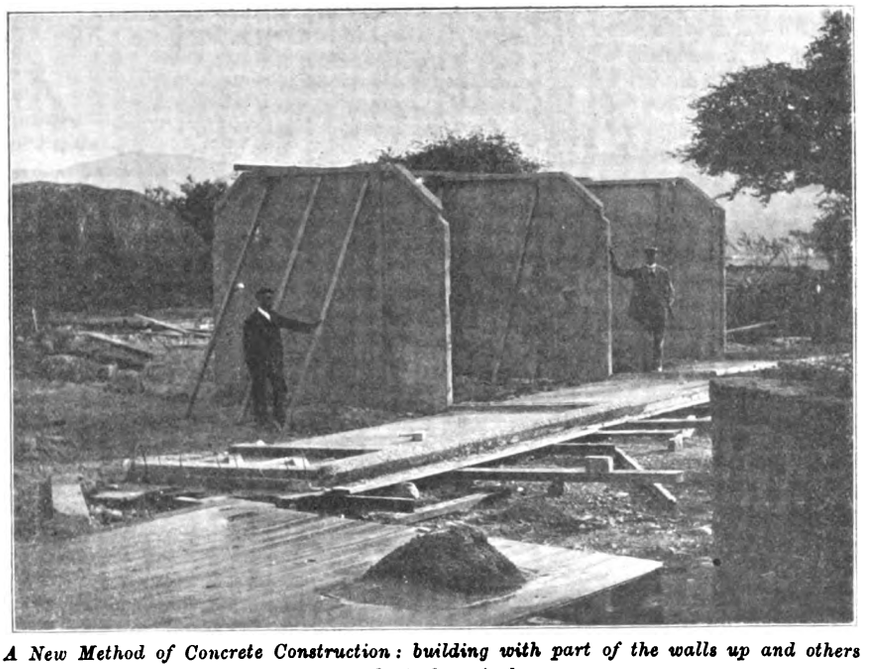
Fig. 3 is a part horizontal section at the corner of a wall slab. The horizontal bars of the reinforcement project as shown, and



after the concrete has set they are bent round to form circular loops, one of these being indicated by a broken line in the drawing.

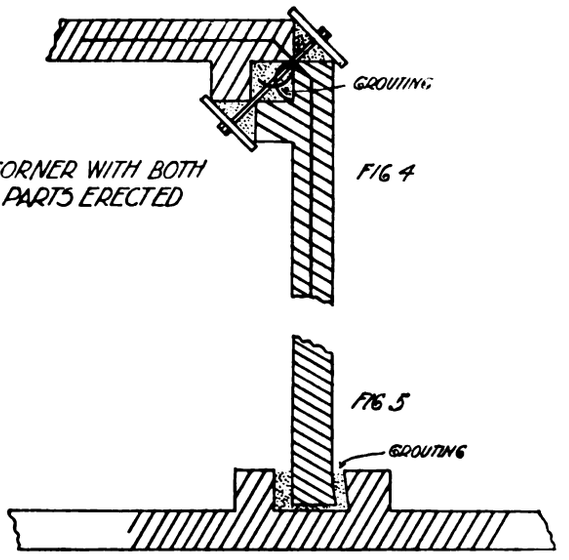
Fig. 4 represents a corner joint ready for grouting, where the two triangular spaces are closed by boards and the three spaces shown are filled in with cement grout. Party walls are jointed to side walls by the simple dovetailed joint represented in Fig. 5.

Doorways and window openings can be moulded by laying a door or window frame on the platform and casting the concrete all round. In the case of a door thin strips



A New Method of Concrete Construction: building with part of the walls up and others ready to be raised.

Digitized by Google



of wood can be lightly tacked on so as to give the necessary clearance, no door posts or jambs being necessary.

The method of building construction here described is certainly ingenious, and for many purposes it should be found both convenient and economical.

THE BUILDERS' BENEVOLENT INSTITUTION:

ANNUAL DINNER.

THE sixty-second annual dinner of the Builders' Benevolent Institution was held in the Whitehall Rooms, Hôtel Métropole, Charing Cross, on Thursday, December 2, Mr. Howell J. Williams, J.P., L.C.C., President, in the chair. There were also present—

Sir R. Melvill Beachcroft, Chairman, L.C.C.
H. Arthur Bartlett
J. W. Chessum
H. T. A. Chidgey, President of the Quantity Surveyors' Association
Stephen Collins, M.P.
Walpole Collins
T. Davies, M.P.
G. Crickmay
J. Howard Colls
J. Carmichael, J.P.
E. B. Ellis
B. I. Greenwood
J. S. Gibson
G. Bird Godson
G. A. Hardy, M.P.
Wm. Higgs
L. Horner
J. W. Lorden
L. J. Maton
G. M. Nicholson
J. F. Parker
J. Randall
F. G. Rice, President, London Master Builders' Association
R. Rice
E. Smith, J.P., L.C.C.
J. Sabey
H. Ward, L.C.C.
W. T. Walker
W. Lawrence, jun.
S. M. Young
A. H. Stringer
J. C. Hill
A. W. Roques
R. E. Keys
W. D. Brown
S. W. Wilks
P. Granger
S. Allen
T. S. Cotterell, J.P.
G. M. Stainthorpe
W. E. Ollis
G. Bartlett
J. F. Grimes
T. I. Berry
W. T. Graves
R. M. Andrews
G. Silvester
Wm. Pangbourne
W. J. Renshaw
John Wood
J. C. Morgan
E. R. Tasman
W. Smith
J. H. Haworth
A. J. Bone
W. T. Tonkin
E. L. Haslett
W. J. Styles
S. H. Nicholls
W. J. Walford
W. H. Wall
J. T. Curry
E. H. Goddard
F. J. Barefoot
J. Pullman
T. W. Teberdy
H. A. Flinn
M. P. Saunders
J. Cameron
R. P. Higgs
H. W. Jenks
T. Boulton
H. Stringfield
E. G. Booker
J. Arnold
H. Clarke
R. B. Chessum
E. Gabriel
T. Stirling, jun.
R. J. Holliday
H. G. Tarrant
A. J. Smith
Alderman Bothwell
J. Macquire
T. Hodgson
John T. Bolding
J. Hamlyn
B. J. W. Lone
J. H. Wigginton
C. J. Clark
A. B. H. Colls
W. Boniface
R. J. Ward
S. Enever
H. J. Clark
J. Clayton
J. H. Barnis
J. M. Jenkins
G. T. Reasbeck
F. Shelbourne
R. Presland
T. Burton
T. J. Collins
C. Gude
R. A. Marshall
S. Parkes
Ben. Carter
G. H. Parker
C. R. Parker
F. J. Barnes
E. E. Way
B. Goodman
G. Mitchell
H. W. Blake
T. D. Cooper
H. T. Hellicar
H. Hardy
W. E. Trent
G. Cochrane
E. W. Davis
E. N. Craig
A. Fry
James Sabey
G. C. Harrison
H. Deane
W. Mitchell
H. Manning
J. G. Veit
G. Cochrane, jun.
J. Grimmond
W. Chilcot
H. Sabey
and
T. Costigan, Secretary.

The loyal toasts having been proposed by the President and suitably honoured,

The President eloquently proposed the toast of "The Builders' Benevolent Institution," coupled with the name of Mr. J. Howard Colls, Treasurer and Past-President. There was serious depression in the building trade; the pensioners of the Institution were more, and the funds were less; so much so, that the Institution had had to draw on the reserve fund. He did not accept the responsibility for the deficit, but he did in urging the claims of the Institution. As to the cause of the depression, he must not say, but he could say that some of his hearers had earned increment—he would not say unearned increment—and he wanted a little of that earned increment. Some of them must have some earned increment, and of them he asked a little. It was said that times had changed and methods of building, and that quantity surveyors cut down builders, and he believed that the secret of a good many failures on jobs was the not having quantity surveyors. If there was a quantity surveyor on every job, and the right sort of quantity surveyor, it would be for the better. They wanted quantity surveyors who would put everything in the Bill fairly and squarely. As a result of the depression, there were names now on the list of pensioners who had been subscribers to the funds. The Institution was doing such a good work that it deserved to be supported, and he hoped it would in the next sixty-two years and more do the same good work that it had done in the past.

Mr. J. Howard Colls, Treasurer and Past-President, said in times like the present, when masters and men were suffering most severely from depression in the trade, they should do what they could to help one another. The building trade was in a really terrible state, and the unemployed numbered anything from thirty to forty per cent., and the trades unions were appealing to the masters for help, which he hoped would be accorded. He could not help thinking of the following couplet, which seemed to sum up most philosophy:—

"Life is mockery, froth, and bubble, two things stand like stone:
Kindness in another's troubles, courage in your own."

He should like, in conclusion, to propose the health of the President for helping them as he had.

The toast was received with musical honours, and,

The President briefly responded, remarking on the problems to be dealt with in the building trade—reinforced concrete, steel construction, requirements of the London County Council and other bodies, and so on.

Mr. J. Carmichael, J.P., Past-President, then proposed the toast of "The Architects and Surveyors." So far as architects were concerned, the profession was never more difficult to be carried on than it was to-day. The London architect had to be more or less of a walking encyclopædia, and to know something about such matters as the value of land, rental of buildings when erected and before they were erected, and many other things; and no sooner did he commence his designs than the client commenced to worry him as to plans, etc., and the builders were scrambling after the job which, after it was got, was often not worth having. The profession had reached a high state of excellence, as he knew from experience. Something had been said as to surveyors making mistakes, but he did not know such surveyors. Architects might make mistakes—they sometimes did, but the quantity surveyor was supposed to be immaculate; he never made mistakes—and if he did he did not own it.

Mr. G. Crickmay, who responded for the architects, said as to architecture, he was talking recently to a man who had travelled a great deal, and who remarked on the comfort and convenience of the English gentleman's country house, saying that he thought in that respect the English architect was well to the fore.

Mr. Guy M. Nicholson, in reply for the surveyors, said Mr. Carmichael had said that surveyors, if they made mistakes, were not willing to acknowledge them. It was Mr. Nicholson's experience that builders did not usually desire surveyors to own their mistakes provided they were on the builder's side. As to the final accounts not being intelligible, he had found that builders did not always like the final accounts to be quite clear to the client or the architect. The surveyor whom most builders admired was one who would discover that an alteration to a single dormer window involved an extra of 20 per cent. on the whole roof, and it would certainly be difficult to make that clear to the architect or the client. Surveyors had very great sympathy with builders at the present time; work was put up to competition and taken at very low prices in the case of surveyors as well as builders. He thought that the Builders' Benevolent Institution did most excellent work. It was unfortunate that the greatest strain came on a society of this sort just when trade was bad and they could not afford to give much. It might be a good thing to have a combined provident association, which would take in all the big trades, such as building, contracting, engineering, steelwork, cotton, etc. It did not generally happen that all trades were bad at the same time, and so if there were a combined society it would not be such a strain when there was great depression in some particular trade. Both surveyors and builders were suffering from the depression in the building trade. Some causes of the depression were only temporary and would pass. For instance, just before 1900 there was a great boom, which meant that there was overbuilding, and also that many more came into the trade than there was room for. This was being remedied by the depression; also, since 1900 we had had two great wars and a lot of destruction by earthquakes, etc. These were always bad for trade as they caused poverty and dear money, which affected building very severely. He thought, however, that there was one great burden on building which other trades did not have. Building was very largely carried on in the great cities, where it was generally impossible to buy a freehold, and there was no compensation paid to a tenant for any building improvement. On agricultural land compensation was paid to the outgoing tenant for improvements of much less value, and under the Town Tenants (Ireland) Act compensation was payable for building

Digitized by Google

improvements in Ireland. He thought this ought to be the case in England.

Mr. B. J. Greenwood, in a humorous and clever speech, then proposed the toast of "The Houses of Parliament," remarking that he hoped the toast would never need alteration into "The House of Parliament."

Mr. G. A. Hardy, M.P., responded, and said we ought all to be proud of our Houses of Parliament, as they were pure in every sense of the word. There had been no such thing as jobbery there during the last fifty years at least.

Mr. F. G. Rice, President of the London Master Builders' Association, then proposed the toast of "Municipal Authorities," coupled with the name of Sir R. Melvill Beachcroft, Chairman of the London County Council. He said there were municipal bodies and municipal bodies. Unfortunately, he thought politics entered too largely in municipal life, and hence we are divided into parties and regulate our policies on party lines. Whatever we thought of the municipal bodies as a whole, it was the men who comprised those bodies that we wished to honour, men who so ungrudgingly gave their time to this work. It might surprise some he knew that less than 150 years ago the different guilds and corporations whose powers have devolved on the municipal bodies of to-day had then the right to give or refuse permission to anyone desirous of opening a shop in their particular borough or trade, and while we were thankful we were in these days rid of such restrictions we had many restrictions we hoped to have repealed as our municipal bodies became more enlightened. As to Sir Melvill Beachcroft, they were pleased to see him, although as builders they had scarcely forgiven him, as late Chairman of the Metropolitan Water Board, for making them pay so dearly for water in their buildings. He wished to compliment Sir Melvill on the new departure of the London County Council in consulting the different bodies affected by the Amendment Building Act, and although the Act was nothing like what it ought to be, it was the better for the outside advice the London County Council sought, and, if Sir Melvill would allow him to say so, he could make tradition that would ever stand out in bold relief if he could persuade his council to scrap the pieces of the Building Act and make a new one, taking as his mentors the Institute of British Architects, the London Master Builders' Association, and other bodies interested in the buildings of our vast metropolis.

Sir Melvill Beachcroft, in response, said there were 103 municipal authorities in London. Builders were somewhat intimately associated with the London County Council, as the London County Council was with them, for even in these times of depression the Council's estimate for building schools amounted to close on half a million pounds for the current year, and for artisan's dwellings and asylums the amount was close upon another half million, and for street improvements the estimate was about three-quarters of a million. Notwithstanding the slump, there was still some work which, thanks to the municipality, might be placed at their disposal. The depression in the building trade was known to everyone, and he was told that it began in 1897, when there was a large amount of over-building; the reaction came, and we did not seem to get over it. The Council was suffering, too, for they had great sites lying dormant, waiting for builders to begin operations upon them. He was glad they had their fine Benevolent Institution, and he sometimes wondered what trades and businesses would do without benevolent societies of the kind.

The list of donations and subscriptions was then read out, the grand total being 860*l*., including 100 guineas from the President, 50*l*. from the Institute of Builders, and five guineas from Sir Melvill Beachcroft.

The President expressed his thanks to all those who had assisted him and the Institution, and specially referred to the able services on behalf of the cause rendered by Mr. T. Stirling, Mr. T. Davis, and others.

The concluding toast was that of "The Vice-President, Committee, and Stewards," proposed by Mr. Stephen Collins, M.P., and acknowledged by Mr. J. T. Bolding. Mr. Collins spoke of the good work done by the committee in looking after the interests of the Institution, and specially mentioned the names of two of the oldest members of the committee, Mr. T. Stirling and Mr. John T. Bolding.

The toast was responded to by Mr. John T. Bolding, who expressed the pleasure it gave the committee to see that the funds of the Institution were properly administered and that only worthy candidates received the pensions. Mr. Bolding, in referring to the report, thought the list of vice-presidents a very small one considering the magnitude of the building trade and that the Institution had been established sixty-two years, and expressed a hope that when the trade of the country improved many more builders would give a donation of 10*l*. 10s. to the Institution, and thus have their names added to the list of vice-presidents. Mr. Bolding also expressed great pleasure that the sons of several of our leading builders had joined the committee.

The proceedings then terminated.

INDUSTRIAL EDUCATION AND APPRENTICESHIP.

A CONFERENCE convened by the Lord Mayor to meet the members of the London County Council was held at the Mansion House on Friday, the 3rd inst., to discuss the question of industrial training in education and the development of trade schools, and, in connexion therewith: (1) The position of apprenticeship and of the apprenticeship charities, and (2) the establishment or development of employment bureaux or other means of bringing those leaving school into touch with the industrial and commercial world.

The notice convening the meeting stated that it was felt that much good would be done by securing the sympathy of employers of labour and industrial associations in the work which the London County Council has undertaken in connexion with the establishment of trade schools, into which are drafted boys and girls between the ages of thirteen and sixteen, for a course of training which, while not neglecting the educational side, has, nevertheless, a strong industrial bias.

The technical schools for boys provide a two, and in some cases three, years' course of technical instruction involving principles of science applicable to particular trades or industries. The course of training is intended to lead up to rather than supersede apprenticeship and to provide instruction supplementary to workshop practice. It is anticipated that boys who complete this course satisfactorily before entering workshops will be better fitted to fill higher positions than those who enter workshops immediately on leaving school. The schools are open on five days a week, and about two-thirds of that time is devoted to instruction under a skilled trade teacher in the trade chosen by the pupil. The rest of the time is devoted to the improvement of the general education of the pupil, with special reference to the requirements of the particular trade. The general fee for admission to the London County Council schools is 1*l*. 10s. a session, or 10s. a term of three months. The fee for the Engineering School at Paddington Technical Institute is 2*l*. 5s. a session, or 15s. a term; for the Engineering School at London County Council School of Engineering and Navigation 1*l*. 10s. a term; and at the London County Council School of Building, 4*l*. 10s. a session, or 30s. a term in the second and third year, for boys who intend to enter builders', surveyors', or architects' offices. There is no charge for materials except for those taken away from the school by the pupils as finished work.

The following extract from a report of the London County Council's Consultative Committee on Goldsmiths', Silversmiths', Jewellers', and Allied Trades, for session 1908-9, may be of interest:—

"The visits which the members of the Consultative Committee on Goldsmiths', Silversmiths', Jewellers', and Allied Trades have paid to the various training centres in London have proved stages in a voyage of discovery. Few had any idea of the extent, variety, and high quality of the training provided or of the admirable equipment of the principal schools visited. The Committee feel that the trades of London are deeply indebted in the first place to the energy and enlightened enterprise of the London County Council, and in the second place to the wide knowledge, enthusiasm, and creative inspiration with which Professor Lethaby, the Principal of the London County Council Central School of Arts and Crafts, has guided the course of technical and artistic education in that and the ancillary schools since their foundation. Under the co-operation, now happily brought about, between the masters and workers of London and the schools, it is difficult to set bounds to the benefits which may accrue to the whole community. As a step in that direction, it may be suggested that the masters would at the same time aid the cause of technical education at large and secure adequate artistic training for their employees if they would combine to recruit their apprentices and assistants from the students of the various schools. In addition to this, the example of those liberal-minded employers who send their workmen and boys to the classes during working hours might be more widely followed. Combined action of this kind would not only make it evident that the possession of technical and artistic training was the condition and the means of livelihood, it would give those already employed opportunities of increasing their knowledge, and, therefore, their value. A further result of this valuable co-operation might be the evolution of some efficient substitute for, or rehabilitation of the apprenticeship system, the decay of which is being combated on the Continent by drastic legislation. With regard to the work at present done in the schools, it is felt that the ideal of clean workmanship and right methods should be insisted on from the outset. The student's first steps should be most carefully watched and guided, and he should be encouraged to essay the simplest work first. The more elementary the student, the higher the skill required in the teacher. Only when workmanlike habits have so penetrated our minds as to be used unconsciously can the artist in us attain complete development."

Invitations to the conference were addressed to leading experts, including representatives of the Board of Trade, the Board of Education, the Charity Commission, the City Corporation, the London Chamber of Commerce, the City and Guilds of London Technical Institute, the Royal Society of Arts, the metropolitan Borough Councils, the City Parochial Foundation, apprenticeship charities, etc.

The Lord Mayor presided, and among those also present were Lord Avebury, Lord Claud Hamilton, Sir Thomas Wrightson, Sir Philip Magnus, M.P., Sir H. Llewellyn Smith (Board of Trade), Sir Robert Morant (Board of Education), Mr. George Alexander (London County Council), Mr. E. White, Mr. Beveridge (Employment Department of the Board of Trade), Mr. R. A. Robinson, and Major Skinner.

Mr. Cyril Cobb (Vice-Chairman of the Educational Committee of the London County Council) opened the discussion on "The Development of Industrial Training in Both Elementary and Trade Schools," and said that in some ways the commercial supremacy of this country was threatened by the great nations of the Continent and by the United States, and they were often told that the reason was the better industrial and commercial basis the educational systems of those countries. We should try to make our education more practical and carry out practical reforms. We had to consider the age of the children at which education stopped in England, *i.e.*, fourteen years; as to which the Trade Unions' Congress recommended that the compulsory age should be raised to sixteen; and we had the alternative advocated by the Consultative Committee of the Board of Education, which advocated half-time from the ages of fourteen to seventeen, coupled with compulsory time off, which the employers were supposed to give. The supplemental evening school system was open to the objection that it led to mental fatigue, and as to compulsory time off for all trades in London, that did not seem possible; if we were to have compulsory time off it

Digitized by Google

must only come gradually. The size of London and the distance the workers often were from their work would militate against compulsory time off which some people advocated. He thought that elementary time off was a good thing provided the boy was fully capable of profiting by it. As to the kind of education we should aim at in our schools, the conditions of industry had changed during the last quarter of a century largely owing to the subdivision of labour, and now a boy was taught only a little part of his trade, and never became a really accomplished artisan in all branches of his trade. And the old system of apprenticeship was to a large extent killed by those conditions, and the question was what could be done now. He laid stress on the importance of dealing with the large number of boys who, after leaving school, unfortunately found their goal in the unskilled trades. What they wanted to do in their elementary education and day schools was so to educate their children as to give them a ready understanding of both commercial and industrial work in general, so that they could adapt themselves to either.

Sir Thomas Wrightson, Bart., said that the bound apprenticeship system, which did so much for the training of artisans before the large factory system started, had lapsed almost entirely owing to the difficulty of enforcing discipline when the masters had not the power of dismissal. He did not wish to go into the question of how the bound apprenticeship system had been discouraged. It was enough to recognise that such was the present condition of matters, and the problem was how to establish a form of education which would replace the old system of apprenticeship to a handicraft which was the lineal descendant of the old trade guilds. The difficulties which confronted a solution of the problem were four in number, namely, apathy of parents, apathy of employers, apathy of trade unions, and apathy of the older workmen. After giving details of various systems of training which he had tried in the engineering establishment of which he was chairman, he said that success had at last been achieved by placing as teacher over the boys the junior foreman in each department. Teaching could not be given during work hours, but, knowing the exact work in which each boy was engaged, the junior foreman, always a highly-skilled workman, could readily in the evening communicate a sufficient amount of theoretical teaching to arouse interest in the boys and to make them thinking artisans.

Mr. W. Hazell said that, as a rule, the hours of labour were too long for evening classes to be of much practical use to youths learning a trade.

Mr. W. A. Nicholls (National Union of Teachers) advocated the shortening of the time devoted in the elementary schools to literary subjects and the raising of the school age in London to at least fifteen.

Sir George Gibb said he thought that much skill and industry among our people ran to waste owing to defective organisation.

Mr. E. Penton having spoken,

Sir W. Bousfield said he hoped to see greater efforts on the part of employers to enable the young apprentice or boy in their service to pass on to more skilled work. If a boy made a bad or unpromising choice at the beginning of his career, it was very difficult for him to alter his choice. We might be able to revive apprenticeship in some form, but the old system was dead.

Mr. Alex. Gossett (Furnishing Trade) agreed as to the necessity for better training for boys than was provided at the present time. What was wanted first and foremost was to raise the taste of the people once more. When the public demanded higher class of workmanship the merchant would have to provide it, and the young craftsman would have an opportunity to take a love and pride in his work. At present he was not allowed to do so.

Mr. Ben Tillet said that because of the present capitalist system it was impossible for a journeyman to find time to teach a boy all he knew, and there was now such a subdivision of labour that it was impossible for the great industries to give a comprehensive idea of any trade to an apprentice. He agreed that if in the regular day's work they could give the apprentice a better conception of industry and the meaning of his art and craft, it would be a good thing He did not agree that the intelligence of the working men of this country was less than that of any other country. There were carpenters, for instance, who, if they had time and material, would turn out the best article possible. He might say that in America the average manager of a big works was glad to get a hint from a workmar, but a workman in this country who went to the foreman with an invention even, to say nothing of a hint, was likely to get the sack. The workshop should cease to be a place of slavery and drudgery, and the workman led to take an interest and pride in his work.

Mr. Barlow said the whole question was a very difficult one. It was essential to get together the educationalist, the employer, and the trade unionist, and unless forces could be bound together the question of apprenticeship could not be dealt with.

The proceedings shortly afterwards concluded.

PENRHYN OLD HALL.

PENRHYN Old Hall, or, as it is frequently called, Penrhyn Farm, was in 1561 the property of Robert Pugh, the Sheriff of Carnarvonshire.

At one time there was a chapel attached to the house—it is now used as a stable—where after the Reformation the family and their priest still worshipped. A plot, it is said, was hatched by them to exterminate the Protestants in Creuddyn (the name of the peninsula), but it was discovered by one of the conspirators revealing it, in confidence, to his sweetheart; and a troop of horse speedily invested Penrhyn. Some were captured, but the priest who was supposed to be the instigator of the plot escaped for a time, but was later discovered in a cave in the Little Orme's Head, and promptly treated after the merciful manner of those times.

Remains of the old gardens, rose walks, etc., can still be seen, and one can imagine what a pleasant place Penrhyn must have been in its best days. DOUGLAS C. LEIGH.

Google

ARCHITECTS' TECHNICAL BUREAU: PERMANENT BUILDING EXHIBITION.

[COMMUNICATED.]

IN the issue of the *Builder* of November 13 brief reference was made to the establishment in London of an "all the year round" exhibition of building materials and fittings, and that the views of architects in London would be agreeably received as to its desirability and utility. The Bureau is now able to report that out of more than 400 architects interviewed in London up to the present in the central London districts, over 85 per cent. have expressed themselves distinctly in favour of its establishment and the advantage that such an exhibition would be to them in their practice.

In respect of architects practising in the country, it was not considered even necessary to ascertain their views, as most require from time to time to come to London for the selection of materials and fittings, when a visit first to the exhibition, where can be gathered at a glance the class of work executed by the various manufacturers and craftsmen, would acquaint an architect with the knowledge as to which showrooms would be most suitable for his purpose to visit.

The exhibition will be conducted on a comprehensive scale, and large and suitable premises have been acquired for the purpose. These are in a central position, being within half a minute of the Holborn main thoroughfare and the British Museum Station. Among the classes of materials to be exhibited will be facing bricks built up in walls, piers, etc., also the local bricks of the various districts; facing stones, terra-cotta, wall and floor tilings; roofing tiles and slates displayed so as to show their various colourings; electric and gas fittings of all descriptions; door and window furniture, leaded lights, etc. There will be two separate sections for sanitary goods and fireproof construction; in the former case the water being laid on for demonstration purposes. Current will also be provided for electrical purposes. All goods before being placed in the exhibition will require to be passed by the Selection Committee.

Due notice will be sent to every architect in London and the country of the opening of the exhibition. All applications in connexion with the exhibition to be made to the Exhibition Manager, Technical Bureau-buildings, 24 and 25, Hart-street, Holborn, W.C.

HOT WATER SERVICE INSTALLATIONS:

ENGINEERS *v.* PLUMBERS.

IN the heating and domestic engineering trade disputes have been caused within the last few years in some districts by the action of the plumbers in claiming a monopoly of pipe-fitting and fixing work in all metals (whether lead or not), to the exclusion of any other trade.

In connexion with a dispute of this kind at the new Masonic Hall, Leicester, after protracted delay the plumbers agreed to join in an application to the Board of Trade to appoint an arbitrator to hear and determine the question of dispute between the parties. Alderman T. Smith, J.P., was appointed to act as arbitrator, and heard the case in Leicester on the 5th and 6th ult., the parties represented being Messrs. Ashwell & Nesbit, Ltd., the heating and domestic engineering contractors; the Masters' National Association, and the Operatives' National Union connected with this trade, on one side; and the plumbers' section of the Leicester and District Building Trades Employers' Association and the United Operative Plumbers' Association (Leicester District), on the other side.

The arbitrator has now given his award, dated December 2, which is as follows:—

"I decide that no claim has been established giving to plumbers the exclusive right to fit and fix all pipes and fittings in hard metals used in connexion with ventilation, heating, warming, laundry, cooking, and general hot and cold water domestic (or other) supplies or services.

I therefore award and determine that, in the water area of the Leicester Corporation, the demarcation of work shall be as follows:—

(*a*) All leadwork in connexion with hot and cold water domestic (or other) supplies or services shall be plumbers' work.

All domestic waste, soil, or ventilating pipes above ground, from water closets, baths, lavatories, sinks, or other sanitary conveniences or appliances, shall be plumbers' work.

(*b*) All other work in connexion with ventilation, heating, warming, laundry, cooking, and general hot and cold water domestic (or other) supplies or services, in which iron, brass, copper, or other similar hard metal is used may be done either by hot-water, heating, and ventilating engineers, fitters, or by plumbers, as may be provided in plans or schemes prepared by hot-water, heating, and ventilating engineers, or by master plumbers, or others."

It may be observed that leadwork was not in dispute. The judgment of the arbitrator, in which we entirely concur, will, it is to be hoped, have effect in putting a check upon claims on the part of plumbers which can hardly be regarded as reasonable.

EXHIBITIONS.

BURLINGTON FINE ARTS CLUB.

AT the Burlington Fine Arts Club there is at present a fine and interesting collection of paintings of the Umbrian School, along with some examples of Renaissance decorative and applied art. Some of the paintings are little known, and the opportunity for studying so many works of the Umbrian School in juxtaposition is one that does not often occur. There are some especially interesting examples of the work of Luca Signorelli, and a composition of four nude male figures by Perugino, posed in a Renaissance interior with an inlaid marble floor, is remarkably fine, and gives one an idea of a new side of this painter's work.

On the mantelshelf is a grand example of a bronze knocker, typical of the large style of Renaissance art in handling such objects; and in the case at the top of the room is a fine collection of faïence.

The exhibition is not of course a public one in the usual sense, but the Committee are known to be liberal in granting admission to those who are interested in the study of art.

THE FINE ART SOCIETY.

AT this Society's Gallery there is an exhibition of the works of a German animal painter, Herr Kuhnert, hitherto we think unknown in this country. There can be no question about his powers; he is a very fine painter, and represents animal life with remarkable power of execution and force of character.

THE BAILLIE GALLERY.

There is some good work in the rather mixed exhibition at this Gallery. The drawings and paintings by Mr. C. Moore Park did not interest us very much, except his decorative treatment of birds in flat colours, which would lend themselves well to execution in inlay. Miss Jessie Bayes's small "Illuminated Panels" are very good; and in another room is a case containing jewellery by Mrs. Gaskin which is of beautiful design and execution, and well worth attention. This room is hung round with small landscapes on toned paper by Mr. Gaskin, slight in execution but poetically suggestive.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Mile End Old Town Guardians 2,400*l.* for poor law purposes; and sanction was given to the borrowing by Stepney Borough Council of 1,500*l.* for acquisition of land, and to Wandsworth Borough Council to the borrowing of 2,000*l.* for contribution to a street improvement.

Theatre, etc., Applications.—Sanction relating to the following matters was given:—

A drawing, submitted by Mr. W. Roberts, of a cinematograph hall proposed to be constructed by the adaptation of the ground floor of premises at No. 137, High-street, Clapham.

Drawings, submitted by Mr. M. S. Ward, showing premises in course of erection at No. 225, Oxford-street. It is proposed to provide a cinematograph hall, with a gallery, on the ground floor, and tearooms in the basement and sub-basement.

A drawing, submitted by Mr. B. Crewe, showing a permanent cinematograph chamber proposed to be provided at the rear of the pit at the Foresters' Music-hall, Cambridge-road, Bethnal Green.

Drawings, submitted by Mr. F. T. Verity, showing a permanent cinematograph chamber proposed to be constructed in the gallery at Gatti's Palace of Varieties, Westminster Bridge-road.

A drawing, submitted by Mr. J. T. Tussaud, showing a proposal to convert the refreshment-room in the north-western wing of Madame Tussaud's Exhibition, Marylebone-road, into a cinematograph hall.

A drawing, submitted by Messrs. F. Matcham & Co., showing a proposal to construct a false proscenium of hard wood and uralite or asbestos at the New Grand Hall, Camberwell New-road.

A drawing, submitted by Mr. N. Evans, showing a permanent cinematograph chamber proposed to be constructed at the Temperance Billiard Hall, High-street and Court Hill-road, Lewisham.

Model of the New County Hall.—It was agreed that the tender, dated November 30, 1909, of Mr. C. H. Mabey, amounting to 440*l.*, for the preparation of a model of the new County Hall, to a ¼-in. scale, equal in workmanship to the ¼-in. scale specimen submitted, be accepted.

Unemployment in Building Trade.—A protest was made against a recommendation to defer consideration of the commencement of work in connexion with the erection of new schools at Hoxton. A motion that the work should be proceeded with immediately was lost on a division.

Mr. G. Dew thereupon moved the adjournment of the Council. There was no doubt, he said, that the winter as it progressed would show an increase in unemployment. The curse was much in evidence in the building trade, though he was pleased to say it was "looking up." There were 10 or 12 per cent. skilled hands out of work at the present time, and he protested against the action of the Council in delaying the work. They asked for work and were given a stone.

Mr. Cyril Jackson (Chairman of the Education Committee): There is only a week's postponement proposed. Why all this nonsense?

Mr. J. R. Taylor seconded Mr. Dew's motion, which, however, was lost on a division by forty-seven to thirty-five.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1909.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1909. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Battersea.—The erection at the Battersea Polytechnic of a one-story addition on the southern side of Lurline-gardens, Battersea, and a one-story addition to the extension next to Battersea Park-road (Messrs. Mountford & Clapham for the Board of Governors of the Polytechnic).—Consent.

Hammersmith.—A building on the eastern side of Wormholt-road, Hammersmith, with a flank abutting upon the northern side of Sawley-road (Messrs. T. Mills & Son).—Consent.

Kensington, North.—Retention of a building on the western side and a building on the eastern side of Balliol-road, St. Quintin's-park, Kensington (Mr. G. R. Holmes for Mr. J. T. T. Holmes).—Consent.

Marylebone, East.—Retention of a projecting sign in front of Nos. 44 and 45, Rathbone-place, St. Marylebone (Messrs. J. Styles & Son for Messrs. G. Allen & Sons).—Consent.

Marylebone, West.—Retention of an addition to a stable on the south-eastern side of Elm Tree-road, St. Marylebone (Messrs. J. Barker & Co., Ltd., for Mrs. Hockinhall).—Consent.

Norwood.—Porches and bargeboards to eighteen houses on the western side of Claverdale-road, Norwood (Mr. A. R. Westworth for Mr. H. Liddiard).—Consent.

St. George, Hanover-square.—An iron and glass porch in front of No. 21, Grafton-street, St. George, Hanover-square (Messrs. Hubbard & Moore for Messrs. Perry & Co.).—Consent.

Strand.—Retention of ornamental swags and three notice boards upon the shelter in front

of the Empire Theatre, Leicester-square (Mr. F. T. Verity).—Consent.

Hackney, North.—Buildings on the western side of Stamford-hill, Hackney, to abut also upon the northern side of Amhurst Park (Mr. D. Morris).—Refused.

Islington, East.—An illuminated sign in front of No. 19, Highbury-place, Islington (Messrs. W. J. Furse & Co. for Messrs. Morton Brothers & Co.).—Refused.

Width of Way.

Kensington, South.—A building at the rear of Nos. 38 and 40, Bedford-gardens, Kensington, to abut upon the southern side of Campden-street, and to be at less than the prescribed distance from the centre of the roadway of such street (Mr. T. P. Figgis for Mr. R. Vicat Cole).—Consent.

Limehouse.—A building to abut upon the southern side of Brook-street, the eastern side of Cranford-street, and the northern side of Bere-street (Mr. E. J. Gosling).—Consent.

Wandsworth.—Three buildings on the southern side of Ironmill-place, Wandsworth, with a forecourt fence next to Vermont-street (Mr. F. Rashbrook).—Consent.

Width of Way and Lines of Frontage.

Deptford.—A building on the western side of Bolina-road, Rotherhithe (Messrs. Rogers & Covington for Messrs. R. H. & S. Rogers, Ltd.).—Consent.

Line of Frontage and Construction.

Bow and Bromley.—The retention of an iron and wood signboard of a temporary character at Nos. 131 and 133, Bow-road, Bow (Messrs. C. Yates & Co.).—Consent.

Width of Way and Construction.

Woolwich.—A steel and iron building at the premises of the London Flambo Fuel Company upon a site on the western side of a footpath leading northwards from Gallions Railway Station, Beckton, North Woolwich (Mr. J. M. Kennard for the London Flambo Fuel Company).—Consent.

Space at Rear.

Marylebone, West.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building upon the site of Nos. 32, 34, 36, and 38, Edgware-road, St. Marylebone, and Nos. 66 and 68, Seymour-street, with an irregular open space at the rear (Mr. F. W. Hunt for Messrs. G. Cozens & Co., Ltd.).—Consent.

Westminster.—Deviation from the plans approved in respect of the erection of a building at the north-eastern corner of Smith-square, Westminster, so far as relates to an alteration of the internal planning of the ground floor of No. 10, Smith-square (Messrs. Blow & Billerey for Lady Agnew).—Consent.

Alteration of Building.

Chelsea.—An enclosure to a proposed lift at No. 39, Cadogan-square, Chelsea, and a projecting water-closet at the first floor level of the said premises (Messrs. A. Moore & Co. for Sir George Armstrong).—Consent.

Uniting of Buildings.

St. Pancras, East.—The uniting of No. 2A, Camden-road, Camden Town, with Nos. 4A and 6A, Camden-road (Mr. F. J. Folkard for Messrs. George & Battin).—Refused.

Cubical Extent, Uniting of Buildings, and Alteration of Buildings.

St. Pancras, East.—The uniting of blocks of premises used as a motor garage and abutting upon Whitcher-place and Rochester-mews, St. Pancras (Mr. H. Goodchild for the Express Motor Cab Company).—Consent.

Architectural Societies.

EDINBURGH ARCHITECTURAL ASSOCIATION.

AT a meeting of the Associate Section of this Association on the 1st inst., Mr. A. Pordage, Firemaster of Edinburgh, read a paper on "Effects of Fire on Fire-resisting Construction." He said his experience had led him to the conclusion that it is not so much the matter of material as of internal arrangement of areas, floor spaces, partitions, and divisions that is all-important in determining how far a building with its contents will resist effects of fire within its walls. The non-inflammability or otherwise of constructive material could have no retarding effect, for instance, in a light goods warehouse, where the floors are arranged in a series of galleries round a well through the centre of the building. The disposition of spaces, partitions, and above all the particular uses to which the building is intended to be applied were the governing factors in fire-resisting construction. It was erroneous to apply the term to the structure alone. He was inclined to the belief that no building of whatever nature stocked with highly inflammable goods, when once the stock has got well alight, would withstand the effects of the fire without sustaining serious damage to its stability. Of all material used in building construction, and particularly for stairs and unprotected landings, stone was the most dangerous when subjected to fire. A hardwood stair, say of 1-in. treads filled in with pugging or deafening and a soffit of good plaster on the under side, would withstand the effects of actual contact with flame for the whole period of a fire, while the sudden alternations of heat and cold would cause stone to collapse. The position as well as the composition of stairs was an important matter to consider in designing buildings, particularly those of a public character, where large numbers of the public were to assemble. The stair well should not be within the main building, but should be attached. It was also a mistake to enclose these stair wells within four walls. The top outer half of each landing should be open to let off smoke or vitiated air. The common stair in an ordinary tenement in Scotland did not add to the comfort or safety of the residents. It had often occurred to him that, instead of running the front wall of tenements up to the top in an unbroken line, balconies should be formed on each landing, the top half of which would be open to the air. Such an arrangement would be an immense advantage in case of fire, because only the particular house on fire would be affected by the smoke, whereas with an enclosed stair a fire on the lower flats meant that the whole of the residents above had to turn out, and were often rescued from suffocation from the windows. The results of fires in different parts of the world had demonstrated that there had not yet been constructed any special class of building that had withstood the ravages of a conflagration. Metal construction had failed; almost every variety of stone had proved to behave disastrously when exposed to a fierce fire; and of all building materials good sound and solid timber, though doomed in the end, had been found to withstand the effects of fire longer than iron or steel. One trait in its favour was that it was neither distorted nor deflected by the heat. A wooden beam must be consumed to the breaking point before it gave way. Sound and seasoned timber gave a greater security and stability to a building on fire, and permitted of the fire being attacked from within. In support of his contention he took the scale of an ordinary tenement in Scotland. It was very rarely that a fire spread from one floor to the next above, and yet the very commonest of building material was employed. For large external walls stone had proved to be absolutely unreliable. Properly-bonded brick with good mortar would withstand the fiercest fire, and would remain in position for days after a fire. Concrete floorings, though incombustible, were not fire-resisting, and usually failed in the early stages of a fire. Reinforced concrete had, however, remedied the defect so apparent in the early application of concrete. The lecturer went on to observe in regard to the growing tendency towards extraordinarily high steel-frame buildings that it had been conclusively proved that the tall steel-frame built fireproof building acted as a fire-conductor when the contents of the building were alight and got beyond control of the fire equipment. The lecture was illustrated by means of a number of limelight views showing the effects of fire on various buildings during the conflagrations at Baltimore and San Francisco. — *Glasgow Herald.*

Engineering Societies.

THE SOCIETY OF ENGINEERS.

AT the meeting on Monday last a paper on "The Mechanics of Dust" was read by Mr. C. H. W. Biggs, who said that the coming of mechanical traction showed that roads constructed for one class of traffic were unsuited for a totally different class. Dust troubles led to various methods being tried in relief; and no doubt, during the transition period of roads and vehicles, palliation by some form of dust prevention would be necessary. Dust was matter in small masses, and these masses were subjected to forces of varying intensity and direction. If the magnitude of the forces acting are known, the masses such forces will move are always known. It must be the aim of preventives or palliatives to obtain masses sufficiently large not to be moved or not to be moved offensively under the forces acting. Usually the preventives are of a cementitious or glutinative character, and if these act to accrete the dust into masses too large to be moved under the forces acting, they succeed in their object.

The dust to be acted on is due to (1) being put on the road, (2) being a part of the road material, (3) too heavy rolling, (4) wear and tear.

A good road should be homogeneous throughout, and may be known by the ratio per cubic foot of road to the cubic foot of stone aggregate used. The cementitious material should be always ready to act, and be such in quantity that it was just enough to cement the dust into particles too heavy to be moved. The making of a good road depended upon four factors: (1) The proper aggregate, (2) the proper agglutinative, (3) the proper mixing, and (4) the proper consolidation.

JUNIOR INSTITUTION OF ENGINEERS.

With the permission of Mr. Maurice Fitzmaurice, Chief Engineer to the London County Council, a large party of members of this Institution recently paid a visit of inspection, under the guidance of the Resident Engineer, Mr. E. H. Tabor, to the Embankment Wall Works for the new County Hall, Belvedere-road. The hall is to be erected on land reclaimed from the River Thames. This area of about 2 acres will be enclosed by an embankment wall nearly 600 ft. long, which is now being constructed. The new wall, which will be very similar to the Victoria-embankment on the opposite side of the river, is built of concrete, with a granite facing down to low-water level, and with a granite parapet. It is being constructed inside a cofferdam, consisting of a single row of 14-in. Oregon pine piles, which have been driven into the London clay, upon which stratum the wall itself will be founded. Behind the wall is a continuous concrete raft, 5 ft. thick, on which foundation the main building will be erected. A width of about 40 ft. next to the embankment wall will be vaulted, the top of the vaults being paved and forming a terrace. Special precautions have been taken at the end of the work next to Westm;nster Bridge in order to avoid disturbing the bridge foundations. With this object a caisson, 35 ft. by 20 ft., has been sunk by the compressed-air process close to the abutment of the bridge, and this part of the wall founded upon it.

THE SURVEYORS' INSTITUTION.—A meeting of this Institution was held at 12, Great George-street, Westminster, S.W., on Monday, when Mr. C. P. Hall read a paper on "Local Taxation and the Compound Householder." Although of general interest, the paper does not come within our province to report.

FRAMWELLGATE BRIDGE, DURHAM. — This structure, built by Bishop Flambard in 1120, and rebuilt in the XVth century, is being restored. The work is being carried out by Messrs. Jasper Kell & Sons, Durham, and the British Concrete-Steel Company, under the supervision of Mr. Wm. Crozier, the County Engineer.

Digitized by Google

THE BUILDER

DECEMBER 11, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 3d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 12s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, DECEMBER 10.

The Architectural Association.—Mr. F. C. Eden on "Varallo, Orta, and Varese." 7.30 p.m.

Association of Water Engineers (fourteenth winter meeting, Geological Society, Burlington House, W.).—(1) "Reservoir Outlets," by Mr. George N. Yourdi, M.Inst.C.E.; (2) "Evaporation from Water Surfaces," by Mr. Sidney R. Lowcock, M.Inst.C.E.; (3) "A Sterile Boring in the Inferior Oolite (Somersetshire)," by Mr. William Phelps; (4) "Ferro-Concrete as Applied to Waterworks Construction," by Mr. Harry W. Taylor, Assoc.M.Inst.C.E.; (5) discussion on paper presented at the summer meeting, entitled "Public Water Supply for Fire Extinguishing," by Mr. C. W. S. Oldham, Borough Water Engineer, Ipswich. 2 p.m.

SATURDAY, DECEMBER 11.

Association of Water Engineers.—Fourteenth winter meeting (concluded). 10.30 a.m.

Incorporated British Institute of Certified Carpenters (Carpenters' Hall, London Wall, E.C.).—Visit to new offices of His Majesty's Commissioners of Woods and Forests, Whitehall, London, S.W., by permission of the architect, Mr. John Murray. 3 p.m. Annual general meeting, when the report and balance-sheet will be presented and the officers and Council for the coming year will be elected. 6 p.m.

The Institution of Municipal Engineers.—A general meeting, to be held at Caxton Hall, Westminster. Adjourned discussion on the Report of the Examination Committee. The following short papers will be presented for discussion:—(1) "Superannuation and Security of Tenure," by the President; (2) "Sludge Disposal," by Mr. W. C. Easdale, M.S.E.; (3) "Short Methods of Calculation for Checking Reinforced Concrete Works," by Mr. E. Flander Etchells, F.Phys.Soc., M.Math.Assoc., A.M.I.Mech.E. 11 a.m. A dinner will be held in the evening at the Gaiety Restaurant, Strand, W.C., at seven o'clock.

MONDAY, DECEMBER 13.

Royal Institute of British Architects.—Professor A. D. F. Hamlin on "Architectural Education in America." 8 p.m.

London Institution.—Mr. Vaughan Cornish, D.Sc., on "The Panama Canal and its Makers." Illustrated. 5 p.m.

The Incorporated Clerks of Works' Association (Carpenters' Hall, London-wall).—Monthly meeting. 7.30 p.m.

TUESDAY, DECEMBER 14.

Institute of Sanitary Engineers (Students' Lecture).—Mr. G. W. Chilvers on "Practical Heating and Hot-water Supply to Buildings." 7 p.m.

University Extension Guild (British Museum).—Lectures on "Ancient Architecture," by Mr. Banister Fletcher.—XI. "Greek Corinthian Order and examples."—VI. 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy."—IX. 6 p.m.

Institution of Civil Engineers.—Mr. C. W. Hodson, C.S.I., on "Railway-Signalling in India." 8 p.m.

WEDNESDAY, DECEMBER 15.

Builders' Foremen and Clerks of Works' Institution.—Annual meeting of the Directors. 7 p.m. Ordinary meeting of members. 8 p.m.

Edinburgh Architectural Association (Associates' Meeting).—Mr. A. Muir on "Mediæval Stone Carving." Lantern slides. 8 p.m.

Northern Architectural Association (Students' Meeting).—Mr. E. Stevens on "Renaissance Architecture." 7.30 p.m.

Junior Institution of Engineers (at the Royal United Service Institution, Whitehall).—Paper on "The Design and Maintenance of Cement Works," by Mr. Harry Horsburgh, Assoc.M.Inst.C.E. 7.30 p.m.

THURSDAY, DECEMBER 16.

Institution of Electrical Engineers.—(1) "Some Quantitative Measurements in Connexion with Radiotelegraphy," by Dr. J. S. Fleming, F.R.S. (2) "Efficiency of Short Spark Methods of Generating Electrical Oscillations," by Dr. W. H. Eccles and Mr. A. J. Makower. 8 p.m.

FRIDAY, DECEMBER 17.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. Alexander Davidson on "Chester." Illustrated. 8 p.m.

The Institution of Mechanical Engineers.—Mr. William Mason, of the University of Liverpool, on "Mild-Steel Tubes in Compression and under Combined Stress"; and Mr. C. A. M. Smith, B.Sc., East London College (University of London), on "Compound Stress Experiments." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. H. T. Tudsbery on "The Foundation and Construction of Dock Walls." 8 p.m.

SATURDAY, DECEMBER 18.

Institution of Civil Engineers.—Students' visit to the printing works of Messrs. Edward Lloyd, Ltd., Salisbury-square, E.C. 8.30 p.m.

Fifty Years Ago.

FROM THE *Builder* OF DECEMBER 10, 1859.

THE WESTMINSTER BELL.—"Mears *v.* Denison."—This cause was entered for trial for the sittings after Michaelmas Term in London, and would have been tried by Lord Chief Justice Cockburn and a special jury. Mr. Denison had pleaded a justification to the libel with which he was charged. The cause was yesterday withdrawn, Mr. Denison having abandoned his defence. The plaintiff will therefore take a judgment by default. The only matter remaining to be determined is the amount of damages, which, in the usual course, will have to be assessed in the Sheriffs' Court.

*** "Mr. Denison," some readers may not remember, was the same gentleman who was afterwards a little too well known to architects under the title of Lord Grimthorpe. It appears that, though a lawyer, he overshot the mark of legally permissible libel for once.—ED.

COURT OF COMMON COUNCIL.

THE Lord Mayor presided over a meeting of the Corporation held at the Guildhall on Thursday last week.

The Engineer's Staff.—The Streets Committee, reporting on the question of the reorganisation of the Engineer's staff, recommended—(1) That Mr. J. G. Garthwaite, Chief Assistant, who has been in the service for twenty-three and three-quarter years, be retired on an allowance of one-sixtieth of his present salary for every year's service, adding ten years in view of his professional attainments when he entered the department. (2) That a chief assistant be appointed, and that it be referred back to the Committee to advertise for candidates. (3) That in lieu of a chief inspector of pavements and measuring clerk and an assistant measuring clerk, two distinct offices be created, viz., (*a*) an inspector of outdoor works; and (*b*) a measuring clerk. The Committee also asked for authority to fill the vacant position of inspector of sewers, and also that of foreman of sewers.—The Court approved.

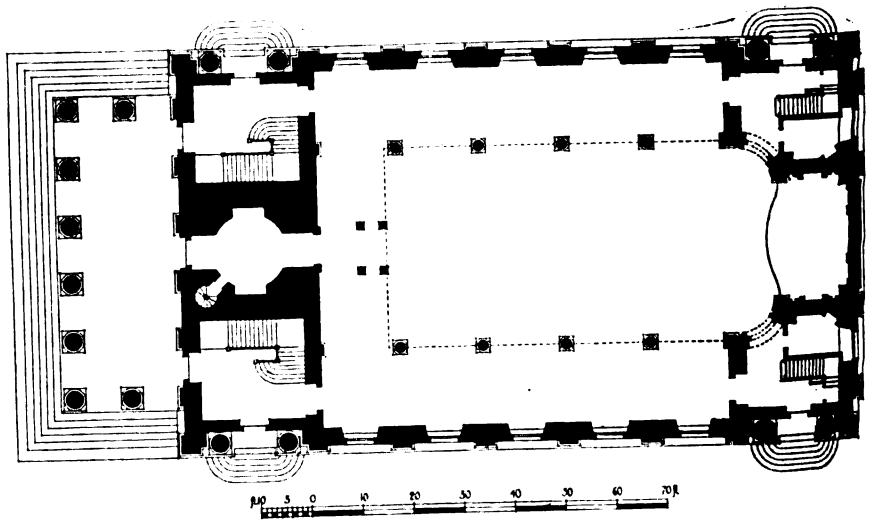
International Association of Road Congresses.—The Streets Committee, reporting a letter from the President of the Executive Committee of the Permanent International Association of Road Congresses (Paris), recommended that the Corporation should become a "permanent" member of the Association at an annual cost of about 4*l.* for the next three years, and that Mr. Deputy Morton, M.P., be appointed to represent the Corporation at the second Congress to be held in Brussels next summer.—The Court agreed.

Snow and the Use of Salt.—Some discussion arose on a recommendation of the Streets Committee that an offer for the immediate delivery of broad salt for use in connexion with the removal of snow should be accepted.—Colonel Beningfield moved as an amendment that the matter be referred back, on the ground that the use of salt in the City streets caused great suffering to ill-shod people and to animals.—Mr. Deputy Morton, M.P., said the use of salt was often absolutely necessary. The late Commission of Sewers offered a prize for a substitute, but not one had been forthcoming. On a show of hands the Committee's suggestion was adopted.

Illustrations.

CHURCH OF ST. MARTIN-IN-THE-FIELDS.

GIBBS made two designs for a church upon a circular plan which, whilst at first approved, were set aside upon the score of their cost. The present edifice was erected on the site of the former church (1535, chancel added in 1607), for 36,891*l.* 10s. 4d., including 1,500*l.* for the organ. Gibbs's receipt in full for 632*l.* 4s. 6d. is preserved. The building-account ledger shows that he was paid items of 66*l.* for his "model" or design, 5*l.* 10s. for "alterations on it," and 10*l.* 14s. 6d. for "a plan of the east windows," with 550*l.* for his six years' labours. T. Bradberry's measured drawings in Weale's "Architectural Library" give the height of the portico columns with their bases and capitals as 33 ft.; from the floor level to the



Plan of St. Martin-in-the-Fields.

Digitized by Google

apex of the pediment 58 ft. 6½ in., and to the vane 185 ft.

The steeple, struck by lightning on July 28, 1842, was reinstated to an extent of some 45 ft. In 1858 T. Hayter Lewis decorated the interior and lowered the pews, which had been made to range with the pedestals of the columns: see our illustration, October 23, 1858, of the alterations. Mr. Henry Jacques, Surveyor to the Vestry, cleaned and redecorated the interior about thirty years afterwards, when Mr. Boore presented Rysbrack's bust (1726) of Gibbs to the church. In 1893-7 Sir Arthur Blomfield & Sons repaired all the external masonry, dressing it with "fluate," and carried out a scheme of redecoration. T. Allom designed the existing case for the organ, 1854, by Bevington & Son; the organ was rebuilt by Hill in 1869.

Some of the earliest views and drawings of the church—for instance, those by West and Toms, 1738, and Hulsbergh—depict a wide open yard on the south side delimited with posts; one print by West and Toms shows the steps at the west end as in two flights with a wide landing or rest midway, the lower flight dying into the slope of the ground.* Later drawings—for example, C. Taylor's of 1795, T. Malton's fine aquatints of 1795 and R. Ackermann's of 1815, with T. Bonner's, after J. R. Thompson, 1810—clearly show the lower flight of steps, and also an enclosure with a retaining wall along the south side of the churchyard and the east side of (old) St. Martin's-lane. The present retaining wall to the south and east, with railings by Cottam & Hallen, was built in 1828-9, when the graveyard and vaults were reconstructed as part of the extensive improvements, with a readjustment of the levels, effected under the Acts of 1813 and 1826: see the plans in the *Builder*, January 2 and July 2, 1904. It is of interest to recall that the National Gallery was set back purposely to open out a view of the church, then almost hidden by surrounding buildings. In 1887 the late Metropolitan Board of Works prepared a model for altering the steps and widening the way in front of the Church. Butterfield proposed to mutilate the portico by removing the outer row of columns. In spite of the expressed opinion of the Institute, the City of Westminster Council, in the autumn, 1900, cut away some steps and changed the gradient-rate of the ascent up the new steps on the west by obliterating the platform on that side; for a compromise they retained, but reduced, the south landing. Thus a skilfully-gained effect was dispelled by the destruction of a symmetrical and complete range of seven unbroken steps rising from a horizontal base to the portico floor, and by the loss of the west platform which separated from the design the lower set of broken steps merging into the steeply-rising incline.

There are drawings by Gibbs and Vertue of the old church, which served a parish that was shorn successively for those of St. Paul, Covent Garden, St. Anne, Soho, St. James, Westminster, and St. George, Hanover-square.

The exterior is so well known that there is no need for detailed description. The hackneyed objection to the steeple as overweighting the portico, and possessing no "visible means of support," we need not repeat. While perhaps we may not quite agree with Savage's apostrophe:—

> "O Gibbs! whose art the solemn fane can raise,
> Where God delights to dwell, and man to praise!"

we may affirm without challenge that St. Martin-in-the-Fields is one of our most valuable legacies from post-Wren days. Allan Cunningham, in his life of Gibbs, says very pointedly that the cost "was thirty thousand pounds, and we may safely ask whether anything so good has been erected since for double the money." Few writers have said much about the steeple; it is very well designed, and has served as the prototype of a very large proportion of the Renaissance steeples which have been built since. James's tower at St. Alfege, Greenwich (without the spire), and Flitcroft's steeple at St. Giles's-in-the-Fields are the closest approximations in London. The portico easily holds its own against its two great rivals in Bloomsbury and Hanover-square in spite of the railings, which, though handsome and massive in themselves, have so long outraged the eyes of Londoners by their unlawful intimacy with the columns.

The interior, it must be confessed, is somewhat tawdry and theatrical in appearance. Its good points are borrowed from St. James's, Piccadilly, and its bad points are due to Gibbs. Corinthian columns, cut into midway by galleries, carry a fragment of entablature, from which springs the elliptical barrel vault which spans the nave, its base pierced by the arches which are thrown from column to column. Arches of similar form run back at right angles from those just mentioned, to the outer wall, where they take their bearing upon another fragment of entablature of pilaster-projection, supported by a console. Over the square compartment thus formed is placed a saucer dome upon pendentives, and in this manner the aisle is roofed, the nave arcade consisting of five arches.

* The authoritative drawings for that time give apparently contradictory evidence in respect of the lower steps. They are not shown by Hulsbergh.

"UPTON GREY," HANTS.

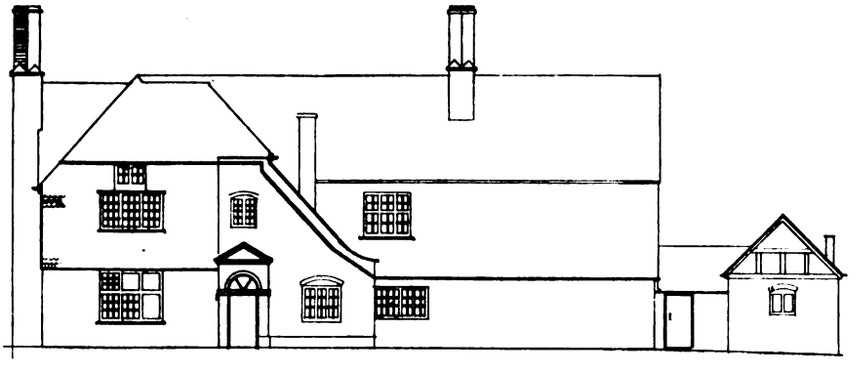
THIS was an old farmhouse, the property of Mr. Charles Holme, of Upton Grey House. It had been very much altered inside and out, part of it being used as cottages. Two fine chimneys remained, and also some half-timber work on the north gable which does not show in the photograph; this was practically all the old work of value externally.

Inside there was a massive oak staircase and two panelled rooms. All this has of course been left. The timber porch and bay are made of some old oak. The angle posts are 8 in. by 8 in., and the other timbers in proportion.

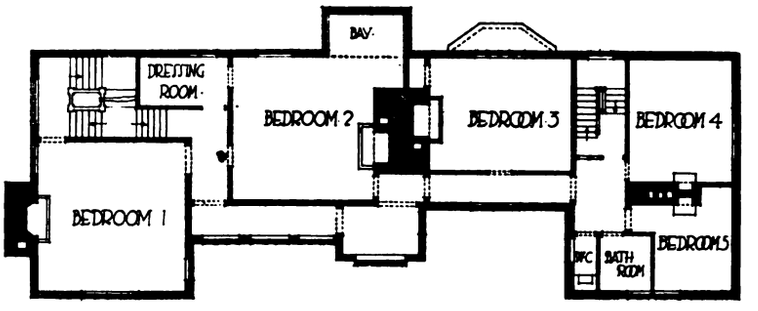
The general builder was Mr. Manser, of Sherfield-on-Lodden, and the work was all done in "country fashion" without any contract, Mr. Manser working with his men.

Mr. W. Nicholls was clerk of works, or architect in residence, and gave the closest attention to every detail, and also rendered invaluable assistance in every way.

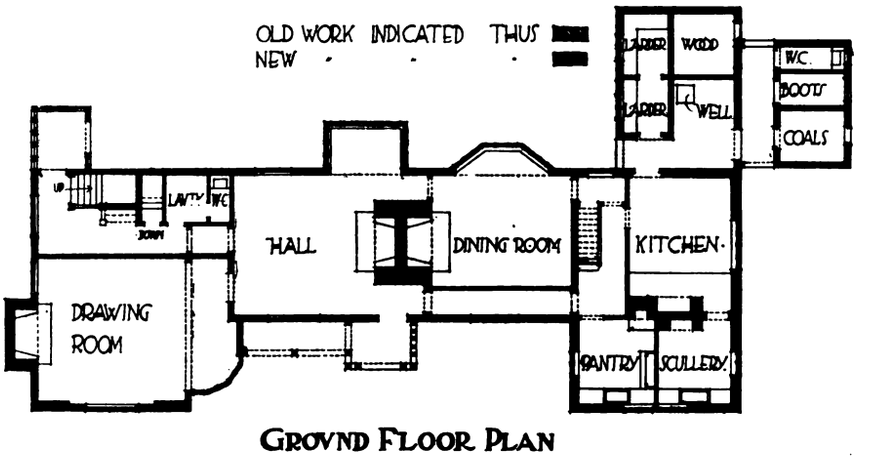
ERNEST NEWTON.



Elevation of House before Alterations.



FIRST FLOOR PLAN



GROUND FLOOR PLAN

SCALE OF FEET

"Upton Grey," Hants.

Digitized by Google

CLAPHAM SECONDARY SCHOOL FOR GIRLS.

THIS school, which was opened on Thursday last, has been planned for 476 students, and consists of four floors. All the rooms have been placed in those positions considered best suited for the purpose they are intended for; the classrooms are left-hand lighted and have a sunny aspect; they are arranged in accordance with the principles laid down by the Board of Education.

The following accommodation is provided:—

Ground Floor.—Dining-hall and gymnasium, 74 ft. 4 in. by 37 ft. 6 in. (combined), kitchens, etc., room for cookery instruction, cloakroom and lavatories, head and assistant teachers' rooms, and clerks' office.

First Floor.—Assembly hall, 86 ft. 3 in. by 37 ft. 6 in., surrounded by nine classrooms, library and reading-room, and room for inspectors, managers, etc.

Second Floor.—Upper part of assembly hall with gallery round, and nine classrooms, staff library, and assistant mistresses' room.

Third Floor.—Advanced and elementary art room, chemical, physical, and botanical laboratories, with balance dark room, preparation room, etc., lecture-room, needlework-room, music and practice rooms, and school museum.

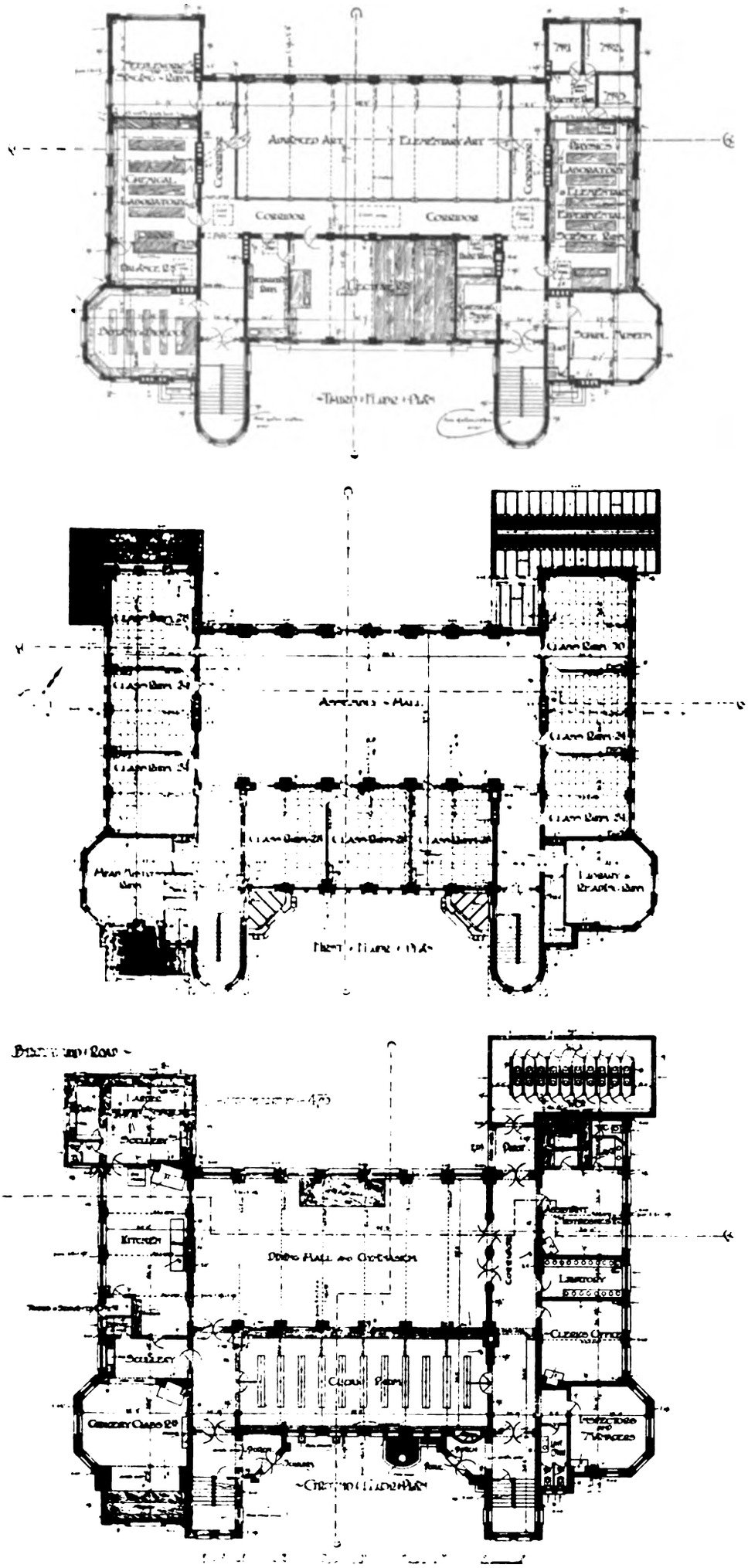
The floors and staircases are constructed of fire-resisting material, and ample provision is made for entrances and exits. The ventilation throughout the building is by means of fresh-air boxes and extraction shafts at the ceiling level; the heating is by low-pressure hot water and open fires to sitting-rooms, etc.

The style of architecture adopted is free Renaissance. Externally the walls are faced with red bricks, relieved by dressings to windows, doors, etc., of Portland stone; and the roofs are covered with Broseley tiles.

The site contains an area of nearly two acres, and ample provision is made for recreation; part is laid with turf, and the rest has a tarred paved surface. A strip along the whole of the south wall is also allotted for nature study work.

"Upton Grey," Hants: Centre Portion of Entrance Front (see page 643).

Digitized by Google



Clapham Secondary School. Plans.

The work has been carred out by Messrs. Holliday & Greenwood (whose tender of 25,919*l.* was accepted), from the plans and under the superintendence of Mr. T. J. Bailey, Architect to the Education Department of the London County Council.

Legal Column.

LANDLORD AND TENANT.

A DECISION of a judge of the King's Bench Division in the case Dendy *v.* Evans (current "Law Reports") raises questions of some complexity, but is of importance to lessors and lessees. Certain premises had been leased for twenty-one years, and the lease contained a covenant to keep the premises in repair, with a right of re-entry on breach of any covenant. The lessee sublet the premises by under-lease containing similar covenants, and a covenant to observe the covenants contained in the head lease. On October 27, 1908, the lessor, there having been a breach of the covenant to repair, served a notice on the original lessee under sect. 14 of the Conveyancing and Law of Property Act, 1881, and commenced an action for forfeiture of the term. This lessee gave notice to the executors of the sublessee of this action, and required them to execute the repairs. On February 16, 1909, the lessee assigned his interest in the head lease to the plaintiff in the present action. The plaintiff then applied for relief under sect. 14 of the Conveyancing Act, 1881, in the action that had been commenced by the lessor for forfeiture against the lessee, and obtained the relief, and was now suing the executors of the sublessee for the arrears of rent. In this action these defendants contended that the proceedings for forfeiture had determined the lease and the sublease with it, and therefore they could not be sued for rent. The decision of the Court amounts to this, that the "relief" when granted under sect. 14 wipes out the forfeiture altogether, and the lease continues. This section expressly excepts re-entry, forfeiture, or relief in cases of non-payment of rent; relief in such cases must be sought under the Common Law Procedure Acts, and relief under those Acts continues the lease, therefore the effect of this decision is very important, as it brings into line the procedure for relief for non-payment of rent under the latter Acts, and relief for breach of other covenants under the Conveyancing Act, 1881.

The decision of the Court of Appeal in the case of Salamon *v.* Holford (current "Law Reports") is of some importance to tenants. The lease was in respect of the first, second, third, and fourth floors of certain premises in Bond-street, which were let at 300*l.* a year clear of all deductions, and the lessor covenanted to pay "all rates, taxes, duties, and outgoings (including water rate) now payable or hereafter to become payable in respect of the said premises, except inhabited house duty." The basement and ground floor were let to other parties, and at the date the above lease was entered into the premises were assessed to rates and taxes as a whole at 550*l.* net ratable value, the proportion attributable to the upper floors being 194*l.* The lessor sublet the upper floors at a profit, the rental derived being 510*l.* At the quinquennial revaluation the premises were assessed separately, the upper floors being assessed at 293*l.* The question for the Court was whether the lessor was liable to pay the whole of the increased rates, he contending that the increased assessment was due to the profit made by the lessee. There having been no constructional alteration in the premises the Court held that under the covenant the landlord was liable for the increased rates. The case is distinguishable from certain decisions where covenants have been considered relating to land tax and the character

of the property has been changed by the lessee, as under building leases.

THE PATENTS ACT.

The Comptroller-General of Patents has given another decision under the Patents Act in regard to a patent for a method of cutting metal by means of a blowpipe and burner. The patent was applied for in December, 1904, by a Belgian who assigned it to a Belgian company, and therefore under sect. 27 no application to revoke the same could be made before December, 1908. There had been some negotiations for the sale of the patent to the British firm now holding the patent as early as 1905 and 1906, but these negotiations had fallen through, other patents also being involved. There had, however, been correspondence with English firms with respect to sales or licences, and it was desirable that a firm acquiring the patent should guarantee a supply of pure oxygen in this country. The patent had in 1908 been transferred to a British company which, at the date of the hearing, had manufactured a certain number of blowpipes; a very few had also been manufactured before the end of the year 1908. The Comptroller found that this was not a case where an attempt to manufacture had only been made after the application for revocation, and that although the use of the process had undoubtedly been delayed in this couutry in comparison with foreign countries, yet nothing had been done which endangered the successful manufacture of the article eventually in this country, and, being satisfied by the reasons given for inaction before 1908 and that there was adequate manufacture at the present time, he declined to revoke the patent. The Comptroller drew attention to the fact that in this and several other cases the arguments addressed to him appeared to be more suitable to an application under sect. 24 for a compulsory licence. It is curious that the powers conferred by this section have not been more frequently resorted to, as it provides an alternative remedy, the granting of a compulsory licence or the revocation of the patent.

Whilst referring to the subject of the Patents Act we may draw attention to a letter written to the Engineering Supplement of the *Times*, December 1, by a correspondent who states that he has communicated with various foreign firms who have started works in England, with the object of ascertaining whether it is the Act that has induced them to take this course or other considerations. He subjoins some of the answers he has received, from which it will be seen that it is admitted in some cases that the Act has been the cause of the establishment of works here, whilst in other cases various causes are assigned for taking the step.

Trade Catalogue.

THE Tudor Accumulator Company, of Victoria-street, Westminster, have sent us their new catalogue of cells for use in central stations and private lighting plants. No great novelties are described in the catalogue, but the increased life claimed for them and the appreciable reductions that have been made in their price prove that the method of manufacture has been improved. The positive plates are cast in one piece, and have a large surface due to vertical and horizontal ribs on the metal which intersect at right angles. Although the thickness of the plates is only 0·4 of an inch, yet the developed surface is eight times that of a smooth plate having the same boundary. This gives great electrical capacity, and at the same time great mechanical strength to resist "buckling" in any direction. The negative plates consist of two grids riveted together. The outer surfaces are pierced with numerous holes, and the space between them is made rigid by stout horizontal and vertical ribs and filled with a special paste. Tudor cells are now well known in this country, and the company guarantee them for two years. All interested in accumulators should write for this catalogue.

BOOKS RECEIVED.

THE ENCYCLOPÆDIA OF PRACTICAL ENGINEERING. Edited by Joseph G. Horner, A.M.I.Mech.E. Volume X. Pp. 240. (Virtue & Co. 7s. 6d.)

CEMENT IN SEAWATER: Report by the Society of Scandinavian Portland Cement Manufacturers. Pp. 59 and diagrams. (E. & F. N. Spon. 3s.)

BUILDINGS FOR SMALL HOLDINGS. By Thomas Potter. Pp. 104. (B. T. Batsford. 3s.)

A CONCISE TREATISE ON REINFORCED CONCRETE. By Charles F. Marsh, M.Inst.C.E. Pp. 213. (Constable & Co. 7s. 6d.)

Competition News.

WARRINGTON BRIDGE.

Twenty designs and tenders for the new Warrington Bridge have been received by the Town Council. Mr. John J. Webster, 39, Victoria-street, Westminster, S.W., has been appointed to adjudicate and report upon the plans, and also to superintend the carrying out of the work, his remuneration being fixed at 5 per cent. on the cost of the works, exclusive of travelling expenses.

CLUBHOUSE, ST. ANNES-ON-THE-SEA.

Sixteen sets of plans were sent in for the proposed new clubhouse for the Old Links Golf Club, St. Annes-on-the-Sea. The assessor, Mr. Ernest Newton, of London, has given the first award to Mr. Walter Stirrup and Messrs. Cooper & Slater, joint architects, of Richmond-terrace, Blackburn, second and third going to Manchester and Liverpool firms respectively. The estimated cost of the building is between 4,000*l.* and 5,000*l.*

Correspondence.

THE VENTILATING TRAP ON DRAINS.

SIR,—My reluctance to engage in the discussion of any technical subject, or in any controversy now, may I hope be excused when it is known that I am, and have been for about ten years, unable to read owing to the failure of my eyesight. With this I fear I must couple a growing laziness and a desire for rest. But I am roused to trouble you with this communication, because if I refrain from doing so a statement by Mr. Scott-Monerieff, and correspondence which has since appeared in your columns, may lead to the falsification of the early history of our modern sanitation.

Last year, having been asked by my friend, Professor Glaister, M.D., to give him some information about the invention of the ventilating drain trap, I was fortunately able to refer to the Minutes of the old Glasgow Architectural Society, and found that it was last December, exactly fifty years, since I designed and explained at a meeting of the Society—held on December 27, 1858—my ventilating trap. There may have been traps of the kind invented before, but I never heard of them.

The circumstances were briefly these. The subject of my paper was "The Ventilation of Sewers and House Drains," a subject little understood at the time. I exhibited a drawing of the old siphon trap, and pointed out that it was impossible to do what I recommended with it, and that it was not even a good trap, but that, as nothing else was available, I had been obliged to invent a trap for myself, a full-size section of which I exhibited, showing that it was not only a very superior trap, but that it provided ample facilities for the ventilation of both sections of the drain—the section nearest the sewer and that nearest the house, or either of them or neither as might be desired. I also showed that it allowed a much easier flow, and was more easily cleared than the old siphon. I am not aware that Buchan's trap, or any of the scores of traps which came into use about twelve years later than 1858, gave greater facilities for ventilation, the purpose for which mine was invented.

Buchan patented the trap with my approval—indeed, I may say at my instigation, because I thought it inconsistent with professional practice to have any pecuniary interest in an article which I would have occasion to recommend to a client; and, on the other hand, after waiting ten years, it seemed evident that unless someone was interested in pushing it it would never be put on the market. Buchan made a slight change affecting the flow of the sewage, not the ventilation. Although I thought, when Buchan showed it me, that it might be an improvement, I found that experience proved it to be the reverse. I need not enter further into my relations with Buchan, but I may simply add that, although the invention led me into considerable expense, I never derived one penny of remuneration from it.

JOHN HONEYMAN.

MEASURING SLATING AND TILING.

SIR,—I have been asked to write you respecting the remarks under the heading "Measuring Slating and Tiling" in the *Builder* of November 27. The facts shortly are these:—

The Quantity Surveyors' Association having decided to systematise the rules of measurement, which previously varied in different districts, between thirty and forty firms of master slaters and tilers (fully representative of London and the South) met and appointed a sub-committee to discuss the matter with the sub-committee of the Quantity Surveyors' Association. This meeting took place with the result that the "Standard System of Measurements for Slating and Tiling" now ruling was agreed upon, and, to complete the work, the master slaters and tilers issued rules with this system as their basis.

I quite agree with you that in so far as the revised rules differ from those previously in force, they should not be demanded in respect of orders we had booked, nor do I think the firms who took part in the negotiations would expect that they should. But I submit that it is to the distinct advantage of builders and contractors that they should know precisely what measurements their sub-contractors will require, and which will be authoritatively upheld by the quantity surveyor. It will further tend to the avoidance of disputes and make the business of tendering less speculative.

Custom has defined for many years past the measurements allowed in different districts, and I venture to think that on reconsideration you will find that there are but few items which are varied in the revision.

Finally, if the revised measurements should apparently tell in favour of the slate and tile merchant, competition is so desperate that none would dare the risk of gaining advantage thereby, but would decrease his price "per square" in due accordance.

WM. FOLLIT,
Chairman of Sub-Committee, and President, London Association Slate Merchants and Master Slaters.

P.S.—When the question of the "revision" was in debate, it was as open for the contractors to ask to be consulted, as it was for us.

FRIEZE OF THE PARTHENON.

SIR,—Mr. Platt's drawing, reproduced in your last number, is a restoration of one of the important central slabs. Much of the original is missing, but enough remains when compared with the sketch made by Carrey to make it possible to show what it was with a high degree of accuracy. Mr. Platt made the drawing at my suggestion, and I closely followed its preparation, hence this explanation.

W. R. LETHABY.

WORKMEN'S CLUB, NETHERTON.—Premises have been built for a workmen's club at Netherton. They are built of brick with stone dressings, and are estimated to cost 1,600*l.* The complete scheme includes a wing to be built containing a lecture hall, committee-room, and games-room. The work has been carried out from plans prepared and under the supervision of Mr. R. Wardle, surveyor, Netherton, Bedlington; the contractors being Messrs. Gordon Brothers, masons', joiners', painters', and plasterers' work; Mr. Dunn, Bedlington, plumbers' work; the lighting by the Stellite Petrol Gas Generator Company, Gosforth; and the decorated glass by Mr. Connell, Low Fell, Gateshead.

Digitized by Google

LONDON AND PROVINCIAL BUILDERS' INFORMATION CENTRE.

[COMMUNICATED.]

THE Secretary would be glad to receive the register forms from all builders who have not up to the present returned them, filled in with the class of work they undertake, viz., whether they have had experience of special work in churches, schools, etc., and also approximately the size of job they would be prepared to tender for. Space is provided on the forms for giving a list of executed works, and all who have special facilities for undertaking subcontracting work—such as lighting, heating, etc., should state so in the space provided for the purpose, a builder being often passed over for such work for want of this information on the part of the architect at the outset.

All firms possessing steam joinery works, stoneyards, etc., should record such. The purpose of these "forms" is to place the Centre in the position of furnishing information to architects respecting the scope of a builder's undertakings. Those who only undertake jobbing work should have no hesitation in recording it, as names of jobbing builders are frequently required.

Any who have not up to the present received either a prospectus or form for filling up can receive same on application to the Secretary, 24 and 25, Hart-street, Bloomsbury, by forwarding a stamped and addressed foolscap envelope.

Master Builders' Associations, etc.

TYNE AND BLYTH DISTRICT BUILDING TRADES' FEDERATION.

The annual dinner of the Tyne and Blyth District Building Trades' Federation was held on the 7th inst. at the County Hotel, Newcastle. The President of the Federation (Mr. W. T. Weir, of Howden) was in the chair, and he was supported by Councillor J. T. Armstrong (South Shields), Vice-President; Councillor W. Foster (Pelaw), President of Newcastle Association; Mr. A. G. White (London), Secretary of the National Federation of Building Trade Employers of Great Britain and Ireland; Mr. John T. Scott, President of the North Shields Association; Mr. G. T. Brown, of Sunderland, President of the Northern Architectural Association; Mr. J. Simpson, President of the Blyth Association; Mr. J. W. Moncur, Borough Surveyor of Sunderland; Mr. Robert J. Huntley, President of the Sunderland Association; Councillor W. H. Hope, of Sunderland, Secretary to the Tyne and Blyth District Building Trades' Federation; Mr. J. C. Hope, Vice-President of Newcastle Association, and others.

After the toast of "The King," Councillor J. T. Armstrong gave "The National Federation of Building Trade Employers." He said there was no trade with greater need of organisation than the building trade. They had to face strong competition, and they carried with them very great risks, but their National Federation was doing much to break down the risks that were imposed upon them. The aims and objects of the National Federation were not entirely of a selfish nature. The Federation did much work in connexion with Parliamentary Committees and the meeting of deputations, and if the outcome of this work was successful he ventured to say that in seven cases out of ten it was the proprietor and owner of works that benefited rather than the actual builder. He was glad to say that the Federation was making steady progress.

Mr. J. W. White (Vice-President) responded. He said that all the builders wanted was a perfectly fair agreement to both sides to a contract. He was glad to say that in this district they had made considerable progress. There had been some tilting against the Conciliation Board, but the great thing to remember was that this Board, promoted by the Federation, held the field. During the last four years there had been no strikes throughout the country in the trades connected with the Federation. They were having too much legislation, too much Parliamentary interference. They had had new rules recently in respect of scaffolding and the arrangements for building; this year they had had Labour Exchanges; next year they were to have insurance against unemployment; and when they coupled with that the Board of Trade returns, Workmen's Compensation Act, the Factory Acts, and so forth, they would wonder whether in their offices they were really builders or lawyers. He doubted whether the Labour Exchanges would justify their expense, but the builders would give them an honest trial. As to insurance against unemployment, he thought this question might be better combined with the Compensation Act.

Mr. A. G. White (Secretary of the National Federation) gave "The Tyne and Blyth District Building Trades' Federation." He said their organisation and other similar organisations had resulted from defensive needs. Like the workmen, they were relying on moral force.

The toast was responded to by the various local Presidents. The Chairman (Mr. Weir) said they had been passing through very depressed times, but he thought there were indications all round of better trade. Probably they were themselves to blame for the ill-effects resulting from depression, as they had so cut up business that very little profit had accrued. With their better organisation he hoped they would have more sense, and see that they got a fair return for their work. He trusted also that all the builders in the district would join their Federation. It was hardly fair that builders, and even quantity surveyors and architects, should benefit from the organisation of others.

Councillor W. Foster (Pelaw), Councillor J. T. Armstrong, Mr. John T. Scott (North Shields), and Mr. J. Simpson (Blyth) also responded.

Councillor S. Easten proposed "The Architects, Engineers, and Surveyors." He said the position of builder and architect was peculiar, but he was willing to admit that the large majority of architects, whilst understanding their power under the contract forms, used that power very fairly. At the same time, he thought it was unfair that where disputes occurred between two parties the question at issue should be referred to a third and interested party.

Mr. G. T. Brown responded. He trusted that the deliberations in progress with regard to subcontracting and separate trades would result in a satisfactory arrangement. Under the present form of Institute contract the architects' powers had been considerably curtailed, and there was now no reason for any contractor to assume that he was not, under this contract, going to get fair treatment. He would suggest that their Federation should acquaint their members with the effect of the various general conditions under the existing contract, which applied almost generally in the north of England.

Other toasts followed.

EDUCATION COMMITTEE OF THE LONDON COUNTY COUNCIL:

BRIXTON SCHOOL OF BUILDING.

AT the meeting of the Education Committee of the London County Council on Wednesday it was announced that as a result of a recent visit to the London County Council School of Building at Brixton by the Federation of the London Building Industries, the following letter had been addressed to the Chairman of the Committee:—

"DEAR SIR,—You may be interested to learn that a few representatives of the London Building Industries Federation have visited the Brixton School of Building, Ferndale-road, Brixton.

The following account of the visit will, I trust, convey to you and the Educational Committee of the London County Council some of the impressions made upon us as the result of inspecting the many interesting sides that the school presents in the development of technical education as applied to the building industries.

The Federation have consistently opposed what might be termed 'indiscriminate education.' By that we mean the education of a number of persons in trades or professions who have no intention of following same. Happily, at the Brixton School of Building 'indiscriminate education' does not exist, and we were assured by Mr. A. R. Sage, who conducted the party, that, without exception, all the evening students are working at the trades in which they are receiving instruction. In the case of the day students the fathers of the boys are required to sign a declaration that their sons are to follow the craft taught. The Federation regards the above with every satisfaction, as it not only insures the proper expenditure of public funds, but also safeguards the interests of the several trades concerned.

The whole work of the school bears the stamp of intelligent treatment, the kindred trades working hand in hand in the carrying out of schemes which cannot fail to be instructive. For example, in the bricklayer's shop the students are building a wall in English bond, with part end wall, door and window openings, etc.

The carpenter students have made the necessary door frames, etc., and have also fixed same, thus securing for the students a practical demonstration of everyday building practice. This system appears to be carried a good deal further, for we were shown a very fine example of brickwork which had been executed from plans prepared by student draughtsmen under the instruction of Profesor B. Pite, F.R.I.B.A.

The plumbing class is a particularly good one, and we were shown some very good examples of work. Carpentry, painting, masonry, are fully catered for, and some of the work in the masonry and carving shops is excellent. A beginning has been made with instruction in ferro-concrete construction, but all agree that this important study must be carried further, as little is known about it in this country; but we must all admit that in the practice of building construction in the future ferro-concrete must play a very important part owing to its almost unlimited possibilities.

Mr. G. Dew, L.C.C., the Chairman of the Federation, is very keen on the special training of students in this important branch of the building trade, and there is much to be urged in favour of this course, as to-day the men who are engaged upon works where ferro-concrete is being employed are practically ignorant, while the German workman has an intimate knowledge and profits accordingly.

In conclusion, let me state that the Brixton School of Building is not by any means a playhouse; on the contrary, we found it a home of science and intelligent training for building trade workers, and we heartily wish its work to be extended. . . .

(Signed) ALEX. GREIG,
Secretary."

LONDON AND DISTRICT BOROUGH COUNCILS.

Acton.—The Surveyor has obtained information from some twenty councils who have carried out road-tarring works. Nearly all were satisfied with the results. There was a difference of opinion as to whether a saving in scavenging can be effected upon a carriageway which has been tarred, but there was a general agreement that there was a substantial reduction in maintenance charges, and a large reduction in the cost of watering. The Surveyor suggested at the last meeting of the Highways Committee that an experiment be made in Acton in the way of tarring roads, one-half the length to be selected to be treated with tar laid on cold, and the other half with tar laid on hot. After some discussion the Surveyor said that nothing could be done until March next, and it was then agreed that the matter should stand over until the estimates were prepared.

Bermondsey.—319*l.* is to be spent in strengthening the Spa-road electrical feeder. The Grange-road feeder must also be strengthened soon, and a new feeder is to be laid to meet an increased demand in the Tower Bridge-road area. Plans have been passed for the erection of offices and warehouse at Bermondsey Wall. The builder is Mr. W. Nash, Crown Works, Childers-street, Deptford, S.E.

Camberwell.—Plans have been lodged for additions to St. Mary Magdalene's Church, St. Mary's-road, Peckham.

Greenwich.—A plan has been passed for Mr. A. T. Hall to build six houses in Bramshot-avenue, corner of Sherington-road.

Hampstead.—Ninety-five street gas lamps are to be converted into incandescent electric lamps. A proposal is under consideration to spend 4,000*l.* on various paving and other works for the benefit of the unemployed.

Islington.—Sewers are to be reconstructed in Holloway-road, at an approximate cost of 656*l.* The Borough Council has consented to the electrification of the tramways in Ball's Pond-road, and agree to pay one-third of the net cost of widenings, viz., 7,592*l.*

Kensington.—Channelling and paving works are to carried out at Kensington-square, at an estimated cost of 334*l.*

Lewisham.—The following plans have been passed:—Mr. W. Brenton; four buildings, Sydenham Hill-road; Messrs. Norfolk & Prior, seven houses, Fermor-road; Mr. James Watt, twelve houses and shops, and bakehouse, Bromley-road; Messrs. Edmondson's, Ltd., six houses, Mayow-road; Messrs. W. Smith & Sons, two shops and houses and bank premises, Dartmouth and London roads; Mr. J. W. Jerram, school-house and vestries at Unitarian Church, High-street.

Paddington.—825*l.* is to be spent in repairing sewers. The repaving of Kilburn-lane is under consideration. It is proposed to carry out the following works for the benefit of the unemployed:—(1) Footpath paving works, 500*l.*; (2) cleaning and internal decorative works at the Town Hall, 780*l.*

Digitized by Google

Shoreditch.—The Acme Flooring and Paving Company (1904), Ltd., are to supply 65,000 creosoted deal blocks, at 7*l.* 8s. 6d. per 1,000, for repaving carriageways opposite schools.

Southgate.—The Council has passed the following plans:—Mr. W. Moss, six houses, Amberley-road, New Southgate; Mr. J. Ives, eleven houses, Broomfield-lane, Palmer's Green; Mr. F. E. Davis, five houses, Greenlanes, Palmer's Green; Mr. W. R. Bertie, seven houses, Derwent-road, Palmer's Green; Mr. G. H. Carter, eight houses, Melbourne-avenue, Bowes Park; Mr. W. J. Edwards, fourteen houses, Fox-lane, Palmer's Green.

Southwark.—Sewers in Queen's-row and Cambridge-street are to be relaid, at an estimated cost of 441*l.* and 459*l.* respectively. Tarpaving and some other works, to cost in all 140*l.*, are to be put in hand in connexion with the laying out of the garden in the centre of West-square.

Woolwich.—4,608*l.* is to be expended in extending electricity mains into the West Woolwich areas. The following plans have been passed:—Mr. J. M. Kennard, 13, Railway-approach, London Bridge, building at North Woolwich; Mr. J. J. Bassett, 121, Earlshall-road, Eltham, nine houses, Shooter's Hill-gardens, Westmount-road, Eltham.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Metropolitan Asylums Board on Saturday last week the following, amongst other business, was transacted:—

Children's Infirmary.—At the last sitting of the Board a number of recommendations were brought up with regard to extending and improving the children's infirmary, and, as reported in the *Builder*, these were all adopted with the exception of one, for approving the provision of a hall and schoolrooms. The General Purposes Committee again brought up the recommendation, viz.:—"That approval be given to the provision of a hall and schoolrooms at the Children's Infirmary, and that, subject to the general approval of the Local Government Board to the scheme, the matter be referred to the Works Committee to prepare plans for consideration by the Children's Committee."—After some discussion the recommendation was adopted.

Orchard Hospital.—The Hospitals Committee reported that their attention had been called to the fact that the roofs of this hospital were leaky. The Engineer-in-Chief states that the defects are due to the fact that the sheets of corrugated iron are lapped only one corrugation, and that a lap of two corrugations is essential to ensure the roof being watertight. It was agreed to strip the roof and relay the sheets to the proper lap, at an estimated cost of 800*l.*

Darenth Asylum.—As the result of experiments conducted by the Engineer-in-Chief as to what economies could be adopted in the lighting of this asylum he advised new incandescent fittings of suitable types, but necessarily varying in character and intensity according to the different portions of the asylum in which they are required. He considered that if the alterations he suggested were carried out the consumption of gas would be reduced one-half, whilst three times the amount of light would be obtained. He estimated a saving of 18*l.* per week during the darkest weeks of the year.—It was agreed to carry out the suggestions.

Leavesden Asylum.—It was reported by the Asylums Committee that they had approved of a list of cleaning and painting works at this asylum to be carried out in the ensuing twelve months at an estimated cost of 696*l.*

METROPOLITAN WATER BOARD.

THE monthly meeting of the Metropolitan Water Board was held on Friday last week, when the following matters, amongst others, were dealt with:—

Proposed New Central Offices.—A lengthy report was submitted by the General Purposes Committee recommending that the London County Council be offered 100,000*l.* for the freehold of 24,930 sq. ft. of land fronting Kingsway, Sardinia-street, and Lincoln's Inn-fields on which new central offices for the Board might be erected. The Committee pointed out that the present headquarters at Savoy Court were totally insufficient to house the entire staff. Suggestions had been made that the Board should erect their new offices on their land in Rosebery-avenue, but the Committee considered the site was entirely unsuitable. With reference to the site recommended in Kingsway, the Committee referred at some length to its accessibility. With regard to the building which the Board should erect on the site they were of opinion that part of the ground floor frontage should be let by the Board for the purposes of shops. That part of the ground floor would undoubtedly be the least desirable portion for the purposes of the Board's offices, whilst at the same time the Board would secure a valuable return in rents if let to outside persons. The site in question would enable the main entrance to the new building to be formed in Lincoln's Inn-fields, and under the circumstances they did not think that even a sentimental objection could be taken to the proposal that part of the frontage should be let by the Board in the manner described. They were advised by the officers of the Board (and the advice was confirmed by an independent architect and surveyor, Mr. H. Chatfeild Clarke, whom they had consulted on the whole scheme now presented to the Board) that the cost of the building should be estimated at 100,000*l.*

The Finance Committee also brought up a report concurring in the suggestion of the General Purposes Committee, and recommending that application be made to the Local Government Board to allow 82,700*l.*, being a part of the surplus receipt of 97,000*l.* in respect of the sale of a portion of the Board's surplus land at Battersea, to be utilised towards defraying the cost of purchasing the land at Kingsway.

Considerable discussion took place on the recommendation.

Mr. Howell Williams pointed out that the Board had 7¼ acres of land at Rosebery-avenue, and central offices could there be erected at a cost of 50,000*l.* He submitted that the Board's income already did not meet their requirements, and held that they ought not to incur such an extravagant expenditure when by building in Rosebery-avenue they would save 150,000*l.*

Mr. Dove moved an amendment to the effect that the recommendation be referred back to the Finance Committee with the view to the consideration of the question of utilising the Rosebery-avenue or other sites.—Agreed to.

Water Supply of Cambridge.—The Water Examination Committee reported having received an application from the Cambridge University and Town Waterworks Company asking for the assistance of Dr. Houston in connexion with certain experiments proposed to be undertaken in sterilising their water supply, which is principally derived from the chalk.—It was agreed to accede to the application, and to permit Dr. Houston to retain any fees he might receive.

Diversion of Mains.—It was decided to expend 3,830*l.* on the diversion of mains consequent on the laying of tramways in the Wandsworth district. It was also agreed to expend 10,500*l.* in laying new mains in the Enfield Town district.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

BAILIFFE BRIDGE.—Mills (3,500*l.*); Messrs. Walsh & Nichols, architects, Halifax; Mr. H. Atkinson, builder, Leeds.

Barnet.—Alterations to fire-station (463*l.*); Mr. W. James, builder, Hadley.

Barry.—School, Holton-road; Mr. G. A. Birkenhead, architect, St. Mary-street, Cardiff.

Bedwellty.—Twenty houses, Gordon-road; Gordon-road Building Club, Bedwellty.

Bexhill-on-Sea.—School; Clerk to the Education Committee, Town Hall, Bexhill.

Birmingham.—Schools, Dixon-road; Mr. T. H. Buckland, architect, Education Offices, Birmingham.

Blackwood (Mon.).—Skating-rink; Secretary, Blackwood Skating Rink Company.

Bristol.—Skating rink, Shaftesbury-avenue; Secretary, Local Syndicate.

Brookfields.—School and minister's house; the Trustees, Congregational Church.

Broomfield (Essex). — School; Mr. F. Whitmore, County architect, Duke-street, Chelmsford.

Burton-on-Trent.—Reconstructing gas retort-houses (16,000*l.*); Mr. Bell, architect, Town Hall, Burton-on-Trent.

Carshalton.—The Urban District Council has passed plans for five houses in Rotherfield-road, for Mr. W. C. Cheshire.

Chalfont St. Peter (Bucks).—Church, Oval Way, Austin Wood; the Vicar, Parish Church, Chalfont St. Peter.

Coventry.—School, Broad-street (9,000*l.*); Messrs. Orr Brothers, builders, Foleshill.

Crompton. — Twelve houses, Peel-street; Councillor Henthorne, Crompton.

Cropredy.—Small country house and stables, farm buildings, etc., for Mr. J. Grisold, at Cropredy, near Banbury; Mr. F. J. Cooke, architect, 33, Bridge-street, Banbury.

Dudley.—The Town Council has passed a plan lodged by Messrs. J. Hanson & Son, for additions to brewery, Greystone-street.

Eastbourne.—The Town Council has passed the following plans:—Additions to Hillbrow Lodge, Buxton-road, for Messrs. Croome, Thornton, & Hunt, Mr. P. D. Stonham, architect, Mr. A. G. Pollard, builder; addition to parish room, Hartfield-lane, for the vicar and wardens of St. Anne's, Mr. W. Hay Murray, architect; additions to "Avenel," Saffrons-road, for Mr. P. Wehner, Mr. W. A. Knight, architect; additions to St. Cyprian's, Summerdown-road, for Mr. L. C. Wilkes, Mr. F. G. Cooke, architect; rebuilding gymnasium, Cornfield-road, for Mr. Joseph Willard, Mr. W. Hay Murray, architect. Additions are to be made to the motor omnibus depôt, at an estimated cost of 4,070*l.*

Farnham. — Sunday-school; Wesleyan Trustees, Farnham.

Fleur-de-Lis.—Ten houses; Mr. Martin, builder, Bedwellty.

Gerrard's Cross (Bucks).—Skating-rink, etc., Oak End Way (5,000*l.*); Mr. S. Fay, J.P., Woodbank House, Gerrard's Cross, chairman of directors.

Glasgow.—Offices, for Messrs. Dick (2,000*l.*); Messrs. Duncan & Copland, architects, 146, West Regent-street, Glasgow.

Great Bridge.—Additions to St. Peter's School; Rev. H. Jesson, vicar, St. Peter's, Great Bridge.

Great Harwood.—Eighteen houses; Mr. F. Mercer, architect, Great Harwood.

Highampton.—School; Mr. F. T. Badcock, builder, Ashburton.

Hove.—The Town Council has passed the following plans:—Four houses and shops, Wilbury-crescent, Mr. A. B. Packham for Mr. G. H. Gregory; eight bungalows, Aldrington Beach, Mr. R. Hembrow for the Hove Bungalow Company, Ltd.

Ipswich.—Additions to St. Bartholomew's Church; Rev. G. A. Cobbold.

King's Norton.—Education offices; Mr. Moor, architect, Education Offices, King's Norton.

Merthyr. — School, St. David's; Mr. Thackeray, school architect, Town Hall, Merthyr.

New Mills.—Sunday-school; Vicar, St. James's Church, New Mills.

Northampton.—The Town Council has passed the following plans:—Twelve houses, Yelvertoft-road, for Mr. G. F. Sharman; additions to warehouse, Lady's-lane, for Mr. T. Turner; six houses, Albany-road, for Mr. W. C. Throssell; three houses, Park-avenue, for Mr. A. P. Hawtin; four houses, Manfield-road, for Messrs. E. & F. Gibbins; additions to Council school, St. James's-road, for the Education Committee; additions to premises, corner of Kettering-road and Exeter-road, for the Co-operative Society, Ltd.; additions to factory, Henry-street, for Mr. H. Martin.

Norton Canes.—School; Mr. Hutchings, County Offices, Stafford.

Nuneaton.—Additions to Abbey Mills; Messrs. Hall & Phillips, architects, Nuneaton.

Oxford.—Education offices; County Architect, New-road, Oxford.

Phillipstown.—School; Mr. J. Bain, architect, County Hall, Newport, Mon.

Rosyth.—School (10,000*l.*); Mr. A. Robertson, architect, High-street, Inverkeithing.

Saltcoats.—Skating-rink (2,500*l.*); Mr. H. Thomson, architect, 60, Hamilton-street, Saltcoats.

Sheffield.—The Town Council has passed the following plans:—Eight houses, Manor-lane and Stock-road, for Mr. E. Martin; four houses, Edgemount-road, for Mr. W. A. Wright; additions to Norfolk Arms public-house, Bungay street and lane, for Messrs. T. Rawson & Co., Ltd.; four houses, Maxwell-street, for Mr. W. Brunton; additions, premises, Woodfold, for the Pitsmoor Laundry Company, Ltd.; eight houses, Balfour-road, for Mr. F. H. Mellor; alterations, premises, Montgomery, Terrace-road, for the Royal Infirmary Board; additions and alterations, Ecclesall-road, for the Old Albion Brewery, Ltd.; additions and alterations, George-street Tavern, Gilpin-street and Cross Gilpin-street, for Messrs. T. Berry & Co., Ltd.; ten houses, Buckenham-street, Ditchingham-street, and Earsham-street, for Mr. G. E. Phillips; additions and alterations, public-house, corner Montgomery-terrace, and Penistone-roads, for Messrs. J. L. Cockayne & Sons; petrol store, John-street, for Messrs. J. B. Wheen & Sons; additions, premises, Broughton-lane, for the Brightside and Carbrook Co-operative Society; nine houses, Dovedale-road, for Mr. J. S. Teanby; skating-rink, Bramall-lane and Shoreham-street, for the Sheffield and Provincial Roller Skating Rink Company, Ltd.; four houses, Balfour-road, for Mr. S. G. Bailey; four houses, Coupe-road, for Messrs. Flowerday & Sons; three houses, Woodgrove-road, for Mr. Tom Hawley; sale shop, Dixon-lane, Firth-park, for Mr. J. H. Smith; additions and alterations, premises, Earsham-street, for Messrs. Rider, Wilson, & Co.

Splott (Cardiff).—New R.C. church; Parish Priest.

Digitized by Google

Trentham.—Vicarage; Mr. J. T. Brealey, architect, Stoke-on-Trent.

Wallsend.—Hospital; Mr. J. T. Davidson, architect, Station-road, Wallsend.

Warrington.—The Town Council has passed the following plans:—Two houses and three lock-up shops, Admiral-street and Parr-street, for Mr. Alderman Bolton; alterations to tannery, Mersey-street, for the Vernon-street Tanning Company, Ltd.; sixteen houses, Padgate-lane, for Mr. D. Cooper; 131 houses off Gorsey-lane and Padgate-lane, for Mr. P. Lawton; six houses, Gorsey-lane, for Mr. William Cooper. Extensions of the baths and additional lavatory accommodation at the Town Hall are to be provided; Mr. T. Langden, Borough Surveyor.

Wigan.—It is proposed to provide additional accommodation at the Central Library; Mr. Wm. Bolton, Borough Surveyor. The Town Council has passed the following plans:—Eight houses, Wall-street, for Mr. W. Darbyshire; four shops, Chapel-lane and Darlington-street, for Mr. Sydney Charles Ellison; rebuilding two houses with shops, Wigan-lane, for the executors of the late Mr. Thomas Halton; ten houses, Knowles-street, for Mr. John Knowles; extension of Spencer-road, for Mr. Roger Leigh; four houses, Scot-lane, for Mr. William Hilton.

Worthing.—Skating-rink; Mr. A. Crouch, architect, Worthing.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Retirement of the Architect.—The General Purposes Committee reported that Mr. T. J. Bailey, the Architect (Education), would retire from the Council's service on December 31, and recommended that he should have exceptional treatment with regard to his retiring allowance. The Committee placed on record its fullest sense of the very valuable services rendered by Mr. Bailey. The question of the retiring allowance will be brought forward later.

Mr. Key paid a warm compliment to the work of the retiring architect. London schools had, he said, greatly benefited during Mr. Bailey's office, and his improvements had raised the standard of architecture, not only in England, but all over the world. In parting with him the Council was parting with the first architect to make a professional study of that particular branch of architecture. He was sure the Council wished Mr. Bailey many years of retired life, and heartily appreciated his valuable services to London.

Mr. Taylor and the Rev. Stewart Headlam associated themselves with Mr. Key's sentiments.

New School at Streatham.—It was agreed to give the necessary notice of intention to erect a school for 1,000 elementary school children at Streatham.

New School at Tottenham.—The local authority notified its intention of building an elementary school for 1,200 in Lordship-lane.

Moreland-street, Finsbury. — Preliminary plans were passed for the structural improvement of this school, which was erected in 1877.

The Frogmore, Wandsworth.—Revised plans passed for adaptation of premises as special school for 120 defective children, at estimated cost of 565*l.*

Camden School of Art.—Temporary iron building to be provided at cost of 425*l.*

Cleaning School Interiors. — Accepted tenders:—

Galleywall-road, Bermondsey.—J. Scott Fenn	£297 0
Saunders-road, Hammersmith.—W. R. & A. Hide	273 0
Brockley-road, Lewisham.—J. Scott Fenn	168 18

Heating.—For providing and fixing hot-water apparatus at "The Reay," Brixton, the tender of L. Norden, 269*l.*, recommended.

Contracts and Preference Labour.—Pending settlement of the general question as to preference of London men, it was agreed to recommend the Council to insert a clause in all forms of tender and contracts in connexion with educational buildings to the effect that the contractor shall, in taking on workmen, whether skilled or unskilled, for the contract, give preference to men *bonâ fide* resident in London.

London Building Act.—The Buildings Sub-committee reported:—"The Committee, on October 27, 1909, instructed the solicitor to take all necessary steps to protect the Council's interests in regard to the summons issued by the District Surveyor against Messrs. Galbraith Brothers, the contractors for the erection of a school for mentally and physically defective children on the "John Ruskin" site (Newington, W.) in respect of the payment of fees under the London Building Act, 1894. The case was heard on November 9 and 16, 1909, and the magistrate, Mr. Hopkins, delivered a written judgment on November 30, 1909, holding that the building in question was one coming within the exemption contained in sect. 201 (5) of the London Building Act, 1894, it being a building occupied by the Council for a public purpose. In the course of the judgment the magistrate stated that it appeared to him that if the building came within such exemption, as he considered it did, there did not appear much left for a District Surveyor to do in regard to supervision; but it was decided in the case of Willis *v.* the Council that the District Surveyor was entitled to notice, and he considered that the notice carried with it a fee, and as such fee was a statutory one, he had no power to divide it up. The magistrate therefore made an order for the amount claimed, and awarded the District Surveyor 20 guineas costs. We are communicating with the Building Act Committee with reference to the questions raised by the judgment, and will report later in regard thereto."

"*Maryon Park*," *Woolwich.*—Tender of L. Nordon, 188*l.*, accepted for heating works.

Albion-street, Rotherhithe.—Teachers' room to be provided, at estimated cost of 160*l.*

Clerk of Works for Repairs.—Mr. J. H. Keeble appointed permanent clerk of works for repairs, at 200*l.* a year.

Three New Schools.—Consequent upon the scheme for the reduction of the sizes of classes, additional accommodation is needed in various parts of London, and it was decided that a new school for 850 in Kennington, and one for 600 in Shepherd's Bush, and another for 800 in Hammersmith should be erected.

Obituary.

MR. GARLING.

The death, on December 4, at his residence, No. 25, Clifton-crescent, Folkestone, is announced of Mr. Henry Bayly Garling, in his 88th year. Mr. Garling, who was an Institute Silver Medallist (Essays), 1848, was elected an Associate of the Royal Institute of British Architects in 1843, and a Fellow in 1857. As a student at the Royal Academy he gained in 1842 the Silver Medal for measured drawings, and subsequently the Gold Medal for architectural design. In September, 1856, instructions were issued to 1,628 architects at home and abroad who had asked for them or had accepted invitations to compete for new Government offices on the Downing, Charles, and Great George streets site. Nearly 2,000 drawings and models, sent in by 188 British and thirty foreign architects, were exhibited in Westminster Hall in May, 1857. On that occasion Mr. Garling won the first premium of 800*l.* with his designs, in the Italian style, for the War Office—illustrated in the *Builder* of August 1 of that year; in our volume for 1857 we also illustrated his unpremiated designs submitted, in the same competition, for the Foreign Office, with a residence for the Secretary of State. On June 20, 1885, we published a perspective drawing, which had been made especially for the *Builder*, of his designs submitted in competition for the contemplated Admiralty and War Offices on the Whitehall and St. James's Park site, as they would have appeared on the park side. Mr. Garling afterwards prepared designs for a new War Office upon the Whitehall, east side of the street, site, which he had adapted in accordance with the lines and plans arranged by the Office of Works; those later designs were illustrated in our number of September 9, 1899. In 1866 Mr. Garling was chosen one of the twelve architects to compete for the Law Courts, for which he produced a very fine design marked by great dignity and breadth of treatment. Mr. Garling was one of the last links with the older school of English architects of a past generation, who thought less of the picturesque element in design than it is usual to think now, and studied rather dignity and symmetry in architectural composition. Personally he will be remembered by those who knew him as a man of striking presence and a dignified courtesy of manner which seemed exactly in keeping with the spirit of his architecture. He was in every way a worthy representative of the architectural and professional standards of his day and generation.

LONDONDERRY GUILDHALL.—At a special meeting of Londonderry Corporation held on the 30th ult., Mr. H. A. Robinson, City Architect, submitted the plans prepared by him for the rebuilding of the Guildhall. It was stated that the probable cost of making good the damage caused by the fire of April, 1908, and carrying out some improvements would come to about 17,300*l.* On the motion of Alderman Campbell, seconded by Alderman Hamilton, the plans were approved.

General Building News.

SKIPTON PARISH CHURCH.

The completion has now been reached of a scheme of restoration at this church. A faculty was granted in September of last year to remove the north, south, and west galleries, to demolish the clergy and choir vestries, to construct a transept opening out of the north aisle, and to build new vestries, etc. The work necessitated the disturbing of certain headstones and the removal of certain remains, and the removal of the galleries has necessitated many repairs to the masonry of the pillars and arches. The seating accommodation has been rearranged and additional seats provided in the north and south aisles. During the progress of the work two openings were discovered in the north aisle wall. They are thought to have been used as dole windows—one for bread and the other, it is presumed, for beer. Under the choir vestry is located the new heating chamber. The whole of the church has been relighted, clusters of lights in the nave being fixed round the capitals of the piers. The additions to the interior include a new two-light stained-glass window in the passages leading from the church to the new vestries. This work has been carried out by Messrs. Shrigley & Hunt, of Lancaster. The architects for the restoration scheme were Messrs. Austin & Paley, of Lancaster. The work has cost about 3,000*l.*

NEW CHURCH, BARNT GREEN, WORCESTER.

The foundation-stone was recently laid of a new church at Barnt Green. The building, the architect of which is Mr. Arthur Dixon, of Birmingham, will be of red bricks, with stone facings. It is not proposed to carry out the whole scheme completely at first, and accommodation will only be provided at once for from 100 to 150 people. The cost of the work amounts to some 1,250*l.*

ST. PETER'S CHURCH, BIRKDALE.

This church was reopened recently after considerable alterations, architectural and decorative. The chancel arch has been taken down and rebuilt of larger dimensions. The old tile flooring has been replaced with a design in black and white marble, a Maltese cross occupying the central space. New steps in Skyros marble lead into the chancel, and Swedish green marble is used for the communion step in place of the old stone ones, the sanctuary floor and altar steps being previously finished in the same way. A low wall of marble has been erected to the chancel, with square panels of Greek Skyros, with a coping of Swedish green marble, the whole surmounted by a fine wrought-iron railing or screen, having panels of passion-flower leaves and tendrils, alternating with similar panels of vine leaves and tendrils. The new pulpit is of marble and alabaster at the base, with a wrought-iron upper portion. New organ screens to chancel and nave sides have been erected in Austrian oak, traceried, cusped, and carved. Screens and canopies of the same character have been placed behind the choir stalls. The side spaces of the east wall are filled with painted figures of angels, and a choir of angels, singing and praising God (as described in the inscription from the communion service), is represented in the panels of the lower portion of the roof. The work has been carried out from the designs and under the superintendence of the architect, Mr. Francis P. Halsall, of Southport. In the painted decorations Mr. Pippet, of Solihull, collaborated with the architect. The structural alterations were carried out by Messrs. Fairbridge & Hatch, Birkdale; the marble work by Messrs. Patteson, Manchester; decoration of chancel, organ screens, and choir canopies by Messrs. John Hardman & Co., Birmingham; the ironwork, bronze, and enamelling by Messrs. Hardman, Powell & Co., Birmingham; decoration of nave, etc., by Messrs. Lowe, Birkdale; stonework by Messrs. Taylor & Calland, Birkdale; and alterations to organ by Messrs. Whiteley & Sons, Chester.

EXTENSION OF BIRTLEY CATHOLIC CHURCH.

At Birtley, on the 30th ult., a new aisle and organ-chamber, which have just been added to the Roman Catholic Church of St. Joseph, were opened and consecrated. Seatings have now been provided for an additional 250 persons. The contractors for the extensions were Messrs. Burnett & Sons, Birtley, and the architects Messrs. Boyd & Groves, Newcastle.

NEW CHURCH, WAVERTREE, LIVERPOOL.

The consecration has taken place of a new church, dedicated to St. Thomas, at Wavertree. The building consists of nave, north, south, and west aisles, chancel, clergy and choir vestries, organ-chamber, and wardens' room. It is heated by means of a low-pressure hot-water system, and ventilated by inlets in

Digitized by Google

the walls and extract ventilators in the roof. The artificial lighting is by electricity. The exterior of the building is of thin wire cut-faced St. Helens brick, with white joints, and dressings of Woolton stone and red facing bricks. The roofs are covered with green slates, and the spire is finished with oak shingles. Internally the walls are faced with thin red facing bricks, with white joints. The nave columns, the pulpit, and all the internal stone dressing are of white Bath stone. The windows are glazed with lead light of cathedral-tinted glass. The church gives seating accommodation for 703 persons. The cost of the completed building, including all pews, choir stall, pulpit, electric light fittings, heating apparatus, paved paths, fees, etc., is 6,005*l.* The building contractors for the work were Messrs. Morrison & Sons, of Wavertree, and Mr. R. Wynn Owen, of Liverpool, is the architect.

WESLEYAN CHURCH, YEALMPTON, DEVON.

The Wesleyans of Yealmpton have opened a new church and school premises. Mr. F. A. Wiblin was the architect, and the contract price was 1,200*l.*

HOLY TRINITY PARISH CHURCH, ST. ANDREWS.

The scheme of restoration which has been in progress at this church—the church in which John Knox delivered his first sermon—has been completed. The work has involved an expenditure of about 21,000*l.*, and has included the erection of a new chapel and an organ-chamber. Mr. P. Macgregor Chalmers, Glasgow, was the architect, and the following were the contractors:—Messrs. J. H. White & Sons, masons; Messrs. Andrew Thom & Sons, joiners; Mr. Thomas Black, slater; Mr. J. M. Morris, plumber; Mr. S. Adams, jun., glazier; Messrs. A. M'Kay & Sons, wood-carvers; Messrs. Galbraith & Winton, marble workers; Messrs. James Combe & Son, heating engineers; Mr. W. R. Underhill, electrician; Messrs. Willis & Son, organ builders; Mr. James Young, sculptor. Mr. William Scott acted as clerk of works.

MISSION CHURCH, GRASSMOOR, NEAR CHESTERFIELD.

A mission church is being erected at Grassmoor on a site on the main road leading from Chesterfield to Clay Cross. The design is by Mr. Tom S. Wilcockson, of Chesterfield, and the work will cost a little over 1,000*l.* Messrs. Brown & Marriott, of Hasland, are the builders.

COMMERCIAL TRAVELLERS' SCHOOLS, PINNER.

Mr. H. O. Cresswell has prepared plans and designs for alterations and additions at the Commercial Travellers' Schools. In our issue of April 24 last we published illustrations of Mr. Cresswell's designs, slightly modified in the building, of the new wing of the girls' school, with a convalescent department on the upper floor, and detached sanitary blocks, constructed of red brick, with dressings of Doulting stone from the Chelynch beds, by Messrs. Grover & Sons. The schools at Pinner were originally built after designs by the late T. E. Knightley.

PROPOSED NEW BUILDINGS FOR ST. JOHN'S PARISH, CARDIFF.

In the year-book of St. John's Parish Church, Cardiff, reference is made to the present position with regard to the Queen-street schools. The site on which the St. John's Schools stand in Queen-street is practically sold, and the trustees have provisionally obtained a new site from Lord Bute in the new Grey Friar's-road, immediately at the back of the present schools. Mr. Edwin Corbett has prepared plans, which have been approved of by the Board of Education.

EXTENSION OF ACADEMY BUILDINGS, FORFAR.

The Burgh School Board of Forfar are enlarging the premises of the Forfar Academy in Academy-street. The total length of the addition will be 106 ft. In the basement accommodation will be provided for the heating apparatus, and for the storage of bicycles used by the country scholars, and on the first floor there will be situated the cookery and laundry classroom, with cloakroom, and a gymnasium measuring 52 ft. by 30 ft. There will also be provided a music-room, a room for the lady instructors, and dressing-rooms for the boys and girls. At the rear of the ground floor will be erected a large workshop, adjacent to which will be an engine-room, a teachers' room, and a wood store; and an entrance to this block will be provided for the Academy scholars. The second floor will be occupied by three large art classrooms, a teachers' room, a music-room, and a dining hall. The vestibules and lobbies are to be laid with tiles, and the wood finishings will be of Australian pine. Shorland's ventilation will be introduced, and the heating will be the low-pressure hot-water system, with boiler, pipes, and radiators. A separate system is to be introduced for supplying hot water to the laundry. The total cost of the building will be close on 5,000*l.* The architects are Messrs. Gavin & Soutar, Forfar, and the various contractors are:—Mason work, Mr. James Baird, 2,097*l.*; joiner work, Mr. David Stewart, 1,377*l.*; plumber work, Messrs. Alexander M'Laren & Sons, 422*l.* 15s.; slater work, Mr. James Kerr, 135*l.*; plaster work, Mr. D. Masterton, 126*l.*

THE RECONSTRUCTION OF THE ROYAL INSTITUTION, EDINBURGH.

The Royal Institution at the Princes-street end of the Mound is in course of reconstruction, under terms of the National Gallery (Scotland) Bill, to fit it to be the future home of the Royal Scottish Academy. The warrant obtained from the Dean of Guild Court for the reconstruction made it clear that it was only the interior of Playfair's beautiful Grecian building that was to be dealt with. The walls, it was understood, were to remain intact, and were certified as sufficient to carry the new roof. Considerable anxiety has been manifested in certain quarters during the past week at the unforeseen turn which the operations of the contractor have taken at the north-east corner of the edifice. First of all, a huge crane was erected, then the guardian Sphinxes at the wall-head were removed; subsequently it was seen that the wall itself was in process of demolition. On inquiry at the office of the Board of Works we are informed that it has been reluctantly determined that the whole of the corner must come down and be rebuilt, as the present foundation is very defective. The Royal Institution is built on piles. This was rendered necessary by the fact that the site, like the rest of the Mound, was simply made up with earth. Signs of subsidence have been making themselves manifest in the north-east corner for several years. Lintels were going off the straight, and mantelpieces inside becoming cracked. On stripping the walls several of the stones built into them were seen to be split; the foundation piles were found in a decaying state. The defects might have been patched up, but it was thought, as the walls were bare, that the opportunity should be taken to put the corner into a sound and permanent state. The stones, as they are taken down, will be carefully numbered, and the Architect of the Board of Works may be trusted to see that the reconstruction of the corner will be done with the greatest care and entirely after the original design.—*The Scotsman.*

EXTENSIONS AT MENSTON ASYLUM, YORKSHIRE.

In the year 1906 the total number of residents at the asylum daily was 1,606, in 1907 it had increased to 1,640, and last year it reached 1,658. Plans were therefore prepared by the West Riding Architect for a building on the north-west corner of the present structure to accommodate 120 patients, and this erection has been recently opened. The building is an almost complete asylum in itself with the exception of the administration, and unlike all the other blocks it is detached from the main building. There are two large dayrooms and two dormitories, along with side rooms for the accommodation of single patients, attendants' rooms, bathrooms, lavatories, and the usual offices. The cost has worked out at less than 100*l.* per bed. Mr. A. Crowther was the clerk of works. The original estimate was 12,000*l.*, but the actual cost was under 11,000*l.*, including furnishing.

NEW BUILDINGS IN LONDON.

Factory at West Ham, for Messrs. Pinchin, Johnson, & Co., Ltd., paint and varnish manufacturers, Minerva House, Bevis Marks, E.C. Rebuilding No. 2, Seymour-place, W.; Messrs. Romaine-Walker & Besant, architects, New Bond-street, W. Roman Catholic chapel, Finchley-road, Golder's Green; Rev. W. A. Bendon.

VILLAGE CLUB, LAWFORD, ESSEX.

Club premises have been built in this village. The building comprises a hall, reading-room, chess-room, dispensary, and a bathroom. Under the same roof also are two cottages containing living-rooms, kitchen, scullery, pantry, and three bedrooms. The building is heated by Bowes's patent well fires, and is lighted by air gas by the Non-Explosive Air Gas Company, through their agents, Messrs. Mann, Egerton, & Co., electrical engineers, Ipswich. The builders are Messrs. E. Catchpole & Co., Ltd., of Ipswich, to the designs of Mr. Raymond C. Wrinch, architect, of Ipswich and Felixstowe.

PROPOSED ABATTOIR, ETC., BELFAST.

An inquiry was recently held by Mr. P. C. Cowan, M.Inst.C.E., with regard to the application of the Belfast Corporation for a loan of 30,000*l.* for the purpose of erecting an abattoir, and also with regard to the Corporation's application for loans of (1) 2,930*l.* and (2) 2,750*l.* for the purpose of (1) completing the quay wall at the refuse destructor and (2) providing a disinfecting-station. An inquiry was held into the subject of the abattoir in July, 1899, and 30,000*l.* was sanctioned. The Corporation submitted different plans to those on which the loan of 30,000*l.* was sanctioned, and the Board deemed it expedient before expressing their approval to such plans to hold a further local inquiry in respect of the proposed scheme. Mr. H. E. Cutler, City Surveyor, produced the plans for the erection of the quay wall and the disinfecting-station, and later was examined as to the essential differences between the old and new plans for the abattoir scheme. The following letter was handed to the Inspector (Mr. Cowan) at the close of the inquiry:—"Dear Sir,—The attention of the Council of the Ulster Society of Architects has been drawn to the report in the local Press of the proceedings of the Local Government Board inquiry at present being held by you with reference to, *inter alia*, a loan of 30,000*l.* for the erection of a new public abattoir for the Corporation of Belfast. I have been instructed to inform you that the Ulster Society of Architects has already protested, and will continue to protest, against important building works, of which the proposed abattoir is one, being entrusted to the City Surveyor to design and execute. The time of the Surveyor must of necessity be fully occupied by the proper discharge of his ordinary duties as Surveyor, and, assuming that he has absolute competence to deal with a subject of such a complicated and technical nature, which, in the opinion of my Council, can only be done by a practising architect of large and matured experience, the carrying out of such work would require the constant and unremitting supervision of such a highly-qualified architect, and it can only receive from the City Surveyor a most inadequate and perfunctory attention. . . . It should not be too late to have the matter further investigated, when it will no doubt be found advisable in the public interest to secure by some means the services of a competent practising architect.—I am, your obedient servant, N. FITZSIMONS, Hon. Secretary."

READING-ROOM, REDNAL AND RUBERY, WORCESTER.

A reading-room and lending library have been erected to serve these villages. The premises were designed by Mr. B. Bower, architect, and erected by Mr. A. R. Waldron, builder.

NEW THEATRE PLANS, BARRY.

At the Barry Public Works Committee, on the 30th ult., plans were submitted on behalf of Mr. Arthur Carlton, Worcester, the owner of the Hippodrome, which was burnt down recently, for a new permanent theatre. The plans were passed. The building will be of brick and stone, and provide accommodation for 1,500 people. It will be a two-tier building, with a row of shops, nine exits, and a roof garden. Mr. W. E. Knapman is the architect, and Messrs. Nicholls & Reynolds, Ltd., Westminster, S.W., are the contractors.

Sanitary and Engineering News.

WATER SUPPLY, CARDIFF.

The proposed acquisition of further land in connexion with the construction of the new reservoir in the Brecknock Beacons was discussed by the Cardiff Waterworks Committee a few days ago. Alderman F. J. Bevan asked if this land was contemplated in the original estimate of the cost of the reservoir, viz., 272,000*l.* Mr. Priestley (Waterworks Engineer) replied that it was not, and stated that the additional land was wanted because Parliament had given them an increase of 5 ft. in the depth of the reservoir. He estimated the cost of the deeper reservoir was 290,000*l.*, which did not include the cost of the land now required. This land, however, would be let at a remunerative rental, so that in reality the total cost of the new and deeper reservoir would not exceed 290,000*l.* The new reservoir will have a water area of 144 acres. The capacity of the new reservoir will be over 1,200,000,000 gallons.

ROSYTH NAVAL BASE.

Messrs. Easton Gibb & Son, Ltd., have, according to the *Glasgow Herald*, given the contract for the supply of granite to be used in connexion with the construction of the dockyard at Rosyth to a Norwegian firm. The contractors submitted alternative offers to the Admiralty for British and foreign granite, and it would have been a matter of indifference to them if the order had gone to a British firm, so long as the Government were prepared to pay

Digitized by Google

the difference in price between the home and the foreign article. For the purpose of unloading the granite and other materials the contractors are hastening on the construction of a jetty at Rosyth Castle Island. This jetty has now reached a point where piling and staging have been resorted to in place of the formation of an earthen bank. The principal part of the operations at present, as it has been for some time, is the construction of the earthen banks which are to form the eastern cofferdam, where the station for submarines is to be formed. It is expected that the enclosure will be completed about February. In the meantime a staging has been erected between the extremities with the object of forming a weir to drain off the water. A slip is being built near Limpet Ness for handlin the steel shoes for the monoliths, and further staging is being erected at sea for the sinking of those masses of concrete into the sea bottom. Four 300-h.p. National gas-engines are to be used for driving the dynamos, and it is intended to abolish all other means of power after the installation is completed. A large weighbridge has been constructed on the Admiralty line near Rosyth Castle. The erection of this machine has caused an enormous amount of excavation of whin rock, a large squad of men having been engaged for six weeks. The Symon's stone crushers, which are the first of the kind to be used in a contract in this country, will be fitted up immediately, and at the present time the engineers are placing in position at the Howe Cove quarry a large air-compressor for the purpose of driving drills to prove the depth of the rock. The men employed at the present time number about 650, over 100 of whom are constantly engaged in the quarry. It is stated that at the beginning of the year that number will be greatly augmented.

ROYAL SANITARY INSTITUTE.

At an examination in sanitary science as applied to buildings and public works, held at Manchester on November 26 and 27, 1909, three candidates presented themselves, and the following two candidates were granted certificates:—E. W. Clarkson (Masham); H. W. Dawson (Bolton).

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. Moscrop-Young & Glanfield, architects, will remove their offices, on December 13, from 12, Buckingham-street, Strand, to 20, Brook-street, W.—Messrs. Blake & Scott, engineers, have been appointed the London representatives of Messrs. Wm. Arnott & Co., of Coatbridge, for their bridge and steel construction work.

PARISH CHURCH, HAYES, MIDDLESEX.

At a sitting of the Consistory Court of London on November 16 Dr. Tristram, Chancellor of the Diocese, agreed to issue a faculty to authorise the erection of a painted reredos in the chancel, as part of a memorial to the late rector, the Rev. John Godding. The church, dedicated to St. Mary, has a large chancel of the early XIIIth century period, with some arcaded work on the north wall, three sedilia in the south wall, and three of the six original lancet windows; the nave, the upper stages of the western tower, and the porch are of the XVth century; there are a XIIth century font and an old timber lych-gate. Pieces of Perpendicular tracery and lintel beams which, it is believed, are portions of the rood screen and of the screen of the chapel at the east end of the north aisle, have been put together to form a lobby in the tower. The church was restored in 1873-4 by Scott, who added a vestry.

THE OLD PARISH CHURCH, BISHOP'S STOKE, HANTS.

Sitting in the Court of Arches at the Church House on November 17, Sir Lewis T. Dibdin, D.C.L., Dean of the Arches, dismissed, with costs, an appeal from a judgment of the Chancellor of the Winchester Diocese. The judgment of the Consistory Court granted two faculties for the pulling down of the (old) parish church of St. Mary's, the tower excepted, and for the removal of the memorials, bells, and clock to the new parish church, which has been erected from Mr. Warren's designs, and consecrated in the name of St. Mary, Bishop's Stoke, near Winchester. The older edifice, built in 1825, had fallen into disrepair, and the money necessary for its reinstatement and service has not been subscribed. After hearing arguments by Mr. Woodfin, counsel for the appellant, a parishioner, the Dean of the Arches said that the case would be remitted to the Consistory Court to draw up the faculties, with leave to appeal, within a month, to the Privy Council.

BISHOPS' COLLEGE, CHESHUNT.

Some alterations and additions are about to be made at the College, at an outlay of about 3,500*l.*, from plans and designs by Mr. A. Blomfield Jackson. The buildings were recently opened as a theological training college for the dioceses of London, Southwark, and St. Albans, upon the removal of Cheshunt College to Cambridge. The College was originally founded at Talgarth, South Wales, by Selina, Countess of Huntingdon, in 1768, for Congregationalists. After her death, in 1791, the trustees removed the College to Cheshunt. A chapel and additional residential quarters were added to the buildings at Cheshunt in 1806-22; the trustees disposed of the buildings two or three years ago.

MEMORIAL TO SIR BENJAMIN BAKER.

The dedication took place on the 3rd inst. of the window in memory of the late Sir Benjamin Baker, which, by permission of the Dean and Chapter, has been placed in the nave of Westminster Abbey. The window has been designed by Mr. J. N. Comper. It forms part of a scheme for nine windows in the north aisle of the nave, a feature of which will be standing figures, a king and an abbot, in each light. At the head of the window is a quatrefoil containing a representation of St. George and the Dragon surmounted by a canopy, with the arms of St. Edward and the Abbey on either side. The lights contain two large figures under canopies. In the left-hand light is the figure of King Edward III., in the right-hand light is that of Abbot Simon Langham. Both lights are framed with borders, having niches holding twelve statuettes and as many shields. Beneath the figures are tablets held by angels, containing the words:—(1) "In memory of Sir Benjamin Baker, Civil Engineer"; (2) "Forth Bridge, Assouan Dam. B. 1840. D. 1907."

PROPOSED STREET IMPROVEMENTS, YORK.

Mr. H. R. Hooper, M.Inst.C.E., Inspector to the Local Government Board, recently held an inquiry into the application of the York City Council for sanction to borrow 25,250*l.* for the construction of a new street from Pavement to Piccadilly, York. The City Engineer (Mr. F. W. Spurr), in explaining the details of the scheme, said that the scheme would provide more direct access to the centre of the city from the Hull-road and Fulford-road districts. It would also relieve the congested conditions of traffic that existed in Fossgate and Walmgate.

ST. MARYLEBONE CHARITY SCHOOL (OLD BUILDING).

The Board of Managers have just disposed of the site and buildings, almost opposite the parish church, Marylebone-road, of the Charity School for Girls, which has migrated to Ealing. The site covers an area of 21,270 ft. super., with frontages of 186 ft. and 111 ft. to the main road and Devonshire-place North. The school was established in 1750 for the daughters of poor parishioners, and removed in 1838 to the present buildings, which were erected after designs by P. Hardwick. The property was withdrawn from sale at auction two years ago after a bid of 29,000*l.* It has been acquired by, we learn, the Royal Academy of Music.

A GARDEN CITY, PARK LANGLEY.

Park Langley, near Beckenham, Kent, has been purchased by Messrs. H. & G. Taylor, with a view to its conversion into a residential park. The estate of 700 acres, well timbered and watered, will be plotted out for the erection of houses upon sites of about 11,000 sq. ft., and the designs of the houses will be greatly varied in style and character, care being taken to make the backs as attractive as the fronts. A rotunda or circus, with shops, is to be erected at the end of the main central avenue.

LABOUR EXCHANGES.

The provision of new or adapted buildings under the Act of last session is being proceeded with by the Office of Works in several of the large provincial towns. Premises have been acquired in Bristol, Halifax, Sheffield, Leeds, Dudley, Liverpool, Swansea, and Greenock (portion of the Custom House), which will be altered into suitable offices; and new buildings are about to be erected at Leicester. For purposes of the Act the United Kingdom is subdivided into ten divisions, each with a central and district exchanges, to a number of about 240 in all, and it is expected that the ten chief divisional exchanges will be established in course of the next three years.

SIR REDVERS BULLER MEMORIAL.

The Memorial Committee have appointed Mr. Bertram McKennal, A.R.A., as the sculptor of a recumbent figure of the late General Sir Redvers Buller, which will be placed in the north transept of Winchester Cathedral, where the Dean and Chapter have granted a site. The figure will be executed in bronze; the tomb will be made of green and black marble.

CLOTHWORKERS' COMPANY'S SCHOOL, SUTTON VALENCE.

The Governors of the United Westminster Schools have framed a scheme for the removal of the boarding-school department of their Emmanuel Schools at Wandsworth. The Clothworkers' Company have offered to transfer to the Governors their boarding school at Sutton Valence, near Maidstone, and to contribute 5,000*l.* towards the rebuilding of the premises there. The Company's Grammar School at Sutton Valence was founded, 1668, by William Lambe, who placed it under their control.

REINFORCED CONCRETE CONSTRUCTION.

To the members of the Edinburgh Association of Science and Arts Mr. F. A. Macdonald, C.E., gave an address on "Reinforced Concrete Construction" in the hall of the Scottish National Portrait Gallery on the 29th ult. In the course of his remarks he said that recognising the importance of some standardisation of formulæ, both as a safeguard and as a guide, the Royal Institute of British Architects had issued a set of regulations which were very valuable, and gave data which could be intelligently worked on. He hoped that still further standardisation both of formulæ and notation for the calculation of reinforced concrete structures would be eventually drawn up, and their observance recognised by all designers.

NEW PROMENADE AT MARGATE.

It is stated that the Margate Corporation have decided to expend the sum of 11,000*l.* in constructing a new sea-wall and promenade from Fort Point to the Clifton Baths, a distance of 1,050 ft. The promenade will be about 20 ft. above O.D., or 11 ft. above high-water mark, the height of the wall being 17 ft. above the level of the foreshore. The wall will be constructed of bull-nosed concrete blocks 4 ft. long, 2 ft. deep, and 2 ft. 9 in. thick. The top or coping blocks will be 2 ft. 9 in. deep, 4 ft. long, and 3 ft. deep. There will be eight courses of these blocks, backed up by concrete laid *in situ*, and the wall will have a thickness of about 10 ft. at the base and about 3 ft. at the top. It is proposed to make the promenade about 50 ft. or 60 ft. in width. The work is being carried out by direct labour under the supervision of the Borough Engineer, Mr. Ernest A. Borg.

HOPPER FRAMES FOR SCHOOL WINDOWS.

We have received from the Taylor Manufacturing Company (Wolverhampton) a description and illustration of their patent folding hopper frames for insertion in sliding sashes in school windows. They are very simple in action: a small steel spring on each cheek engages when closed with a stud on the centre frame, thus locking the frames together. For opening, a slight pressure releases the spring.

BENEFACTIONS, FOR LOCAL IMPROVEMENTS, TO BERMONDSEY.

An anonymous donor has signified his intention to bestow several gifts upon the Borough of Bermondsey, and to expend large sums of money upon schemes of general improvement in the locality. The initial gift will consist of the purchase of Butler's Burial-ground, latterly used as a builder's yard, in Fashion-street, Horselydown, together with some adjoining property, which will be laid out as a recreation-ground and equipped with a gymnasium. Succeeding projects comprise the erection of a hostel for factory girls, the clearance of some insanitary areas, and the provision of parks and open spaces for the enjoyment and recreation of the inhabitants in what is one of the poorest districts of South London.

PHIL MAY MEMORIAL, LEEDS.

A movement is on foot in Leeds to provide a suitable memorial to the late Phil May, who was a native of that city. One of the objects in view is the erection of a memorial tablet on the house, No. 66, Wallace-street, where Phil May was born, and a plaster cast has been prepared by Mr. Caldwell Spruce of a tablet to be executed in grey granite, with a medallion portrait affixed above the inscription. The other objects aimed at are the acquisition for the Leeds Art Gallery of a selection of original drawings by Phil May, and the foundation of a Phil May scholarship at the Leeds School of Art.

MUNICIPAL AND HEALTH EXHIBITION.

A meeting of the Advisory Council of the Municipal and Health Exhibition, 1910, was held last week at the Holborn Restaurant, the Chairman of the Council (Professor Henry Adams, M.Inst.C.E.) presiding. It was decided to invite the President of the Local Government Board to consent to become President of the exhibition; to invite the Lord Mayor of London, the lord mayors of provincial towns, mayors, chairmen of urban

Digitized by Google

district councils, county councils, port sanitary authorities, boards of guardians, the Port of London Sanitary Authority, the Thames Conservancy, and the presidents of professional and technical societies to become patrons; and to send a letter to all local authorities inviting their co-operation and asking them to send delegates, and that technical schools should be asked to submit specimens of the work carried out by their pupils. Conferences and lectures are to be arranged for, and the metropolitan boroughs are to be asked to grant facilities for delegates to visit public works and institutions.

THE PROHIBITION OF WHITE LEAD IN FRANCE.

The Act of July 20, 1909, states that at the expiration of the fifth year which follows the promulgation of this law the use of white lead and of all products containing white lead shall be prohibited in all works of painting whatsoever executed by painters on buildings both externally and internally. M. Viviani, Minister of Works, has advised the divisionary inspectors not to await the completion of the five-year term in order to study the substitutes for such materials, so that the date July 20, 1914, which will mark the definite suppression of the employment of white lead in building construction may not take manufacturers by surprise. He recommends them, therefore, to keep his rescript constantly before the minds of the manufacturers affected. "I consider," adds the Minister, "that the strict enforcement of the decree of July 12, 1902, regulating the use of white lead in the building trade is such as to assist the working of the new Act. You will, in consequence, see that the old Act is enforced more rigidly than ever."

Law Reports.

ARCHITECT'S LIBEL ACTION.

IN the King's Bench Division on the 6th inst. the case of Smith *v.* Dowle was heard before the Lord Chief Justice and a special jury—an action by Mr. Sidney Robert James Smith, an architect, against Mr. W. T. Dowle, a surveyor, for damages for libel.

Mr. Walter Frampton, on behalf of the plaintiff, said that the defendant was not represented, nor was he present in court, and so far as he knew he had left the country and taken with him all his belongings. It appeared that in 1903 and 1904 Messrs. Jennings and Messrs. Doulton, two well-known sanitary engineering firms, successfully tendered for the reconstruction of the drainage in the Elder-road Schools and Brook-street Infirmary in the Lambeth district, and the plaintiff was appointed by the Lambeth Board of Guardians as the architect. Plaintiff was an architect of considerable standing in his profession, and therefore the allegations made by the defendant in respect to the plaintiff's work and conduct was a very serious matter to him. Defendant was in the employ of Messrs. Jennings as a work supervisor, and was dismissed from his employment because of his having committed certain irregularities which had, however, nothing to do with that case. The libel complained of was contained in a letter which the defendant wrote to Mr. A. F. Collins, a member of the Lambeth Board of Guardians four years after the contracts were completed. It ran as follows, having been written from Dover:—

"DEAR SIR,—Knowing you as ex-Chairman of the Lambeth Guardians, and noticing in the *Builder* that the firm of Jennings were the lowest tendering in competition for some sanitary works at Wincott-street casual wards, it occurred to me as a very suspicious circumstance, knowing as I do that for every public work in competition for the last eighteen months they have been highest every time in their tender, and perhaps the same conclusion might occur to you when I have related the circumstances of their last contracts with your Board at Elder-road Schools and Brook-street Infirmary. I do not know if the same architect as you employed then is still on your list, for if so he will go out of his way to do anything for Jennings. At Elder-road and Brook-street the architect and surveyor each took 100*l.* from Jennings, and the clerks of works also shut their eyes and received bribes from the same source. Jennings systematically robbed the Board in the following manner, with the assistance of the architect, surveyors, and clerks of works:—(1) By measuring and charging for materials never supplied or used; (2) by gross overcharges on every item not scheduled; (3) by falsification of their weekly daywork sheets and by irregular procedure in these same sheets being allowed to leave the works before being scrutinised and passed by the proper authority and clerk of the works. I am in a position to know that by these methods they received more than 1,200*l.* at the school works than they were entitled to; also, when the Brook-street works were tendered for Jennings were the only firm invited by the architect to give an estimate for the work and fittings, and the same method of increasing their daywork sheets by the assistance of the clerk of works was maintained throughout. At Elder-road School on a schedule form of contract you will find the daywork allowed by the architect and surveyors amounted to nearly 25 per cent. of the whole of the amount you paid the contractors for the work they carried out for you. This I am sure, from my knowledge of the contract business, is most unusual, and if your architect and staff had done their duty to your Board those charges could have been limited to a very small proportion of the whole."

That letter, said counsel, meant to convey that Mr. Smith had failed to efficiently discharge his duties to the Guardians, and that he had acted dishonourably and unprofessionally and corruptly in his office. As there was no foundation whatever for such allegations Mr. Smith wished for a judgment which would put him right in the eyes of any who had heard of the libel and the charges it contained. Counsel added that the other persons concerned in the letter had instructed their solicitors, but the allegations against them had been withdrawn by the defendant.

Mr. Smith, in the witness-box, said he had been architect for the Tate Gallery, the National Gallery, the Cripplegate Institute, and many other public places. He absolutely denied that there was any truth in the allegations made by the defendant.

His lordship then addressed the jury, remarking that there was nothing worse in the present day than a libel of that sort to injure the character and reputation of a professional man. Defendant had put in no plea of justification, but had apparently left the country, so that there being no doubt as to the falsity of the libels for which there was absolutely no foundation, all the jury had to do was to assess the amount of damages which the plaintiff should receive to recompense him for the pain and trouble he had been put to by its publication.

The jury awarded the plaintiff 100*l.* damages, and his lordship entered judgment for that amount with costs.

ACTION AGAINST BUILDERS AND CONTRACTORS.

IN the King's Bench Division last week the hearing was concluded of the case of Levy *v.* Patman & Fotheringham, Ltd., Liddiard third party, before Mr. Justice Grantham and a special jury.

In this case the plaintiff, a hosier and glover, carrying on business in Glasshouse-street, W., brought the action against the defendants, Messrs. Patman & Fotheringham, builders and contractors, to recover damages for injury done to his premises and stock alleged to have been caused by defendants not taking proper precautions in pulling down the wall of the adjoining premises.

The defence was a denial of the plaintiff's allegations.

Mr. Montague Shearman, K.C., on behalf of the plaintiff, stated that his shop was near the Monico, and Messrs. Patman & Fotheringham had obtained the contract for the building to be erected on the site adjoining, Mr. Liddiard being the housebreaker who did the preliminary demolition. It was when Mr. Liddiard's men were engaged on this work that the damage complained of was done. Apparently, said counsel, no adequate steps had been taken to prevent filth and dust raised in the process of demolition from coming down the chimney into the plaintiff's shop. On June 26, 1908, at any rate, and at the busiest time of the day, a crash was heard, and down came a lot of filth and soot and lime and dust which filled the whole place. Later on there was a second and a third crash, when about a hundredweight of stuff came down the chimney. Naturally much of the plaintiff's stock was rendered unsaleable by being drenched by the filthy stuff, and about 400*l.* worth of damage done.

Evidence having been given in support of the plaintiff's case.

Mr. H. F. Dickens, K.C., on behalf of the defendants, contended that no large amount of goods in parcels could have been damaged. If the claim had been reasonable and for a small amount defendants would have met it, but they were not going to sit down under a grossly exaggerated claim like that which had been presented.

By an agreement made at the conclusion of the case, the third party proceedings were dismissed.

In the result, the jury returned a verdict for the plaintiff for 162*l.*, and judgment was given accordingly.

CLAIM FOR RENT FOR LAND OF HIGHWAY.

IN the Court of Appeal, before the Master of the Rolls and Lords Justices Moulton and Farwell, last week, the hearing was concluded of the case of Foley's Charity Trustees *v.* the Dudley Corporation, upon the defendants' appeal from a judgment of a Divisional Court consisting of Justices Darling and A. T. Lawrence, reversing a decision of Judge Ingham at the Dudley County Court.

In this case the plaintiffs brought the action to recover 4*l.* 18s., representing three years' rent of a small strip of land at Queen's Cross, near Stourbridge, granted by the predecessors of the present trustees to the Turnpike Trustees for inclusion in the main road. The defendants were now sued as the successors of the Turnpike Trustees, and as such they had paid the yearly rent to the trustees from 1872. In 1904, however, they declined to pay the rent any longer, and it was to assert the right of the trustees to that rent that the action was brought. The County Court judge held that the Act of George III., on which the plaintiffs relied, did not empower them to transfer land at a fee-farm rent, nor could he learn that such a custom had ever been usual or common in that part of the county. He therefore entered judgment for the defendants. From this decision the plaintiffs appealed to the Divisional Court, when Mr. Justice Darling and Mr. Justice A. T. Lawrence expressed the opinion that the appeal ought to succeed, the former stating that in his view the Corporation had taken over the liabilities of the Turnpike Trustees and were liable for the rent. He thought the County Court judge was wrong in holding that fee farm grants were unknown in that part of the county. The appeal was accordingly allowed. Hence the present appeal of the defendants.

At the conclusion of the arguments of counsel their lordships dismissed the appeal with costs, holding that the defendants were term tenants of the strip of land in question, and therefore liable for the rent.

Patents.

APPLICATIONS PUBLISHED.*

23,892 of 1908.—William Thompson: Lighting and ventilating agricultural and other buildings.

24,637 of 1908.—Claude Albermarle Bettington: Apparatus for pulverising coal and other materials.

25,275 of 1908.—Manasseh Luney and James Charles Hamilton: Tool-rests for grindstones and abrading machines.

26,416 of 1908.—James Edward Wade: Concrete or stone cement, black in colour, for street pavements and for plastering and other purposes.

3,888 of 1909.—John Thomas Porter: Device for securing the heads of hammers, axes, picks, and like tools to their handles.

4,774 of 1909.—Joseph Sayers: Door bolts and like fastening devices.

4,965 of 1909.—Frank Lorenzo Smith and Thomas Birch Williams: Rotary scraper for facing and dressing the surface of a piece of metal.

5,912 of 1909.—Ketrine Ellen Fawns: Fanlights.

6,095 of 1909.—Firm of J. A. Maffei: Two-cylinder pneumatic hammer.

8,249 of 1909.—Harry Craighill Badder: Construction of doors, panellings, or the like.

9,111 of 1909.—Joseph Arnold: Apparatus for the inlet of fresh air to heating radiators fixed in buildings and the like.

9,929 of 1909.—Joseph Hay Amies: Composition for paving, flooring, and like purposes, and method of laying same.

10,691 of 1909.—Phillip Weiss: Manufacture of mouldings.

12,209 of 1909.—Hermann Zeglin: Means for fastening metal strips to masonry.

13,091 of 1909.—Karl Langenbeck: Vitrified paving brick or block.

13,829 of 1909.—John Howard Fox: Fires or grates.

14,027 of 1909.—Albert Selby and Edward Henry Bishop: Reinforcement of concrete.

15,408 of 1909.—Leon Monnoyer, Alfred Monnoyer-Rommelaere, and Marcel Monnoyer: Reinforced concrete structures.

15,624 of 1909.—Richard Steiner: Matchboard coverings for walls and the like.

18,102 of 1909.—Hermann Flentje: Process of manufacturing artificial paving stones.

19,301 of 1909.—Francesco Mangiameli: Blowpipes.

21,670 of 1909.—Hector Marvin Sinclair: Cement.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, —; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See October 2 and 23, also advertisement in our issue of November 27 for further particulars.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 1.—**Hetton.**—CLUB.—The Committee of the Hetton Working Men's Club invite plans for the erection of a new club. Plans, with estimates, to be sent to Mr. Jas. Widdowfield, Secretary, Hetton Working Men's Club, Pemberton-street, Hetton-le-Hole.

JANUARY 1.—**Larne.**—TECHNICAL SCHOOL.—The Larne Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Victoria-street. A premium of 21*l.* will be paid for the approved design. Further particulars may be obtained from Mr. Thomas Clearkin, Secretary.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1.—**Oldham.**—PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 13.—**Abercarn (Mon.).**—SCHOOL WORKS.—Monmouthshire Education Committee invite tenders for the erection of two additional classrooms and other work at the Abercarn Council School. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. John Bain, Architect, County Council Offices, Newport, on payment of a deposit of 1*l.* 1s.

DECEMBER 13.—**Belfast.**—ROOF, ETC.—Roof and wood ceiling at the Clifton-street Presbyterian Church; also for alterations to the schoolhouse. Plans, etc., may be seen at office of Messrs. Young & Mackenzie, Scottish Provident-buildings, Belfast, and schedule of quantities obtained from Mr. Acheson Ferguson, on deposit of 1*l.* 1s.

DECEMBER 13.—**Bridlington.**—ALTERATIONS, ETC.—Alterations and additions to business premises at No. 5, Quay-road, Bridlington, for Mr. W. Neal. Plans, etc., can be seen at office of Mr. Joseph Shepherdson, architect, 8, Quay-road, Bridlington.

DECEMBER 13.—**Cartmel.**—ALTERATIONS.—Alterations and additions to Broughton Hall, Cartmel, for Mr. R. S. Grayrigge. Bills of quantities may be obtained from, and drawings inspected at, the office of Messrs. J. W. Grundy & Son, architects and surveyors, Central-buildings, Ulverston.

* DECEMBER 14.—**Bangor.**—ENLARGEMENT.—The North Wales Counties Training College Committee invite tenders for improvement and enlargement of the Bangor Normal Training College. See advertisement in this issue for further particulars.

DECEMBER 15.—**Bridlington.**—HOUSE.—Erection and completion of a dwelling-house in Marine-drive, Bridlington, for Mr. H. Webster. Plans, etc., can be seen at office of Mr. Joseph Shepherdson, architect, 8, Quay-road, Bridlington.

DECEMBER 15.—**Langho.**—ALTERATIONS.—Lancashire Inebriates Acts Board invite tenders for internal alterations to buildings at Langho Reformatory. The plans may be seen, and bills of quantities obtained, at the office of the architect, Mr. Henry Littler, 16, Ribbiesdale-place, Preston, by payment of a deposit of 1*l.*

DECEMBER 15-JANUARY 17.—**Pontefract.**—SCHOOL.—The Governing Body, Pontefract Girls' High School invite tenders for the erection of a girls' high school in the Park, Pontefract. Names and addresses to Messrs. Tennant & Collins, architects, Ropergate, Pontefract. Each application must be accompanied by a deposit of 2*l.* 2s.

DECEMBER 15.—**Pontypridd.**—FOUNDATION WORKS.—The Guardians invite tenders for the construction of foundation works and of a wooden paling at the rear of premises in Court House-street, Pontypridd. Specification, etc., can be seen at office of Mr William Spickett, Clerk to the Guardians, Union Offices, Pontypridd.

DECEMBER 15.—**Stockton.**—ALTERATIONS TO BARRETT-STREET PROPERTY (OLD CHAPEL).—The Guardians invite tenders for this work. Forms of tender, etc., can be obtained from Mr. John Rodham, 16, Finkle-street, Stockton.

DECEMBER 16.—**Huddersfield.**—ALTERATIONS.—The Education Committee invite tenders for alterations in the manual instruction room, Oakes Council School, Huddersfield. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the offices of the Borough Engineer and Surveyor, 1, Peel-street.

DECEMBER 17.—**Ancoats, Manchester.**—SHEDS.—The Chorlton and Manchester Joint Workhouse Committee invite tenders for the erection of wooden stone-breaking sheds at their premises in Tame-street, Ancoats, Manchester. Specifications may be obtained from the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester, upon payment of a deposit of 10s. 6d.

DECEMBER 17.—**Sheffield.**—REBUILDING FRONT.—The Markets Committee of the City Council invite tenders for pulling down and rebuilding front of premises, No. 34, Waingate. Official envelope provided.

DECEMBER 18.—**Widnes.**—ERECTION OF NEW PAROCHIAL BUILDINGS, WIDNES.—The drawings, etc., may be seen, and bill of quantities, etc., obtained, at the office of Mr. Frank S. Biram, architect, George-street, St. Helens.

DECEMBER 20.—**Ardmore.**—BUNGALOW.—A bungalow residence at Ardmore, Co. Waterford. Plans, etc., prepared by Messrs. W. H. Hill & Son, architects, 28, South-mall, Cork.

DECEMBER 20.—**Barnsley.**—SCHOOL.—A public elementary school on site off Grove-street, Barnsley, for the Education Committee. Detailed specifications and quantities may be obtained from the architect, Mr. E. W. Dyson, Regent-street, Barnsley, on payment of a deposit of 2*l.* 2s.

DECEMBER 20.—**Cardiff.**—ALTERATIONS, ETC.—Alterations and additions to No. 17, Castle-street, Cardiff. The plans, etc., may be seen at the office of Mr. W. H. Dashwood Cap'e, F.R.I.B.A., 2, Church-street, Cardiff.

DECEMBER 20.—**Farnworth, Bolton.**—BOILER-HOUSE.—The Guardians invite tenders for the erection of boiler-house, cookhouse, bakehouse, stores, and workshops at the Workhouse, Fishpool, Farnworth. Plans may be inspected, and bills of quantities, etc., obtained from Mr. Samuel Coope, F.S.I., 24, Mawdsley-street, Bolton, for which a charge of 5*l.* will be made.

DECEMBER 20.—**Swansea.**—TRAMP BUILDING.—Particulars, etc., to be obtained from Mr. Ellis, architect, Fisher-street, Swansea.

DECEMBER 21.—**Sheffield.**—SHED, ETC.—The Health Committee of the City Council invite tenders for the erection of new shed and stores at Worthing-road Depôt. Drawings, etc., may be seen, and bills of quantities etc., obtained, on application to the City Architect, Town Hall, Sheffield.

* DECEMBER 21.—**Wednesbury.**—POST-OFFICE ENLARGEMENT.—The Commissioners of H.M. Works, etc., invite tenders for enlargement of Wednesbury Post-office. See advertisement in this issue for further particulars.

DECEMBER 22.—**Chadderton.**—REFUSE DESTRUCTOR.—The U.D.C. of Chadderton invite tenders for the erection of a refuse destructor in connexion with existing buildings, and inclined roadway at the sewage disposal works, Middleton Junction. Specification, etc., may be obtained on application to the Surveyor to the Council, Town Hall, Chadderton, on payment of 2*l.*

DECEMBER 22.—**Skircoat.**—HOUSE.—For mason's, joiner's, plumber's and glazier's, plasterer's, stone slater's, and concretor's work required in the erection of a detached house at Skircoat. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh, F.S.I., & Graham Nicholas, F.R.I.B.A., architects and surveyors, Museum-chambers, Halifax.

DECEMBER 23.—**Abertillery.**—SCHOOL.—The Abertillery U.D.C. Education Committee invite tenders for the extension of the Blaentillery Mixed School. Drawings, etc., may be inspected at the office of the architect, Mr. W. H. Riley, Chapel-street, Abertillery. Bills of quantities supplied by the architect on deposit of 1*l.* 1s.

DECEMBER 23.—**Halifax.**—ALTERATIONS, ETC.—The Electricity Committee of the Halifax Corporation invite tenders for the execution of the mason's, joiner's, plumber's, and slater's work required for alterations and repairs to a warehouse, situate in Wade-street, Halifax. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 1*l.*

* DECEMBER 23.—**Minster-in-Sheppey.**—SCHOOL.—The Kent Education Committee invite tenders for new Council school at Minster-in-Sheppey, Kent. See advertisement in this issue for further particulars.

DECEMBER 24.—**Winchester.**—BATHS.—Erection of suggested swimming and other baths in Winchester. Bills of quantities may be obtained, and plans and specifications seen, at the offices of Mr. J. Ashton Sawyer, chartered surveyor, 59, High-street, Winchester.

DECEMBER 28.—**Bury.**—SCHOOL.—The Corporation of Bury invite tenders for the erection of an elementary school in Elton, Bury, in accordance with plans prepared by Mr. F. S. Biram, George-street, St. Helens. Drawings may now be inspected either at the offices of the Architect, or at the offices of the Quantity Surveyor, Mr. W. E. Gill, Derby-chambers, Fleet-street, Bury. Specifications, etc., may be obtained from the Director of Education, 8, Bank-street, Bury, upon payment of a deposit of 1*l.*

DECEMBER 28.—**Folkestone.**—PUBLIC LIBRARY EXTENSION.—The Corporation invite tenders for extension of the Public Library on Grace Hill. Plans may be seen at the Borough Surveyor's office, Church-street, and copies of the specification, etc., may be obtained on payment of 1*l.* 1s.

DECEMBER 30.—**Birkenhead.**—HOSPITAL BLOCK.—The Guardians invite tenders for new hospital blocks, administrative block, and mortuary at the Birkenhead Union Workhouse. Copy of the quantities from Messrs. Edmund Kirby & Sons, architects, 5, Cook-street, Liverpool, upon payment of a deposit of 5*l.* 5s.

DECEMBER 30.—**Newton Abbot.**—CEMETERY WORKS, WOLBOROUGH.—Newton Abbot U.D.C. invite tenders for the erection and completion of the following works, viz.:—(*a*) Boundary walls, gates and railings, etc. (contract No. 1); (*b*) sexton's lodge, store, etc. (contract No. 2); (*c*) mortuary chapel (contract No. 3). Drawings, etc., may be seen, and forms of tender, etc., obtained, at the Surveyor's office, Town Hall, Newton Abbot, on payment of 2*l.* 2s. for each set of quantities.

DECEMBER 30.—**Warrington.**—BATHS.—The Town Hall, Park, and Baths Committee invite tenders for the erection of two new swimming baths, new slipper baths, and sundry alterations to the Corporation Baths. Drawings, etc., may be seen, and forms of tender, etc., obtained, at the office of the Borough Surveyor, Town Hall. A deposit of 2*l.* 2s. will be required for quantities. Cheques to be made payable to the Borough Treasurer, Warrington.

* JANUARY 3.—**Netley.**—ALTERATIONS TO HOSPITAL.—The Secretary of State for War invites tenders for alterations to and refitting of annexes, drainage, etc., Dental Hospital (D Block), Netley. See advertisement in this issue for further particulars.

JANUARY 3.—**Oxford.**—SCHOOLS.—The Local Education Authority invite tenders for the erection of a boys' and girls' school in Thames-street, St. Aldate's, and for additions, etc., to certain existing buildings, intended to form an infants' school, in Luther-street, Oxford. Plans, etc., can be seen at, and bills of quantities obtained from, the office of the City Estates Surveyor, Town Hall, Oxford. Deposit of 2*l.* 2s. for the bills of quantities.

JANUARY 4.—**Margate.**—EXTENSION OF GLASS AND IRON SHELTER.—The T.C. invite tenders for the extension of the glass and iron shelter at Westbrook, Margate. The specification can be seen, and all further particulars obtained, at the office of the Borough Surveyor, 13, Grosvenor-place, Margate.

JANUARY 5.—**Llandovery.**—SCHOOL ADDITIONS.—Carmarthenshire C.C. Education Committee invite tenders for building additions to the County School at Llandovery. Drawings, etc., may be seen on application to Mr. W. Vincent Morgan, A.R.I.B.A., County Architect, County Offices, Carmarthen, from whom further particulars may be obtained.

JANUARY 7.—**Bedford.**—REFUSE DESTRUCTOR WORKS.—The Urban Sanitary Authority, acting by the T.C. of Bedford, invite tenders for the erection of certain buildings in connexion with a proposed

Digitized by Google

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

refuse destructor. Copies of the general conditions, etc., may be obtained, and the drawings inspected, on application to their Engineer, Major Hector Tulloch, C.B., R.E., No. 28, Victoria-street, London, S.W., on payment of a deposit of 3*l.* 3s. The Engineer will also attend at the Town Hall, Bedford, on December 16 and 17, when the drawings may also be inspected and copies of the bills of quantities, etc., obtained.

✱ JANUARY 8.—**Crewe.**—TRAINING COLLEGE.—The Cheshire Education Committee invite tenders for new training college for teachers at Crewe. See advertisement in this issue for further particulars.

✱ JANUARY 15.—**Truro.**—COUNCIL OFFICES.—The Cornwall C.C. invite tenders for Council Offices, Truro. See advertisement in this issue for further particulars.

✱ JANUARY 18.—**Macclesfield.**—DETACHED VILLA.—The Committee of the Cheshire County Asylum, Parkside, invite tenders for a detached villa for private patients, Parkside Asylum, at Macclesfield. See advertisement in this issue for further particulars.

NO DATE.—**Ashbourne.**—COTTAGES.—Erection of six cottages on the Wirksworth-road, Ashbourne. Schedules of quantities may be obtained on application from Messrs. Naylor & Sale, architects, Smiths Bank-chambers, Market-place, Derby.

NO DATE.—**Disley.**—SCHOOL.—Erection of a school at Disley for the Cheshire C.C. Names at once to the architects, Messrs. S. Butterworth & Duncan, F.R.I.B.A., 4, South-parade, Rochdale (along with a cheque for 1*l.* 1s.).

NO DATE.—**Keighley.**—SHOPS AND OFFICES.—Three lock-up shops and offices, Station Bridge, Keighley. Drawings can now be seen, and bills of quantities obtained, at offices of Messrs. Moore & Crabtree, architects, York-chambers, Keighley.

NO DATE.—**Tipton.**—CARETAKER'S HOUSE, ETC.—Tipton U.D.C. invite tenders for the erection of a caretaker's house and outbuildings on land adjoining the Public Offices, Tipton. Plans, etc., may be seen, and all particulars obtained, on application to Mr. Wm. H. Jukes, M.E., Engineer and Surveyor to the Council, Surveyor's offices, Public Offices, Tipton.

ENGINEERING, IRON, AND STEEL.

DECEMBER 15.—**Rathdown.**—PUMP SINKING.—The Rathdown No. 1 R.D.C. invite tenders for the sinking of pump holes and erection of pumps. Form will be supplied on application to the Clerk of the Council, Mr. Patrick Cunniam, Clerk's office, Loughlinstown.

DECEMBER 17.—**Donaghadee.**—SINKING AND TESTING WELL.—The Donaghadee U.D.C. invite tenders for (*a*) sinking a well; (*b*) testing the yield of a well, in accordance with specification, conditions, and stipulations prepared by Mr. Henry J. Weaver, M.Inst.C.E.I., which may be seen at office of Mr. D. Walker, Clerk to the Council, Town Clerk's office, Donaghadee.

DECEMBER 18.—**Glasgow.**—BOILER.—The Corporation invite offers to supply and erect one "Lancashire" boiler, or alternative one "Yorkshire" boiler, at Belvidere Sanitary Wash-house, Londonroad. Specifications, etc., may be obtained on application to Mr. Peter Fyfe, Chief Sanitary Inspector, 25, Montrose-street, Glasgow.

DECEMBER 18.—**Glasgow.**—LOCOMOTIVE.—The Corporation invite tenders for a saddle tank locomotive. Each offerer to tender on his own specification, and to supply a photo. or print of the engine. Mr. A. W. Myles, Town Clerk, City Chambers, Glasgow.

DECEMBER 20.—**Romsey, Southampton.**—RECONSTRUCTION OF CULVERT.—Reconstruction of end of culvert at Romsey. Plan, etc., on application at the office of Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. A deposit of 1*l.* 1s. will be required for a copy of the plans and specification. Deposits must be made by cheque, payable to the Hants C.C., and crossed Bank of England.

DECEMBER 21.—**Sheffield.**—STEEL ROOF.—The Directors of the Sheffield United Gas Light Company invite tenders for the supply and erection of a steel roof over their No. 3 retort-house at Neepsend Works. Also for the supply and delivery only of 252 retort mouthpieces. Drawings may be seen, and bill of quantities, etc., obtained, upon application to the Company's Engineer, Mr. J. W. Morrison.

DECEMBER 23.—**Edinburgh.**—REFRIGERATING MACHINERY.—The Magistrates and Council invite tenders for refrigerating machinery on the ammonia compression system for chill rooms in connexion with new markets and slaughter-houses, Gorgie. Schedule, etc., may be obtained from Mr. J. Walker Smith, Burgh Engineer, at his office, on payment of a deposit of 3*l.* 3s. by crossed cheque payable to Town Clerk.

DECEMBER 28.—**Filton.**—PUMPING MACHINERY FOR SEWERAGE WORKS.—Chipping Sodbury R.D.C. invite tenders for the provision and erection of pumping machinery at the new sewage pumping station, in accordance with the specification prepared by their engineers, Messrs. A. P. I. Cotterell & Carr, of 26, Victoria-street, Westminster, and 28, Baldwin-street, Bristol. Forms of tender may be obtained from the engineers at Bristol on payment of the sum of 2*l.* 2s.

DECEMBER 30.—**Stepney.**—PLANT.—The Electricity Supply Committee of the Metropolitan Borough of Stepney invite tenders for the manufacture, supply, and erection of a complete system of coal and ash handling plant. Copies of general conditions, specification, etc., may be obtained from Mr. Wm. C. P. Tapper, A.M.I.E.E., Borough Electrical Engineer and Manager, at No. 27, Osborn-street, Whitechapel, E., on payment of a deposit of 5*l.* 5s.

DECEMBER 30.—**Wolverhampton.**—TETTENHALL PUMPING STATION EXTENSIONS: CONTRACT No. 5, PUMPING MAIN.—Plans may be inspected, and copy of the specification, etc., obtained, on application to Mr. E. A. B. Woodward, Town Hall, Wolverhampton, and the payment of 5*l.*

JANUARY 11.—**Gloucester.**—BRIDGE WORKS.—The Directors of Great Western Railway Company invite tenders for the reconstruction of a portion of a bridge over the River Severn at Gloucester. Plans, etc., may be seen, and forms of tender and bills of quantities obtained, at the office of the Engineer at Paddington Station, London.

JANUARY 11.—**New South Wales.**—POWER GENERATING STATION EQUIPMENT.—The Representative of the Commonwealth of Australia, 72, Victoria-street, Westminster, S.W., is prepared to receive tenders for the supply, delivery, c.i.f. Sydney, and erection (at the Lithgow Small Arms Factory, New South Wales, Australia) of a power generating station equipment. Form of tender, etc., may be obtained on application at the Commonwealth Office.

FEBRUARY 1.—**Tiflis.**—GASWORKS.—The Municipality of Tiflis (Russia, Caucase) invite tenders for the construction and exploitation of the gaswork for lighting, heating, and power gas. The conditions of contract may be obtained at the offices of Municipality (Gorodskaja Ouprawa). Other particulars at the City Engineer's Office (Gorodskoj Ingener).

MISCELLANEOUS.

DECEMBER 13.—**Toxteth Park.**—OFFICE FITTINGS.—The Guardians invite tenders for office fittings, as per plans and specification, to be seen at their Offices, 15, High Park-street, Liverpool.

DECEMBER 14.—**London.**—FILES.—The Directors of Bombay, Baroda, and Central India Railway invite tenders for the supply of files. Forms, with specification, can be obtained at offices of Mr. C. Cromelin, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 1*l.* 1s. each, which will not be returned.

DECEMBER 14.—**Stockport.**—CRUSHER.—The Sewage Outfall Committee invite tenders for a new or second-hand crusher. Mr. Robert Hyde, Town Clerk, Town Clerk's office, Town Hall, Stockport.

DECEMBER 16.—**Plympton St. Mary.**—SCAVENGING.—The Plympton St. Mary R.D.C. invite tenders for the removal of house refuse, etc., from houses in the villages of Ridgeway, Colebrook, and Underwood. Conditions of contract and further particulars may be had on application to Mr. W. E. Horton, Sanitary Inspector, Plympton.

DECEMBER 17.—**London.**—SCAVENGING.—The Council of the Metropolitan Borough of St. Marylebone invite tenders for the removal of refuse from the whole of the houses and premises in the South District of the Borough. Particulars, etc., may be had on application to Mr. James Wilson, Town Clerk, Town Hall, Marylebone-lane, Oxford-street, W., or to the Medical Officer of Health, at No. 24, Somerset-street, W.

DECEMBER 18.—**Chesterfield.**—SCAVENGING.—Chesterfield R.D.C. invite tenders for cleansing the ashpits, privies, and dustholes in the Upper District of the Parish of Pilsley, and removing the contents of the same. Forms of tender may be obtained from Mr. E. S. Robinson, Woodthorpe House, Tupton, Chesterfield.

DECEMBER 19.—**Warrington.**—PARTITIONS.—The Education Committee invite tenders for the supply of two small sliding partitions. Forms of tender may be obtained from Mr. J. Moore Murray, Secretary and Director, Education Office, Warrington.

DECEMBER 31.—**Trowbridge.**—STEAM ROLLING.—Wilts C.C. Roads and Bridges Committee invite tenders for steam rolling on 516 miles of main road. Specifications, etc., can be obtained from the County Surveyor.

✱ JANUARY 4.—**Wandsworth.**—VARIOUS MATERIALS AND WORK.—The Wandsworth B.C. invite tenders for the execution of works and supply of materials. See advertisement in this issue for further particulars.

PAINTING, etc.

DECEMBER 13.—**Bury.**—PAINTING.—The Corporation of Bury invite tenders for the painting of the chemical laboratory at the Technical School. Specifications, etc., may be obtained from Mr. Arthur W. Bradley, A.M.Inst.C.E., Borough Engineer, Bank-street.

DECEMBER 13.—**Ipswich.**—PAINTING.—The Education Committee invite tenders for the inside colouring, painting, or varnishing, etc., of several schools in the Borough. Full particulars, etc., may be obtained on application to the Committee's Surveyor, Mr. E. T. Johns, Tower-chambers, Tower-street, Ipswich.

DECEMBER 15.—**Uxbridge.**—PAINTING, ETC.—Uxbridge Joint Hospital Board invite tenders for the painting and decoration of the exterior of the hospital block and porter's lodge and other repairs at the Joint Hospital, Kingston-lane, Hillingdon, Uxbridge. Specification can be seen at the offices of the Board's Surveyor, Mr. William L. Eves, 54, High-street, Uxbridge.

DECEMBER 16.—**Aberbargoed.**—PAINTING, ETC.—Certain work, including papering and painting, at the Travellers' Rest and cottages adjoining, at Aberbargoed, for Messrs. A. Buchan & Co., the Brewery, Rhymney. Plans, etc., may be seen either at the Travellers' Rest or at office of Mr. T. Roderick, architect, Clifton-street, Aberdare.

DECEMBER 22.—**Harrogate.**—COLOURING, ETC.—The Committee of Management of the Royal Bath Hospital and Rawson Convalescent Home, Harrogate, invite tenders for colouring, painting, whitewashing, etc. Mr. B. Shaw, Secretary.

ROADS, SANITARY, AND WATER WORKS.

DECEMBER 13.—**Alnwick.**—PIPE-LAYING WORK.—Tenders are required for 108 yds. of 2-in. cast-iron pipes, etc., near Queen-street, Togston; also for connecting the 6-in. and 4-in. water mains near Amble New Hall. The plans, etc., may be seen at the office of the Council at Alnwick, and a copy thereof at the office of Mr. Wm. Gibson, Queen-street, Amble.

DECEMBER 13.—**Bitterne.**—SEWER WORKS.—South Stoneham R.D.C. invite tenders for cleansing and looking after about four and a half miles of sewers in the Parish of Bitterne, with accessory works. Further particulars can be ascertained upon application to Mr. E. T. Westlake, Clerk to the Council, 20, Portland-street, Southampton.

DECEMBER 13.—**Cullingworth.**—SEWER.—Bingley U.D.C. invite tenders for laying about 135 yds. of be seen, and quantities obtained, on application at office of Mr. H. Bottomley, Surveyor, Town Hall, 9-in. pipe sewer at Cullingworth. Plans, etc., may Bingley.

DECEMBER 13.—**Leeds.**—PAVING, ETC.—The Highways Committee invite tenders for the paving and flagging of private streets. Drawings may be seen at the City Engineer's Office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

DECEMBER 13.—**Newark.**—STREET WORKS.—For works of sewering, levelling, paving, etc., in connexion with making good of 165 yds. in length of Newton-street, in accordance with plans, etc., to be seen, and copies of quantities and forms of tender obtained, on application at the office of the Borough Surveyor, Town Hall.

DECEMBER 13.—**Stockton-on-Tees.**—PRIVATE STREET IMPROVEMENTS.—The Corporation invite tenders for private street improvements works. Plans, etc., may be seen, and quantities, etc., obtained, from Mr. M. H. Sykes, Borough Engineer, Town Hall.

DECEMBER 14.—**Salford.**—PAVING.—Tenders are invited for paving and completing certain streets. The plans may be seen, and forms of tender, etc., obtained, at the Borough Engineer's office, Town Hall, Salford.

DECEMBER 14.—**Southampton.**—STREET WORKS.—The Corporation invite tenders for executing private street works in Kingsbury, Imperial, and Empress roads. Plans, etc., may be inspected, and form of tender and bills of quantities obtained, at the Borough Engineer's office, upon production of the Borough Treasurer's receipt for a deposit of 2*l.* 2s.

DECEMBER 15.—**East Farleigh.**—DRAINAGE.—Maidstone R.D.C. invite tenders for certain drainage works at Nos. 2-16, Tovil-hill, East Farleigh. Forms, etc., can be obtained, and drawings can be seen, at the office of the surveyor, Mr. T. A. Busbridge, "The Firs," Bower Mount-road, Maidstone.

DECEMBER 15.—**Rochdale.**—PAVING.—The Paving, etc., Committee invite tenders for the sewering work required in Lyons-street, Rochdale. Plans, etc., may be seen, and copies of the quantities, etc., may be obtained from the Borough Surveyor.

DECEMBER 16.—**Bedford.**—PAVING.—Paving and road-making in Churchville-road, Bedford, according to plans, etc. Information obtained at the Borough Surveyor's office, Town Hall, Bedford.

DECEMBER 16.—**Capel Llanilltern.**—ROAD.—Occupation road, about 488 yds. in length, on the site for small holdings at Capel Llanilltern, near Creigiau. Plans, etc., may be seen, and form of tender, etc., obtained, at the City Engineer's Department, City Hall, Cardiff.

DECEMBER 17.—**Rogerstone.**—DRAINAGE.—St. Mellons R.D.C. invite tenders for providing, etc., 190 lin. yds. of 9-in. and about 175 lin. yds. of 6-in. diameter stoneware surface-water drains between Tregwilym Fach Farm and Rogerstone Station; also for providing, etc., 78 lin. yds. of 24-in. diameter granite steel-ribbed concrete tube culvert near the Oak Tree Inn, Rogerstone. Drawings, etc., may be seen upon application to Mr. Ithel Thomas, Clerk, Queen's Hill, Newport, Mon., from whom bills of quantities and forms of tender may be obtained upon payment of a deposit of 1*l.*

DECEMBER 20.—**Tipton.**—SEWERAGE: CONTRACT No. 1 "A."—The U.D.C. invite tenders for the construction of main and subsidiary sewers, etc., in accordance with the drawings, etc., prepared by Mr. Wm. H. Jukes, M.E., Engineer and Surveyor to the Council. Bill of quantities, etc., on payment of 3*l.* 3s.

✱ DECEMBER 21.—**Harlesden.**—ROAD-MAKING, ETC.—The Willesden U.D.C. invite tenders for the execution of certain road-making and paving works. See advertisement in this issue for further particulars.

DECEMBER 22.—**Merton.**—MAKING-UP.—Merton U.D.C. invite tenders for making-up Melbourne-road. Plan, etc., may be seen, and form of tender obtained (on payment of 2*l.*), on application to Mr. G. Jerram, Surveyor, Council Offices, Merton.

DECEMBER 28.—**Filton.**—SEWERAGE WORKS.—Chipping Sodbury R.D.C. invite tenders for the construction of a system of sewerage for the Parish of Filton, in accordance with the plans, etc., prepared by their engineers, Messrs. A. P. I. Cotterell & Carr, of 26, Victoria-street, Westminster, and 28, Baldwin-street, Bristol. Plans may be seen at the offices of the engineers, Bristol. Copies of the specification, etc., may be obtained from the engineers on payment of the sum of 3*l.* 3s.

JANUARY 1.—**Pencoed and Coychurch.**—WATER-WORKS.—Penybont R.D.C., Bridgend, invite tenders for the laying, jointing, and completing of about eleven miles of steel-tube water mains. Plans can be seen, and specifications, etc., obtained, from the Engineer, Mr. Eiryn W. Davies, "Kingston," Cowbridge-road, Bridgend, upon payment of the sum of 1*l.* 1s. The Engineer will be prepared to meet intending contractors at Pencoed Station on Monday, December 20, at 9.15 a.m., to go over the ground.

✱ JANUARY 3.—**Wandsworth.**—ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving part of Crowborough-road, Streatham. See advertisement in this issue for further particulars.

NO DATE.—**Penrhiewtyn.**—ROAD.—Construction of a road at Penrhiewtyn, near Neath. Plans, etc., can be seen at 58, Water-street, Neath.

STONES, MATERIAL, AND STORES.

DECEMBER 13.—**Bingley.**—PIPES.—Bingley U.D.C. invite tenders for the supply and delivery of sanitary pipes for the year ending December 31, 1910. Forms of tender may be obtained on application at office of Mr. H. Bottomley, Surveyor, Town Hall, Bingley.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3489. DECEMBER 18, 1909.

Contents.

	PAGE
THE TOWN PLANNING CONFERENCE	659
STUDENTS' DESIGNS AT THE ROYAL ACADEMY	660
NOTES	661
THE ROYAL INSTITUTE OF BRITISH ARCHITECTS	662
THE ARCHITECTURAL ASSOCIATION	665
PICTURE EXHIBITIONS	669
ARCHITECTS' TECHNICAL BUREAU	669
THE LONDON COUNTY COUNCIL	669
MEETINGS	670
FIFTY YEARS AGO	670
THE *BUILDER* COMPETITION	670
OUR NEW YEAR'S NUMBER	670
ILLUSTRATIONS:—	
THE GARDENS AT SOUTH STONEHAM HOUSE, HAMPSHIRE	670
NEW PREMISES, NOS. 308-320, OXFORD-STREET	670
DESIGNS FOR SIMPLE LEADED GLASS	671
THE SOCIETY OF ARCHITECTS	671
MAGAZINES AND REVIEWS	673
APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1909	674
ARCHITECTURAL SOCIETIES	675
THE ROYAL SANITARY INSTITUTE	676
COMPETITION NEWS	676
CORRESPONDENCE:—	
PROFESSOR HAMLIN'S LECTURE	676
WESTMINSTER CITY COUNCIL	676
LONDON AND DISTRICT BOROUGH COUNCILS	676
MASTER BUILDERS' ASSOCIATIONS, ETC.	677
TOWN PLANNING	677
PROJECTED NEW BUILDINGS IN THE PROVINCES	677
LONDON COUNTY COUNCIL EDUCATION COMMITTEE	678
OBITUARY	678
GENERAL BUILDING NEWS	679
STAINED GLASS AND DECORATION	680
SANITARY AND ENGINEERING NEWS	680
MISCELLANEOUS	680
LAW REPORTS:—	
ACTION FOR BREACH OF COVENANT	681
PATENTS	681
SOME RECENT SALES	681
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	682
PRICES CURRENT	684
TENDERS	685

Illustrations.

GARDENS, SOUTH STONEHAM. MR. L. ROME GUTHRIE, ARCHITECT.

NEW BUSINESS PREMISES, OXFORD-STREET. MR. JOHN MURRAY, F.R.I.B.A., ARCHITECT.

DESIGNS FOR SIMPLE LEADED GLASS FOR SHIPPING OFFICES, CARDIFF. BY MR. WALTER H. CAMM.

Illustrations in Text.

	PAGE
VARALLO, ORTA, AND VARESE (THE ARCHITECTURAL ASSOCIATION):—	
FIG. 1. PIERCED WOODEN SCREEN, VARALLO	665
FIG. 2. CHAPEL OF THE TRANSFIGURATION, VARALLO	665
FIG. 3. THE SCALA SANTA, VARALLO	666
FIG. 4. THE OCTAGON CHAPEL, ORTA	667
FIG. 5. DOMED CHAPEL, ORTA	666
FIG. 6. CHAPEL AT VARESE	667
NEW PREMISES, OXFORD-STREET. PLAN	671

The Town Planning Conference.

THE Conference which has been sitting at the Westminster Palace Hotel for two days this week, to consider the subject of Town Planning in special relation to the powers and opportunities created by the new Act, took for the basis of its discussion a series of papers on the subject which were not read, but were placed, as far as possible, in the hands of those who attended the meeting or were interested in its subject.

In looking through some of these papers, it becomes apparent that the motive which is at the bottom of most of them is mainly hygienic and philanthropic; and no doubt the Housing and Town Planning Act itself may be considered to be to a great extent a philanthropic measure, calculated to promote the greatest good of the greatest number. This is not the only possible aspect of Town Planning, the other and we should almost be inclined to say the higher object of which is to get rid of ugliness and to produce beauty in towns. In fact, the laying out of towns so as to produce beautiful and stately effect almost inevitably brings in its train a better hygienic condition, in the regard necessarily shown for open spaces and a limiting of the height of buildings in comparison with the width of streets; while the consideration of hygienic conditions does not necessarily carry with it much attention to architectural beauty. Houses may be very healthy, physically, and yet very ugly and uninviting; we say physically, because ugliness in our dwellings and habitual surroundings may have a certain prejudicial effect on health, as inducing a less happy state of mind; but the connexion with physical health is perhaps rather indirect, and certainly would not affect all persons in the same degree.

Another point that strikes us in some of the papers before us, which were supposed to form the basis of the Conference, is the very decided condemnation in them of the tenement house on a large scale; not only as regards health and happiness for the inmates, but in the point of view also of economy, which is supposed by many to be one of their chief merits. This is very strongly put by Mr. T. C. Horsfall in his excellent paper, in speaking of the dearness of building land for the houses of the poorer classes in connexion with German cities. He lays it down that "there is only one real cause for dearness of land in towns, viz., excessive use"; and goes on to say that "it is because the 1 acre of land provides habitations for a much larger number of persons in German towns than in English towns that land is so much dearer there than here. The average number of inhabitants per acre is in Berlin about 180, and in London about 62." In other words, the economy in building supposed to be provided by housing the poorer class in lofty tenement structures—unattractive, unhomelike, and in one sense at least unwholesome, in that they stop out a great deal of sun and air in proportion to the space around them—is obliterated by the fact that the existence of these structures raises the cost of the land on which they are or are to be built. And if the plea of economy is removed from the tenement house—what used to be called the "model dwellings" type—what else is there to be said in its favour?

We gather that Professor Valendas, of Munich, is of the same opinion, though he does not state it in quite so positive a wording. He says that town planning and enlargement "should in the first place provide the greater part of the population with good, cheap, healthy, and modest artistic dwellings"; phrases which certainly do not characterise the tenement house. He thus describes the essential difference between the ancient and the modern town: in Prussia, he observes, 90 per cent. of the town population are obliged to live in small dwellings of one, two or three rooms. "The ancient towns, often several times enlarged, gave 'room to live' to their population. That is one of the reasons of their artistic character [a very significant remark which is worth noting]. Modern towns are continually enlarged, but nevertheless great part of their population have not room to live. This is one of the reasons of the inartistic expression of modern towns." Further on, contrasting the conditions of the ancient and modern town, Professor Valendas says:—

"In the ancient town the property-holding citizens were in the ascendant, whether they had a worldly or ecclesiastical lord, or made their own laws, as was the case in the numerous free imperial towns of Germany. In the modern town the element which owns nothing is the greatest. It forms the most important support for productive labour in the main. This predominance of the propertyless element has brought with it an entire change, not only in the requirements of dwellings, but also in the whole character of the towns. In the economic small industry which five decades ago was predominant in Germany and which in small towns is still important, the dwellings, the workshop, and also the shop were so combined that the workman in most cases not only worked at his trade in his master's house, but also lived there and belonged in a certain sense to the family.

When in the course of the development of factory work the small industry was forced aside, a separation of the dwelling and the workshop naturally took place. The latter was removed from the existing residence. The immediate demolition of the old does not indicate the beginning of the contrast between the new and the old, but an increasing settlement of new elements on the periphery. The results of this crystallisation caused little by little breaks in the old conditions. The result

Digitized by Google

of this transfer of the workshops was the building of large quarters, that are occupied exclusively by the working population. How these workmen's quarters developed in the beginning it is not necessary for me to describe more particularly. Before their existence the expression 'overcrowding' was unknown. This word alone indicates the lowest point in civilisation of a whole period which is to-day not yet ended."

On a further page the author remarks on the excellent example set by the Corporation of Ulm, who acquired the ground occupied by the ancient and now useless fortifications, and on the land, when cleared of these, planned cheap sites for workmen's dwellings, not (as in other cases in Germany) dwellings of the densely populated barrack type, but houses for two or three families. The barrack type appears, in short, to have had a specially large development in Germany, and to be recognised as a failure. And it must be remembered that overcrowding vertically is just as bad in its effects as overcrowding horizontally; an argument which applies to the buildings of the wealthy as well as to those of the poor. We are making this mistake over a great part of London at the present moment. Higher buildings require wider streets, not only for architectural but for hygienic reasons: and do not get them.

In regard to the artistic treatment of cities Professor Valendas makes also a good remark as to the importance of preserving a relation between the design of the town and the character of the site. The ancient towns, as he puts it, "are associated with the earth on which they stand." Of course the chance of designing the town in reference to the site, or of letting the character of the site suggest and govern that of the town, hardly occurs now, except in regard to extensive new suburbs, or to what have gained the name of "Garden Cities"; but this relation between town and site is no doubt, as he suggests, one reason of the impression of beauty given by many ancient towns. And where there is the chance of thus designing the architecture of a new suburb with an æsthetic relation to the site, it must not be forgotten that this is essentially an operation calling for the mind, and the best mind, of the architect. In a report of a meeting on another page of this issue we see that the claim has already been advanced that this kind of work is essentially a surveyor's business. That is just what it is not; it is an important architectural problem which requires the mind and training of the architectural artist; and this is perhaps even more the case in architectural and street alterations in existing large towns. We have specimens of what may be called surveyor's planning in the treatment of the Constitution Hill arch and the open space opposite to it, and a still worse instance in the case of the recent manipulation of the surroundings of the Marble Arch; two of the greatest mistakes that have been made in what are called "London improvements"; entirely for want of a competent architectural mind to direct the operations.

The practical results of the Conference may be summed up in two resolutions which were passed, after a good deal of discussion. The first, at Tuesday's meeting, was to the effect that in connexion with questions of improvement in any town, a "Town Planning Committee" should be appointed by the local authority, with the suggestion that a limited number of persons specially qualified might be asked by the local authority to give advice on any scheme proposed. It was also agreed that a clear statement of the objects to be aimed at should be drawn up, and that this statement should include the provision of parks and open spaces and the preservation of all places of beauty and of historic interest. All this is in the right spirit; and the provision of open spaces, opportunities for recreation and for preserving air space (apart from the larger question of parks) is of the greatest importance to town life; the evidence in regard to this point given in Mr. T. C. Horsfall's paper is especially clear.

At the second day's meeting much was said in favour of the importance of individuals and societies who had an enlightened interest in the subject coming forward and giving their support to a Local Authority wishing to carry out an improvement scheme. This is very important, because there is no doubt that for the first few years the application of the Act will meet with strong opposition from those who have private interests which they may think will be affected by an improvement scheme. The Act initiates in many respects a new state of things, and its very novelty will lead to opposition at first, until people have become used to it and learned to accept it as the established order of things. At the same meeting the following resolution, proposed by Mr. Beard (Town Clerk of Blackburn), was passed:—

"That the attention of the Local Government Board be called to the urgent need for at once devising some simple procedure and effective provisions for protecting the community against the passing of street and building plans for the immediate development of areas on unsatisfactory lines before the town plan is made."

Arrangements were subsequently made for the formation of a Town Planning Advisory Committee, which it was hoped would be of service in answering questions and publishing papers and plans in connexion with Town Planning schemes.

Considering the national importance of the subject, and the interest which has been awakened by the new Act and all that it may mean, it is remarkable how little space and attention has been accorded to the Conference by the daily papers. We presume they consider that the public are indifferent to it. If so, the public must be, and probably will be in time, awakened as to the importance of the subject.

THE CHRISTMAS HOLIDAYS.—Next week the *Builder* will be published on Thursday, the 23rd inst., and to ensure attention all communications for the Editor must reach our office not later than by first post on Wednesday morning.

POST OFFICE, NEW ZEALAND.—H.M. Trade Commissioner for New Zealand (Mr. G. H. F. Rolleston) reports that a contract has been made with a Wellington firm for the construction of a post office at that town, at a cost of about 100,000*l*. The name of the firm who have obtained the contract may be obtained by British firms interested, on application at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.—*Board of Trade Journal.*

STUDENTS' DESIGNS AT THE ROYAL ACADEMY.

THE annual exhibition of work by students of the Royal Academy is of more importance than would attach to it if considered as an ordinary exhibition of works of art. It is the testimony as to the results of the training in our principal teaching centre of art, and it is sometimes the occasion of bringing to light talents in design which will probably enable their possessor to take a conspicuous place in the future annals of English art.

Mr. Harry H. Jewell, who has obtained both the Gold Medal and Travelling Studentship in Architecture and the 25*l*. prize for a "Design in Architecture," ought, if he makes the best of this start, to fill a high place in the profession some day. In regard to exterior architectural treatment his elevations for the 25*l*. prize are superior to those shown in the more important competition for the Gold Medal; both are classic architecture, but the Gold Medal design, for "A Nobleman's Mansion in a large Park, with Garden Terraces down to the River," is in its exterior treatment of a rather tame and scholastic type; the 25*l*. design shows a much more vigorous treatment. This defect in the Gold Medal design is however of minor importance, for the real merit in the design consists in the fine treatment of the plan and in the grasp of the whole as an architectural conception. The house has a grand front courtyard entered between two blocks of outbuildings and flanked within by a semicircular arcade on each hand (somewhat on the plan of Bernini's forecourt to St. Peter's). In the plan of the house itself there is a great deal of scope for interior effect; the whole is symmetrically and axially laid out, and a very good point in it is the group at one end of a set of rooms more especially belonging to ladies (boudoir, small drawing-room, etc.), while at the other end, in a similar position, are the smoking-room, library, and study; a "ladies' stair" being connected with the first-named group and a "gentleman's stair" with the other one; an arrangement very suitable in a mansion of the first order. The only mistake in the plan (æsthetically) is that, just as Vanbrugh at Blenheim made the chapel and the kitchen balance each other in the design, so the author here has made the chapel and billiard-room balance each other, as two similar circular apartments in corresponding situations on opposite sides of the plan. This is hardly suitable. The fact is that a chapel, as a sacred apartment in or in connexion with a building the rest of which is for secular purposes, ought to have a special position and treatment; it cannot balance with anything else. The plan of the gardens is as fine and dignified as that of the house.

Looking over the other designs in the same competition, it is interesting to note that in nearly all of them the conception of the plan is the best element in the design; there is no architecture that we care much for, but several of the plans are good; a fact to be noted, because it implies that plan is receiving more attention in the Architectural School

Digitized by Google

of the Academy than it formerly did. In No. 148 the front block, with its suite of reception-rooms in the rear of a colonnade and its large flight of exterior steps up to the entrance, is very dignified, although in the perspective view it is evident that the flight of steps requires connecting with something in the laying out of the ground, instead of being left to form a kind of naked headland jutting out alone. External steps are thought inconvenient, in these degenerate days; but there is no such fine and stately method of access to a large house.

The 25*l.* designs need not detain us much; among the designs for a Campo Santo the one with Doric order (167) was the best; the design No. 179 for a mausoleum merited notice as a simple and effective treatment of a small domed structure on a Greek cross plan; and No. 161 showed a good elevation for a railway terminus façade designed under manifestly French influence. Another railway station design, in which the clock erection looks like a magnified timepiece off a drawing-room chimney-piece, is an instance of that deficient perception of the quality of scale which is so often a stumbling-block with young designers; we meet it again in the prize design for the "Set of Drawings" (15*l.*) by Mr. J. G. Cooper, in which the pierced decoration of the doors in the ground story is quite out of scale, and gives the impression of a much smaller structure than was intended; in other respects this is a clever design, showing some fancy and invention. Among the other designs in this set one for a Golf Club House (No. 195) is pleasing and suitable; and a design for "An Arched Gateway with a Pair of Lodges" (203) pleased us by its simplicity of treatment and a style rather apart from the stereotyped entrance lodge programme. The Perspective Drawing in Outline Medal is won by Mr. Weinberg with a very correct and cleanly executed drawing of the Strand entrance to Somerset House; a difficult piece of work, with its assemblage of arch-curves.

Sculpture, as usual, shows the finest work of the year. The Gold Medal is awarded for a basrelief treatment of "The Expulsion from Paradise," gained by Mr. Alfred Buxton for a work which, in its beauty of composition and expression, seems the production of a finished artist rather than of a student in the usual sense of the term. Among the others, No. 130 showed a fine effect of consentaneous movement in the design and composition of the two figures. The subject for the small sculptural group was "Hercules Wrestling with Death for the Body of Alcestis." In most of these there is a want of really forcible action, but the prize design, by Mr. Wyon, is a fine and forcible group, and would work out very well into a life-size composition.

The "Design for the Decoration of a Public Building" forms the link between architecture and painting, and is one which we always regard with special interest. The subject this year, "A Hunting Scene, Classical or Mediæval," is one that allows plenty of liberty of treatment in regard both to composition and colour. The tendency with all the competitors has been to crowd their figures too much and thus rather lose sight of decorative arrangement of line; but the design of Miss Bentwich, which gained the prize, is very good in colour, and the life-size cartoon of one figure is admirable in pose and drawing. The Creswick Prize landscapes are, we think, better than usual, and there is no doubt that this year the prize has been rightly awarded to the painting by Miss Kennedy, whose picture is full of light and colour, and entirely avoids those crude tones which seem the difficulty with young landscape-painters in oils. Among others which had decided merit were Nos. 18, 24, and 29. For the Turner Gold Medal ("Fishing boats Making for Safety in a Gale") there were few competitors, and only one worth counting, Mr. T. Lucas, to whom the Medal has been awarded; his painting of rough sea and shipping is very true and spirited, and gives promise for the future.

It is perhaps a proof of the great difficulty of oil painting dealing with important figure subjects, that the works painted in competition for the Historical Painting prize are usually the least successful of the year. To master all the difficulties incident to this elaborate form of art seems as much as can be done by a beginner; and though the prize picture, by Miss Robilliard (this is quite a ladies' year) is undoubtedly the best, yet one feels that, as a picture, it could only pass as a mediocre one in any fairly representative exhibition. This is what we always felt in regard to the Historical Picture competition; it is only a matured and long-practised talent that can handle such an art with mastery and a certainty of a success beyond mere manipulation. Whether figure-painting in oil is the greatest of the arts of design may be a question; but we feel no doubt that it is the most difficult, with a difficulty totally beyond what the average picture-gazing public, with their easy-going praise and blame, ever realise.

NOTES.

Professor Hamlin's Lecture.

THE paper by the distinguished American visitor, Professor Hamlin, on Architectural Education in America, read at the Institute on Monday, was a little too long, but was full of interest, and gave a remarkable historical survey of the state of architecture in the United States, from the early days of the naïve and unconscious charm of the "Old Colonial" classic, through the dark days during and following the Civil War, when art was practically dead, down to the present-day systematic and highly organised architectural education which, whatever questions it opens for discussion, is so highly to the credit of the country. The description of art in the war period reminded one of that scene in "The Wrecker," where the American pupil tells his French teacher in the Paris atelier that his sculpture group is a commission for the decoration of a Hôtel de Ville. "Ah!" said the French artist, "qu'est-ce que vous me chantez là?" But on explanation, said "Ah! en Amérique—veery good, veery good." But we thought the best part of all Professor Hamlin's utterances was his really eloquent little speech at the close of the meeting, deprecating the idea that America was to make a new architecture of her own: Were they not, he said, like the English, the direct inheritors of Shakspeare and of English mediæval architecture? Why should they be asked to create a new style, any more than England? There is some truth in that. Nevertheless we think there is a little too much Ecole des Beaux-Arts in contemporary American architecture.

The Strozzi Palace, Florence.

IT is gratifying to learn that the late Prince Piero Strozzi has bequeathed to the Italian State, or to the Minister of Public Instruction in that behalf, the Strozzi Palace, for its dedication to some fitting public purpose and maintenance as a national monument, subject to the payment of certain charges upon his estate amounting in all to about 56,000*l.* The palace was built by the eldest Filippo Strozzi, whose portrait, with those of several members of his house, the Prince has left to the communal administration of Florence. The Strozzi Palace, which is almost a twin building, architecturally, with the Riccardi Palace, is one of the most remarkable examples of the stately and severely designed private palaces of the early Renaissance, in which, as Fergusson puts it, the wall takes the place of the columnar order, and the cornice is proportioned to the whole height of the building, and not to an order occupying a portion of the height. The Strozzi cornice is one of the boldest features in Italian Renaissance architecture, projecting nearly 10 ft. from the wall surface; a far greater projection than its bed on the wall, which gives rather an unsatisfactory and even alarming appearance in a section of the building. It must, of course, have been tied down in some way, which is not very truthful building; but its grand effect may be held to atone for that. It is satisfactory to think that this grand building is now preserved from possible demolition and become a public monument. Had it stood in London, it would probably by this time have been pulled down in order to build a block of "Flats" on the site.

Waterloo Bridge Foundations.

AN early evidence of activity on the part of the Port of London Authority has been given by the request to the County Council that some pile stumps should be removed from the position they had occupied for the last hundred years. In the opinion of the new Board these stumps were dangerous to navigation, but we certainly must say that the view is scarcely borne out by actual experience. The piles in question were probably some of those in the three concentric rows forming the cofferdams in which the piers were built under the direction of Sir John Rennie, and very properly left in position, after having been cut off as low as possible, to consolidate the soil beneath the river bed. The County Council have already dealt with the matter, we presume by cutting down the projecting stumps and leaving the buried portions in place so as to avoid any injurious effect on the stability

Digitized by Google

of the structure justly described by Canova as "the noblest bridge in the world." During the operations it was discovered that some other pile stumps remain beneath the crown of the first river span on the Middlesex side. Possibly they were originally driven for support of the arch centring. The subject of their treatment is now under consideration by the Highways Committee, by whom a report will be issued if necessary. The shortening of these stumps would present no difficulty, but for the moment it does not appear that the Port Authority object to them.

The Assopus Viaduct.

IN addition to the Fades Viaduct, of which some particulars were given by us in October last, French engineers are to be credited with the boldly-designed steel bridge for the new railway from Piræus to the Turkish frontier. This structure is about 700 ft. long, and spans a ravine some 600 ft. from side to side, and more than 325 ft. deep at the lowest point. Emerging from a tunnel at either side, railway trains will traverse either one or four girder spans according to direction, and then pass over an arch of 262 ft. span with the rise of 78 ft., this arch being of the three-hinged type. The five girder spans, each 86 ft. long, are supported on lofty masonry piers. The whole of the steel work was prepared in the yard of the contracting firm in Paris, and transported thence by rail. Considering the exceptional facilities possessed by some of our North-east Coast and Scottish firms for the economical production and shipment of structural steel work, it seems a little strange that an inland French company should be able to secure the work. Of course there may be special reasons for this, but in any event it is well that British industrial concerns should recognise the enterprise and marked ability of their friendly rivals in France.

Waterproofing.

A PAPER read on this important topic by Mr. Myron H. Lewis before the Municipal Engineers of New York is now issued in pamphlet form. The author limits attention to those branches of work, defined by him as "waterproofing engineering," which relate particularly to means of protecting structures against injury by water and the occupants of structures from discomfort due to the penetration of water. He considers not only methods of treating various substructural conditions, but also the treatment of concrete so as to make it impermeable. He discusses the treatment of the materials and that of the structures in which they are employed before and after erection, above or below ground, and in water. Mr. Lewis is quite right in saying that defective waterproofing is almost worse than none. He is an advocate of the axiom that the best is the cheapest, and in addition to theoretical consideration he goes thoroughly into practical details in a manner which we are sure will be appreciated by our readers. The value of the paper is enhanced by various specifications for waterproofing work, including those adopted for the New York Rapid Transit Subway, the Long Island Railroad Tunnel, and concrete bridges on the Chicago and North-Western Railway.

Modern Cement Works.

IN a paper read to the Junior Institution of Engineers this week, Mr. Harry Horsburgh, A.M.Inst.C.E., discusses "The Design and Running of Modern Cement Works," tracing progress in methods of manufacture from the days of Joseph Aspdin to the present time. The rotary kiln, originated in England, first employed in the United States, and reimported like many other British inventions as an American novelty, has also revolutionised the manufacture of Portland cement. The longest kiln of this type in England is one at the works of Messrs. Forder at Sundon, Bedfordshire, its dimensions being 150 ft. long by 7 ft. 6 in. diameter, and its capacity 700 tons per week. Thanks to the rotary kiln, the cost of production has been reduced very materially, the actual works cost, as stated by the author, being from 11s. to 12s. per ton. A certain amount of prejudice exists with regard to "rotary cement," but we see no reason why this product should not be fully equal, or even superior, to that from the old-fashioned kiln. Although not of great length, the paper is one deserving perusal by all who make use of Portland cement in architectural and engineering construction.

Contractors' Plant for the East River Tunnels.

RARELY has there been a more complete account of contractors' plant for an important engineering work than that embodied in the paper read this week before the American Society of Civil Engineers. The author, Mr. Henry Japp, M.Am.Soc.C.E., occupies some seventy-five pages in the *Proceedings* of the Society, with a fully detailed description of the machinery and appliances used by the contractors who built the East River tunnels of the Pennsylvania Railroad, giving particulars concerning the construction, installation, and operation of air-compressors, steam boilers, steam pipes, coal-handling apparatus, air pipes, hydraulic plant, fire service appliances, tunnelling shields, grouting plant, transport systems, caissons and air locks, pumps, stone crushers, concrete mixers, dredging plant, medical lock for treating caisson disease, workshop equipment, and other things too numerous for individual mention. The free and open way in which contractors' plant is discussed by American technical societies and journals deserves imitation on this side of the Atlantic, where engineering and building contractors are often needlessly secretive on the subject of the appliances used in the execution of important works.

BAPTIST SUNDAY-SCHOOL, SHEFFIELD. — The Baptists of Sheffield have erected Sunday-school premises at Portmahon. The cost of the scheme has been about 2,300*l*. The new building is of three stories, with classrooms 24 ft. by 16 ft. and 18 ft. by 12 ft. on each floor. The large schoolroom, 40 ft. by 30 ft., under the chapel, has been entirely remodelled. The architects were Messrs. H. L. Paterson and F. W. Chapman, both of Sheffield.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE usual fortnightly meeting of the Royal Institute of British Architects was held on Monday night at No. 9, Conduit-street, W., Mr. Ernest George (President) in the chair.

Mr. H. T. Hare, Hon. Secretary, announced with regret the decease of Mr. H. B. Garling, elected an Associate in 1843 and Fellow in 1857. He was awarded the Institute's Silver Medal in 1868 for his essay on "Sculpture and Sculptural Ornament." He won the Royal Academy Silver Medal for measured drawings and the Gold Medal for architectural design. In 1857 he won the first premium of 800*l*. for his design for the War Office, his design being selected from amongst 218 submitted.—Also Mr. T. Wm. Cutler, elected an Associate in 1873 and Fellow in 1878. He served on the Council for seven years until 1898, and took an active part in the affairs of the Institute as well as in those of the Royal Sanitary Institute.—Also Mr. Geo. Campbell Sherrin, elected an Associate in 1882 and a Fellow in 1898. Mr. Sherrin served for some years on the subcommittee of the Institute, but was never a member of the Council. His work would be known to many of them, but was not so widely known as it deserved to be. He was an earnest and sincere worker, and the buildings erected from his designs bore evidence of this. His loss would be a severe one not only to the Institute, but to the profession generally.

Architectural Education in America.

Professor A. D. F. Hamlin read a paper on this subject, of which the following is an extract:—

In America one most important circumstance impressed itself profoundly from the outset upon all their building operations. This was the necessary substitution of wood for the stone and brick in which they had been accustomed to work. In a forest-covered land, where every acre of tillage had to be won from the pines and oaks, construction in timber imposed itself as the only practicable and economical method of building. The habit of masonry construction disappeared for lack of opportunity for its exercise; and when, early in the XVIIIth century, the first beginnings of true architectural art appeared, it was the architecture of Queen Anne, and later of the early Georges, interpreted in wood, not stone and brick, by carpenters and cabinet-makers, not masons. In this Colonial American architecture the American builders developed a genuine style of their own, full of refinement and charm, and suited to the material chiefly employed. Trained professional architects, however, there were none. The first forty years of the XIXth century witnessed a considerable architectural activity, greatly influenced in the late 'twenties and even through the 'forties by the English-Greek Revival. The Civil War period—from 1850 to 1876—was the period of darkest night for American architecture. Political conflict wholly absorbed the energies of the American people. But with returning peace and increasing leisure, the amenities of the higher culture began to receive increasing attention. The return of peace in 1865 had been followed by a sudden industrial awakening, especially in mining and the development of railway building and manufactures in the west. This led to the establishment of numerous technical schools, following the lead of Columbia College which had even in the midst of the war established its school of mines in 1863. The great Massachusetts Institute of Technology was opened at Boston shortly after that date—he thought in 1866.

Five years later a similar department was established in the Cornell University at Ithaca, in the State of New York, in pursuance of the expressed wish of the broad-minded founder of that University, Ezra Cornell, that it should be an institution

Digitized by Google

"where anyone could study anything he wanted to study." This department was placed under the direction of an accomplished scholar, Charles Babcock. A year or two later the State Industrial University of Illinois at Champaign, in that State, followed the example of Cornell. Thus at the time when the Philadelphia Exhibition marked the close of the Civil War epoch and ushered in the American Renaissance, there were in the United States three well-established schools of architecture, and these were the only organised and publicly recognised means for obtaining a professional training in architecture. The British system of office pupilage, with a fee to remunerate the architect for his personal interest and attention to his pupils, never obtained any foothold in the United States. But as far back as 1859 or 1860, the late Richard M. Hunt, of New York, freshly returned from Paris, where he had distinguished himself in the Ecole and under Hector Lefuel had worked on the designs for the new Louvre, opened a private *atelier* or studio in connexion with his office, and received as pupils a number of young men who later became distinguished architects; among them William R. Ware and George B. Post. These pupils he inspired by his infectious and unquenchable enthusiasm, and became to them a true master, *patron*, teacher and friend, so that this modest little *atelier* might be called the first nursery of architectural training in America.

The first school of architecture was organised in Boston in 1866, as a department of a school of technology, was in part modelled upon the architectural section of the Ecole des Beaux-Arts in Paris. A school, with an organised curriculum, was a necessity because of the total absence of any regular and organised system of office apprenticeship. That it should be connected with a school of technology was but the logical consequence of two facts; first, that architecture requires, in common with engineering, a considerable amount of mathematical and purely scientific training, such as these schools were already providing, and that, indeed, on its purely structural side it is really a branch of civil engineering; and secondly, that there were no highly-developed schools of art prepared to supply any large part of the training required by the architect. Since then the Massachusetts Institute of Technology was already prepared to offer thorough courses in mathematics, mechanics, mechanical drawing, strength of materials, foundations, masonry and structural design, it seemed only necessary to add a professor who should teach the history of architecture and the theory of design, and one or two instructors in design and architectural drawing and rendering, to complete the necessary staff of instruction. As there was then no American pupil of the Ecole available, M. Eugène Létang was called to the new post, which he filled acceptably for wellnigh twenty years. The results justified the experiment: the Boston School acquired a high reputation which it had maintained ever since, in spite of the multiplication of large and well-equipped schools throughout the country. After the death of M. Létang there followed a period during which the school lost somewhat of its pre-eminence in the matter of design; but in 1892 or 1893 M. Despradelle was called from Paris to the chair of design, which he had ever since filled with conspicuous success, and from that date the M.I.T. School began to recover the lost ground.

The present organisation of the Columbia Course in Architecture recognised three classes of students. First, those who aspire to the highest achievement in the profession, and to that end seek for a broad foundation of liberal culture through non-architectural studies before taking up their strictly professional courses; secondly, those who, without this broader foundation, desire to pursue a systematic course of architectural study for three or four years and to receive a definite academic recognition of their attainment; and finally, young men, already more or less experienced as draftsmen in the profession, who desire to pursue special studies in architecture while unable to afford the time or expense of the complete curriculum.

The curriculum leading to the degree of Bachelor of Architecture comprised the following groups of studies: (*a*) Mathematics and Engineering, comprising Analytical Geometry, Plain Trigonometry, the Differential and Integral Calculus, Mechanics, Graphical Statics, and Architectural Engineering—a specialised course in strength of materials and the calculations for masonry, columns, beams, and trussed constructions, with specific problems to be worked out in full; (*b*) Architectural History, including a three years' course in the history of architecture and the history of ornament, with at least one year of readings in archæology and architectural history in French and German; (*c*) Office-work and specifications, comprising parallel courses in the materials and forms of building and in specifications, and a certain amount of certified work in architects' offices; (*d*) Drawing and modelling, exercises occupying from six to ten hours per week through the entire period of study, in architectural draughting, modelling in plasticine, and freehand drawing, from elementary cast-drawing to life-drawing from the nude, and including a considerable amount of training in architectural water-colours; (*e*) Graphics, comprising advanced shades and shadows, perspective, descriptive geometry, and stereotomy; and finally (*f*) Design considered as the crowning feature of the course, the end and aim to which all other branches pursued are contributory. This course comprised lectures on the theory of planning, composition, colour, and decoration, and a graded series of problems beginning early in the first year of study and extending to the end of the course, culminating in the graduating thesis—the design of a building upon a programme selected by the student, upon which he prepares a fairly complete set of scale working drawings and specifications, with strain-sheets, calculations, and structural details of a given part of the edifice.

In the school of architecture of Harvard University there was but one general university *atelier*, but the giving out of problems in design and the criticism of the work are successively assigned to different architects in active practice. Thus variety of ideas and personality in the instruction were insured, though the element of continuity was somewhat sacrificed, and there is no opportunity for the development of that emulation which results from the maintenance of three distinct *ateliers* as at Columbia. At the other schools the design is under a single professor with one or more assistants. At most of the other schools, moreover, the course is fixed at four years; while at Columbia it is of indeterminate duration, the student graduating when he has acquired the prescribed "points," so that the ambitious and highly capable man is not held to the pace of the average, nor the faithful but slow plodder made to feel disgrace at not completing his programme of work within a rigidly-fixed limit.

With regard to the tide Paris-wards of their architectural graduates, the brilliant reputation of the Paris school, the fifty years' tradition of its advantages for American students ever since the days of Hunt and Richardson, the influence of the Beaux-Arts Society and its competitions, and the glamour of the affixed title of Diplômé de l'Ecole des Beaux-Arts, all tended to draw Paris-wards the young American graduate who desired to visit the Old World or to acquire further discipline in design. But the Columbia University School sought to discountenance the waste of time and duplication of work already done, involved in acquiring the Paris Ecole *diplôme*. They had sought to persuade their young men that the best that Paris can offer could be acquired by the graduate of an American school in a year or eighteen months, without entering the Ecole itself; and that one year in Paris and one year of travel, half on classic soil and half in England and Germany—two years in all—were of more real educative value than three years spent in acquiring the French *diplôme*.

He could not close without a word as to the work of the Society of Beaux-Arts architects of America. It numbered now some two or three hundred members scattered through the Union, and its committee on education issued each year, according to a carefully prepared calendar, two classes of problems, each comprising seven or eight major problems and as many one-day sketches. The printed programmes for these are given out on a set day at a dozen or more centres in different cities, under a representative, in each place, of the Society, who gathers the sketches (the competitors retaining tracings of them) and sends them to the New York office. Anybody might compete; the majority of those availing themselves of the privilege being young draughtsmen in the offices, who worked upon the designs at night, in *ateliers* conducted by themselves under the direction of a patron or critic belonging to the Society. A select jury judges each set of designs, awarding medals and graded mentions, and the highest premiated designs are published in one or more periodicals.

A course of training in these competitions is not, of course, the equivalent of an architectural education, but it was of undoubtedly great value to those who pursue it.

Mr. T. G. Jackson said he understood that the system described by the author contemplated three classes of students. The first class, which he would call "A," went through a course which led to the diploma of architecture, and it embraced two years' course in general subjects unconnected with architecture. The second class, "B," had a course leading to a certificate, but with no degree, and it was confined to architecture only. The third class, "C," embraced general teaching for men already at work on architecture who wanted to improve themselves in their profession, and who got no certificate at all. It seemed to him that class "A" was based on a confusion of ideas. General culture and liberal education was one thing, but architectural training was another. The man who graduated in art in the usual way and afterwards proceeded to study architecture was intelligible enough, and it often happened that a man after leaving the University entered an architect's office and studied architecture with great advantage; but to treat study which qualified for a degree in the arts as part of the architectural curriculum seemed to him a confusion of ideas and a sort of intellectual muddle which mixed up two different subjects altogether, and he could not help thinking it was inspired by a motive of which they had had instances in this country, viz., an attempt to give a sort of adventitious distinction and dignity to the profession of architecture by investing it with a diploma, which was an entirely fictitious distinction. In class "B" the strictly architectural teaching was more thorough than in A, and the author said: "The curriculum is more exclusively professional than the other, but it is less extended, and both in the preparation required and in the studies prescribed partakes of less of the character of a liberal education." This meant that more time was given to real architectural teaching than in the first class. Then in the last class of all they had simple practice in architecture for the man who already knew something of it, and he would imagine it was an extremely useful class, if not the most useful class of all the three. He was the last person in the world to deny general culture, for, of course, the more

Digitized by Google

cultured a man was the greater was his intellectual pleasure and the greater his usefulness to mankind; but general culture would never make a man an artist. If they looked at the careers of the great painters and sculptors they would find that as a rule they had risen from the ranks, and in many cases it was the same with the great architects. When they came to the great masterpieces of mediæval art he imagined they were the works of men who would now be called illiterate. He did not mean to decry the advantages of culture, but that the influence of culture upon architecture and art in the individual artist was indirect and not direct, and in adopting a scheme of general culture as a necessity of the training for an architect they were doing nothing at all. For that reason he could not help feeling that there was just as much hope, if not more, from the two inferior classes which carried with them no University distinction or degree; and one might look for perhaps better architects from these classes than the first class. It also appeared to him that there was too much stress laid on mere technicalities. Mathematics might be useful to the architect, and under certain conditions he could understand that. If he might speak for himself, he confessed his mathematics did not go beyond the first four rules, and they were enough to enable one to calculate the weight one had to carry and the strength one had to provide for. And then there were humane people who had provided tables which he had always found sufficient for his purpose. There were so many things which an architect had to learn that it was impossible for him to become expert in them all, and an architect who was wise could send for an engineer when he began to consider heating and ventilating, and the same with electrical matters and the very difficult problems of drainage. They all felt with the author the difficult position of the architectural students in America in having no old buildings in their own country; but in the very circumstances there was a suggestion which one always hoped the Americans would take advantage of. Whilst they knew that all styles must be developed from preceding styles and old example, and that no art ever came into being itself fully equipped; while the arts of the old world had been so long studied in America; while they had produced so many good architects of originality, and they expected good work from their successors; yet it did occur to him it was time America shut the book on old European example and developed the good work which had already been done by their own sons in their own country, and not look everlastingly across the ocean for example.

Mr. Reginald Blomfield, A.R.A., having expressed the pleasure they all felt in seeing Mr. Jackson amongst them, said he was not entirely in sympathy with all his views. He did not think that historically Mr. Jackson was quite correct, because they had it on the authority of the Architectural Association play that Ictinus was a tremendous fellow, and, at any rate, when they came to a later date the architects of the Renaissance were men of reasonable culture, and some were highly educated men. With regard to the question of technical instruction and education, what it really came to was that there were two ways of looking at education. The older educationalists said that the whole object of education was to train the mind before coming to the special subject. What they had to consider was whether a technical study such as architecture was as good a method of training the mind as the traditional methods. He thought it was not the best system, and he would infinitely prefer to have in his office a young man who had gone through a school and college training in general subjects rather than one who had gone through a partial education which had been overloaded with a very imperfect technical instruction. He was surprised that the American system did not lay more stress on draughtsmanship. He took it that the American system had in the main taken its inspiration from the Ecole des Beaux-Arts in Paris, although he was glad to hear it was being modified in certain practical directions. That school took its inspiration from Blondel, who laid down a perfectly organised course of instruction 150 years ago, and draughtsmanship was to a large extent the basis of the training. Some years ago an effort was made by some of them to reorganise architectural training in this country, and he thought they were a little misunderstood in regard to the importance of draughtsmanship. There was another point which did not apparently affect America, but which was of importance here. He meant that the practice of being articled to an architect was going out of fashion. When they struggled with their scheme to reorganise architectural training they hoped that young men would go through the technical drudgery necessary in the school, and then come fairly primed into an architect's office, and would be so far better qualified to learn in the office than if they came direct from the school or University. He regretted to say that intention had not been followed out entirely, and apprenticeship seemed to be going out of fashion.

Mr. J. W. Simpson, in proposing a vote of thanks to the author, said there was one point in the paper which he would try to answer. The author asked whether the creation of any school of architecture tended to help or to hinder the rational and free development of art. They could not leave such a question unanswered, because if they left it in doubt, and still more if they gave a reply in the negative, it would cut away from their feet the whole enthusiasm which inspired their efforts at education. A school of some sort or another was a necessity for the growth of art. All their art was founded on tradition, and from that tradition they could not get away. The difference between the nation without a school and the nation with a school was that one had learned its position easily by direct means from the teaching of men of greater experience, whilst the other had to find it out for themselves and learned the traditions imperfectly. A tradition there must be, and the simplest way to carry on the tradition was to have a school. Under their new Charter they had set up a Central Board, and he hoped on that Board they would have the strongest and best men in the country to take over the whole question of education and direct and guide it as far as they could.

Professor C. H. Reilly (Liverpool University) seconded the motion, and said he had a whole-hearted admiration for the great American schools, for the courses at Liverpool were designed very much on the same lines. He had visited the Columbia University and other great schools in America, and came back impressed with the magnitude of the work they were doing. The great feature was the general monumental character of their architecture and the refinement of detail. Although America had had distinguished architects, they were engaged in such vast practices that it was impossible for them to give the individual attention which was necessary, and this refinement must be due to the assistants; and the high training of these assistants was due to the growth during the last ten or twenty years of these large schools of architecture with their extraordinary equipment. In these schools they had a definite aim. They set themselves to teach monumental architecture based on the great classical traditions, and they did not meddle with Elizabethan and Jacobean and other styles. By concentrating their efforts on this groove they reached a quickness and facility of design and a comprehension of the massing of a building which students here lacked. They learned to handle a great problem with a certain amount of conviction and power which otherwise it took years of contact with actual buildings to acquire. It was due to this teaching that a great monumental architecture was being built up in America which he thought they would come to realise was the national American style.

Mr. H. H. Statham said that reference was made by the author to the old colonial style of timbered houses, and he afterwards expressed the hope that the influence of material would be more felt than at present. He (the speaker) thought these colonial buildings gave a beautiful instance of the influence of material, for there they saw the classical style transformed by the influence of timber; they saw the colonnades with the influence of the classic style about them, but the details changed in consequence of being worked in this material. He had felt for a long time that there was far too much of the Ecole des Beaux-Arts in American architecture, and was glad to hear the author say there was going to be a reaction. He had been in the habit of going to the Paris Salon every year to look at the architectural exhibits, and had found it a monotonous business. They were all very good, and it always seemed to him that he saw the same every year. They lacked individuality. With reference to the remark made by Mr. Jackson about going to specialists, when it came to the details of electricity and drainage and so on, these things were of course too complicated for one man to know them all. He did think, however, the architect should know enough of the principles of them all to say whether the one adopted was the right one or not. There was a case where an architect said he did not know anything about certain construction and went to a person strongly recommended to him. The man made a blunder, and the building came down, and he did not think the architect should be exonerated in such a case. The architect should know the principles underlying these special branches, even although he was unable to work out the details.

Professor F. M. Simpson said he would not like the author to leave feeling that everyone agreed with Mr. Blomfield and Mr. Jackson about general culture and general education. To his mind it was the portion of the curriculum of Columbia University which was of the greatest value. It was in that one particular essential that it differed from the other Universities of America, and Columbia had shown its wisdom and good sense in taking the lead and insisting that all students who were going to take its degree should in the first place go through a special two years' course of general education and culture. He confessed to be unable to follow Mr. Blomfield when he said he preferred a man in his office who was not partially trained. A man who had gone through this two years' course was in one sense partially trained, but surely he was much better trained than the man who had not gone through any course at all? That seemed to him to be the important point. Education was better understood in America than in any country except Germany, and he fully agreed with Professor Hamlin as to every point in the curriculum being necessary for the architectural student.

The motion having been carried,

Professor Hamlin said the points raised had been discussed for the last twenty years in the United States. It was the great question of general culture and professional education and the relation they should bear to each other. He did not think at Columbia the question of general culture and professional education had been confused or muddled because the two years of liberal education required was a pre-requisite before beginning the professional education. The two years of general training were only required of those who wished to take the degree of Bachelor of Arts or Bachelor of Architecture. They recognised that general culture would never make an artist, but they believed that the man who had artistic fire in him would make a better artist and display a more advanced

Digitized by Google

and cultivated taste if his artistic training was based upon a foundation. There was this to be said with regard to mathematics and American practice. In New York, where the majority of their graduates found their careers, questions depending upon mathematics had assumed an importance which perhaps they attained nowhere else, because, with the development of steel frame construction, the erection of tall edifices and problems of wind pressure, the new forms of concrete construction, and so on, engineering problems had come up which the architect had most to solve. It was to these men with the mathematical course—the diploma men rather than the certificate men—that they looked for a solution of these problems ultimately. There was a good deal of misconception amongst their friends of the Old World, and especially their French friends, as to the matter of architectural precedent. Shakespeare and Queen Anne belonged just as much to America as England, and the precedents of mediæval history were the same. Until the colonies became independent of Great Britain the old tradition of Great Britain was theirs. They had inherited the spirit and traditions of the English people, and they could no more ignore that in their architectural training and design than they could ignore it in the language they spoke from day to day. That was why they studied architectural history, and why they could no more produce architecture without regard to the architecture of the past than the English could without regard to the architecture of the Middle Ages and the Antique. No such architecture could be created.

The President announced that the next meeting would be held on January 3, when an election of members would take place, and matters referred to in the motions brought forward at the last meeting by Mr. W. Woodward would be discussed by Mr. G. E. Nield, Fellow.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary fortnightly meeting of the Architectural Association was held on Friday last week, at No. 18, Tufton-street, Westminster, S.W., Mr. C. Wontner Smith, Vice-President, in the chair, in the absence of the President, Mr. Henry Tanner.

The minutes of the last meeting were read and confirmed, and Mr. Maurice Webb, Hon. Secretary, made the following announcements:—

A meeting of the Debating Society on December 17, at 7 p.m. Paper by Mr. Raymond Unwin, entitled, "That the Planning of Towns and Estates Should be Designed by an Architect, Assisted by a Surveyor." (Joint meeting with the junior members of the Surveyors' Institution.)

A meeting of the Camera and Sketching Club on December 16, at 7.30 p.m. Paper by Mr. Paul Waterhouse, entitled, "Draughtsmen's Dreams."

The Life Class (under Professor E. Constable Alston) commences on Wednesday, January 5, at 6.30 p.m.

The lectures by Mr. Edward S. Prior on "European Mediæval Architecture" will commence on Wednesday, January 12, at 6 p.m.

The Chairman then announced the reinstatement of Mr. C. R. Newborn as a member.

He also proposed a vote of condolence to the widow and family of the late Mr. G. Sherrin. He said that Mr. Sherrin was an old and valued member of the Association, having been associated with them for nearly forty years, and during that time he was a staunch supporter of the Association. He was well known personally to many of them, and particularly to those who took part in the Excursions.

The motion was agreed to in silence.

The Chairman announced that the competitive designs for a "Façade for the Royal Institute of British Architects' Premises at 9, Conduit-street," arranged by the *Builder*, will be on view at 18, Tufton-street, from Monday, December 20, to Friday, December 24, from 10 to 4.

Varallo, Orta, and Varese.

Mr. F. C. Eden then read the following paper, entitled, "Varallo, Orta, and Varese."

"I propose to bring before you this evening a series of small and hitherto almost unnoticed buildings, the work of obscure or unknown architects, and will ask you to accompany me to a part of Italy which is not famous for any achievement in great architecture, but where the stones cry to us in the vernacular of a district that lay somewhat apart from the main trend of contemporary thought. Varallo indeed speaks but the rude patois of a sequestered valley. By the lake of Orta we may listen to a strain of true lyric grace, while Varese tells its story in unmistakable prose, a little turgid and artificial as befitted the times, but not without interest.

If you draw a line across the map of Italy westwards from the town of Como, twenty miles will bring it to Varese, situate among the low foothills just where the mountains fade away into the great Lombardy plain. Thirty miles further on, after crossing the lower arm of Lago Maggiore it will pass through the town and lake of Orta, and at a point some 60 miles from its starting-place Varallo is reached, in the deep and wooded valley of the Sesia, a river which rises among the glaciers on the western flanks of Monte Rosa. The connecting-link between these three places is that each possesses a noted sanctuary in its Sacro Monte, or Holy Hill, and it is more particularly of these sanctuaries and the buildings which they comprise of which I propose to speak.

Imagine a grassy and undulating slope on a wooded hill, dotted with chapel-like buildings that gleam among the tree trunks, or stand out white against the sky, imparting a character of architectural romance to the whole mountain-side. Provide them with porticoes under which are grated view openings to the interior, vary the plan, size and design as fancy directs, and you have the general appearance of a Sacro Monte.

Varallo.

Let us begin with the Sacro Monte of Varallo, that being, so far as I am aware, the first thing of the kind to be attempted. Its inception was due to a Franciscan friar, Bernardino Caimi, of noble Milanese family, who had been appointed Commissary of the Holy Places in Palestine by Sixtus IV. He returned home in the year 1481, and partly in grief at the neglected condition in which he found the sacred sites, partly with the wish to edify those of his countrymen who had not the opportunity of travel, determined to found a New Jerusalem in his native Lombardy, to contain, as its central object of pilgrimage, a replica of the Holy Sepulchre. Careful search among possible sites indicated the hill that overhangs Varallo as the most convenient for his purpose; and the foundation-stone of the Holy Sepulchre Chapel was laid in the year 1491.

Caimi started with the idea of reproducing the Holy Sepulchre, and probably certain other holy places, as Golgotha and the Grotto of the Nativity. But as the work proceeded the idea developed into commemorating the events of the Sacred Narrative by groups of life-sized figures, so that there are now forty-four chapels upon the Sacro Monte. We call these little buildings chapels for want of a better word, but they are not built or fitted for religious functions of any kind, but solely to shelter these groups of painted imagery which form in conjunction with their frescoed backgrounds tableaux of the Redemption story. In the earliest examples the figures are of wood, the latest are of stucco, but those of the best period are of terra-cotta. All are painted—nearly all, alas, repainted!—by the nearest house-painter or professor, which comes to pretty much the same thing, with rouged cheeks and staring eyes. For canopies, hangings, and so forth real drapery is introduced, and the figures have wigs of hair or dyed flax. There is no shirking realism so far as it may be had.

The first sight of these groups is certainly something of a shock. There is a sense of theatrical convention, of self-defeating realism; of the lifelessness that comes from arrested movement, as of a stage full of paralysed marionettes. This is the first impression. But if we complain of staginess, we must bear in mind that this is an attempt to put a scene upon a stage. It is a perpetual miracle play, a mediæval mystery without words or action. This intention must be recognised, and its resultant conventions accepted before we can judge fairly of the way in which it has been realised. But, after all, the strongest motive for suspending judgment and looking a little below the surface is the respect due to the great artists who took part in these works, viz., the three brothers D'Enrico, of Alagna, the great Fleming Tabacchetti, and Gaudenzio Ferrari. However, it is not my intention to discuss the sculptures, and I have only said so much because it was impossible to speak of the chapels without alluding to that for which they exist. At Varese and Orta we may leave the contents of the buildings out of count altogether, but at Varallo there are both frescoes and sculptures which undoubtedly take a high place among the works even of that great period, the Cinquecento.

The Sacro Monte rises precipitously to a

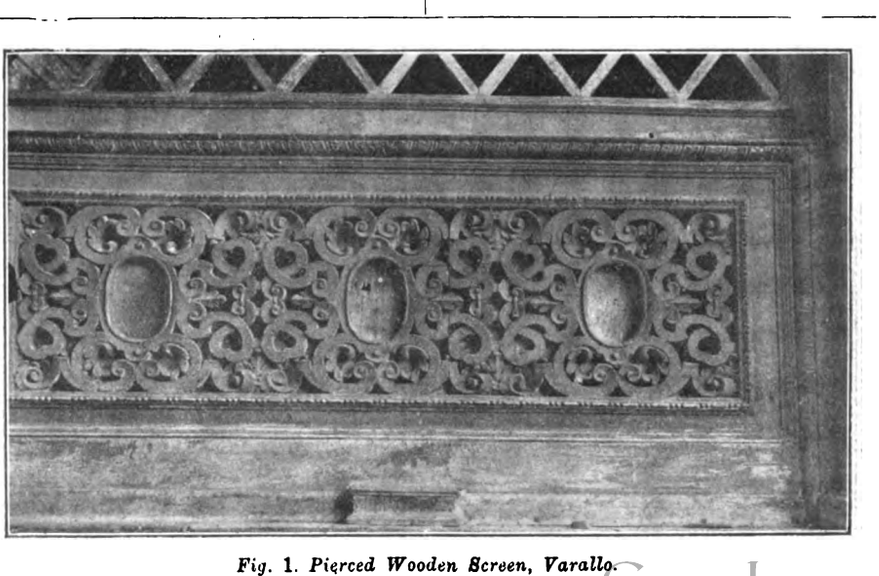


Fig. 1. Pierced Wooden Screen, Varallo.

Digitized by Google

height of about 500 ft. above the little town, and is approached by a paved and well-graded path overshadowed by the chestnuts with which the flank of the hill is covered. When the top is reached the first impression is a bewildering one, as of an inconsequent and haphazard jumble of chapels. But even when many hands and many minds have laboured on a piece of work, and at long intervals of time, that is not the Italian way. As a matter of fact, building went on at irregular intervals during a period of two centuries and more. Over forty chapels had to be huddled on to a small, irregular, and *accidenté* piece of ground; they had to be approached in a certain order, and no architect of repute, except the rather second-rate Alessi and Tibaldi, was employed. Yet the result is what we see.

When the sanctuary was first projected it was doubtless impossible to foresee to what an extent the scheme would develop. So it came about that as new chapels were founded from time to time they were built on convenient spots, with due regard to æsthetic requirements, but without much consideration for the chronological sequence of the events commemorated. Towards the close of the XVIth century Tibaldi was commissioned to prepare a plan to remedy this confusion, and though little or nothing in the way of building can be attributed to him, the arrangement of the connecting path by which the chapels are linked in their proper order seems to have been his. The sinuosities of this path are far more judicious than the serpentine meanders of the *jardin Anglais*, and there is much of the characteristic charm of the Italian garden in the lay-out, in which we include the length of time required to find out how small the area of ground covered really is. The path, of course, is cobble-paved with cross ribs of granite to afford foothold where the gradient is steep. It is bordered with trim hedges of box and beech; clipped shrubs and stone seats are set in the right places, and the chapels themselves supply points of interest at every turn of the way.

The walls are plastered, the columns and dressings of grey granite, a combination equally charming and appropriate whether among the bleak Breton moorlands or on the wooded slopes of these *riant* Alpine valleys. Much, of course, will depend upon the texture of the plaster, and we may trust the Italian even now to get an interesting surface in that material; while the fine stone slabs with which the roofs are covered would suffice to confer a sort of dignity upon the meanest shed. Owing to the absence of coursing they have a curious appearance of having been thrown helter-skelter on to the roof, and though doubtless they lie closer than they seem to do, and there must be no little method in the madness of their laying, it is not easy to see how they manage to exclude the searching snows of winter.

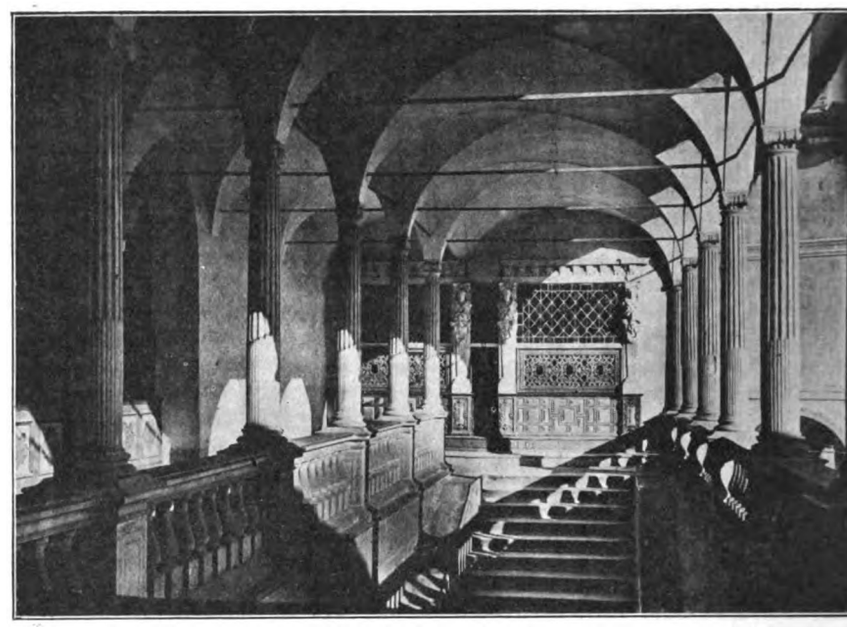


Fig. 3. The Scala Santa, Varallo.

Fig. 2. Chapel of the Transfiguration, Varallo.

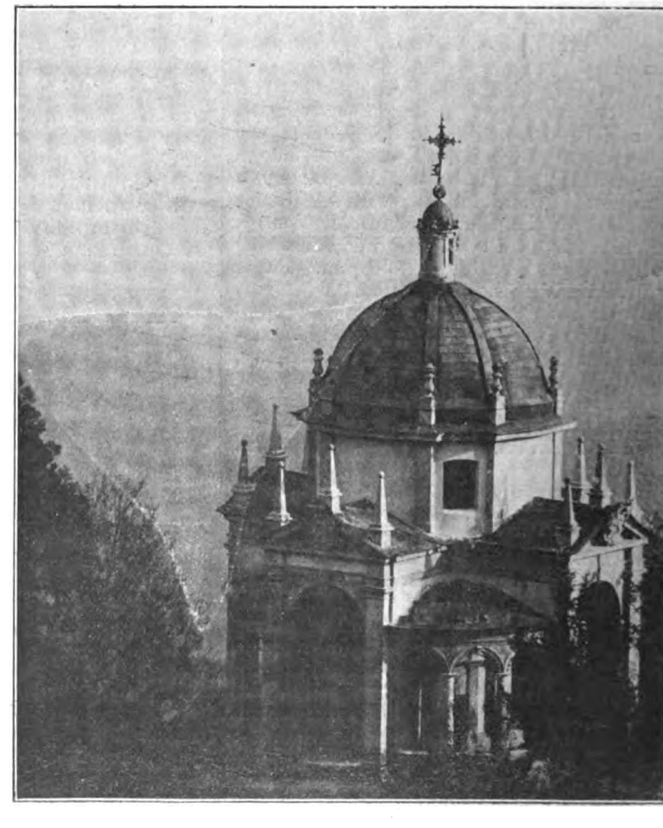


Fig. 5. Domed Chapel, Orta.

Digitized by Google

In beauty of colour and texture these roofs excel, if that were possible, the stone roofs of the Cotswolds, and to one looking down from the Sacro Monte upon the huddled houses of Varallo, the little town seems clothed in mouse-coloured velvet, with an occasional patch of tiling to give the effect of rose-coloured *revers*.

In the erection of the chapels two systems of planning have been followed. The earlier were built upon a simple quadrilateral plan, divided by a screen into two compartments, the inner for the sculpture, and the outer for the accommodation of the pilgrims. In the later examples the entire space is given to the representation, and an external portico is attached to shelter the spectators, with grilled openings to the interior. The screen is often the most interesting part of the building. The upper part is usually glazed with nice old glass of pleasant tint and texture. Below is an oblong grille of carved wood (Fig. 1), the upper part sometimes canted to afford a comfortable view of the wall and ceiling paintings. These wooden lattices are a peculiar feature of Varallo, as the iron grilles are of Orta.

The highest point is a rounded knoll, the summit of which is occupied by the chapel of the Transfiguration (Fig. 2). This is a huge plain drum 40 ft. in diameter and of considerable height; in itself bald and unsatisfying. But note firstly the charming contrast afforded by the porch with its delicate coupled columns and interesting entablature; and secondly, it should be borne in mind that these chapels are not so much isolated objects as parts of a composition. The architects of the XVIIth century at their worst were usually good scene-painters, who thoroughly grasped the art of grouping and of producing striking effects. It was probably their feeling for scenic propriety which led them to adopt the circular or polygonal plan whenever they had to build a chapel on an eminence. Orta and Varese supply numerous examples of this preference.

The concluding chapels of the series are grouped together near the edge of the precipice overlooking the town, so as to form a sort of piazza. One side is occupied by the large church of the Assumption, the other three by a picturesque medley of chapels, cloisters, and loggias. The church has an intolerable modern façade, gaudy and pompous; in most unpleasing contrast to the quiet beauty of the rest.

Three large chapels, containing respectively the Nailing to the Cross, the Crucifixion, and the Deposition, form an important group in the south-east corner. They are raised partly on a lofty substructure, partly on the native rock. A loggia extends along the front, approached by a flight of steps at either end. The first and last contain notable works by G. d'Enrico. In the Crucifixion chapel both sculpture and paintings are by Ferrari. As you turn from this you are faced by the light colonnades of the Scala Santa (Fig. 3), an imitation for pilgrimage purposes of the Roman original, by which we may ascend to the upper cloister to enjoy another view over the piazza, and a wonderful outlook through the clairvoyées at the back up the valley of the Sesia, with Monte Rosa's snowy summit closing the distance.

Taken as a whole, the chapels of Varallo must be pronounced inferior in delicacy and refinement to the best of those at Orta, and in grandeur and scenic picturesqueness to those at Varese; but in simplicity, variety, and skilful grouping they are hard to beat. Moreover, and this is perhaps their greatest merit, they are entirely suited to their situation and use. The gentlemanly elegance of Orta and the pomposity of Varese would alike have been out of place amid these sunny Alpine pastures, where such beauty alone need be sought as comes from that harmonious blending with nature which ever rewards the unaffected use of those materials which come readiest to hand.

Orta.

The Sacro Monte of Varallo was, as I said, the first and for about 100 years the only thing of its kind. But in 1583 we have the first notice of a sanctuary being in contemplation at Orta. Here again the inspiration came from the Franciscan Order, and was probably suggested by a visit of S. Charles Borromeo to Orta on his return from Varallo. The single narrow street of which the little town of Orta consists runs along the shore of its lake, at the foot of a steep promontory which projects nearly halfway across the water. Its summit is occupied by the sanctuary. Here is a monastery and twenty chapels, standing in a sort of wood, intersected by grassy glades and commanding exquisite and everchanging views of lake and mountain. The entrance arch is approached by a cobbled path bordered by cropped limes. It is surmounted by a figure of S. Francis, in whose honour and to depict the scenes of whose life the chapels were erected.

The materials employed here are the same as at Varallo, namely, granite and plaster, but with the addition of a dark serpentine marble, which takes the finest detail, and is used with excellent effect for the smaller moulded members, as caps, bases, and architraves. The lay-out differs from that of Varallo, inasmuch as the chapels have been placed so as to get the best effect from each separate building, rather than with an eye to picturesqueness of grouping.

All the best chapels were erected between the years 1591 and 1630. Dr. Goldhardt—to whose pamphlet I am much indebted—discusses the authorship of these works, and attributes them on evidence which seems fairly conclusive to a Franciscan, Padre Cleto, of Novara. He draws attention to the significant fact that the style is old-fashioned, in fact, about a century behind the times; and suggests the inference that the designer was an amateur of Classic architecture, uninfluenced in the seclusion of the cloister by current movements and fashions, and this by no means to the detriment of his art.

In contrast with the sculptures at Varallo, the figure groups here are of no account: nor is the arrangement of the darkish interiors so well adapted for their display. But all the more worthy of attention is the outside treatment. Delicacy, economy of means—in many cases the cornices and other members are reduced to their most rudimentary forms—elegance of proportion, these are perhaps the most outstanding notes.

We now come to two more important chapels. They are both simple oblongs surrounded by colonnaded loggias, and it is interesting to observe how from very similar plans two utterly different buildings grow. The first, known as the Madonna of the Angels, from the trumpeting angels on the roof, is the most ornate of all. Owing to its position on the brow of the hill it was impossible to get a better view of the façade, which is charmingly composed, and for its date (1606) most refined in detail. The other chapel, No. 6, was built about ten years later. The fifteenth chapel, which has been so oddly connected with the name of Michelangelo, is one of those simple, inevitable, and masterly designs wherein consummate art lurks artfully concealed. The attribution of the authorship to the great Florentine master is, of course, worthless, except as evidence of traditional admiration. It is difficult to imagine anything more remote from the austere grandiosity of Michelangelo's

Fig. 4. The Octagon Chapel, Orta.

Fig. 6. Chapel at Varese.

Digitized by Google

manner than the Mozartian urbanity and grace of this little building.

We are now on the highest point of the Sacro Monte, and are, therefore, prepared to find, as at Varallo, a circular chapel. The plan is of the utmost simplicity—a plain drum surrounded by a peristyle of twelve slender Doric columns bearing semicircular arches. The stylobate is broken at the cardinal points by flights of steps for access to the ambulatory which is roofed with a lean-to. This plan is the earliest example (1597) of a central block surrounded by a portico, and exercised considerable influence upon the later chapels both here and at Varese. Henceforth all the more important ones display this feature.

The eighth chapel (Fig. 4) is obviously a variant upon the same theme, the octagon being taken as a basis instead of the circle. It is clear from the plan that the ambulatory involved the designer in sundry difficulties. The arches, if only eight in number, would become sprawling and ill-proportioned unless they could be carried to an extravagant height. The difficulty has been overcome by a similar device to that so often employed in the aisle of a Gothic apse, viz., by the division into alternate square and triangular spaces, producing thereby a sixteen-sided ambulatory.

In a small late building like this, by no means one of the best of its kind, one is surprised at the feeling for effect, the unerring knowledge and command of every device whereby the desired effect is produced, the freedom in handling difficulties. The squares I spoke of just now in the plan of the ambulatory are not squares, the sides incline inwards towards one another; that was dictated by the proportions of the arches (and an Italian mason is not one to bungle over the irregular vault thereby produced); nor are the faces from which the cross arches spring parallel; that gets over another difficulty; true, it lands you in a winding arch, but as that is only in plastered rubble nobody's bones are broken. By-and-by we shall see another way in which the difficulties of an octagon surrounded by an arcaded loggia were faced at Varese.

I have dwelt thus at length on the plan of this chapel because, in spite of certain signs of debasement, it is a fair example of the skill with which these obscure masons handled their "Renaissance box of bricks."

The next chapel is elliptical in plan—sure evidence of Baroque influence, and the porch seems stuck on.

Inside there is a good iron screen. There must have been a school of excellent smiths in this district. Almost every house in the town has a good iron balcony, and the neighbouring villages and churches are rich in ironwork, as well as the Sacro Monte itself. Even when the design is a little riotous the workmanship is careful, and even precise.

The doorway from No. X. is of the same date as the entrance arch, and is not a bad example of the use of the black serpentine. It was interesting to find that the capitals are copied from an antique in the old church of S Giulio on the island. This chapel also has a fine grille, of which it was possible to photograph the central portion. One of the most charming structures here is the little well-house. The pedestals and caps are pentagonal, which is, I suppose, the only way of getting comfortably round an octagon.

Varese.

The town of Varese is situated on the verge of the plain of Lombardy. About three miles to the north, in the direction of the mountains, and some 400 ft. above the town, is the entrance of the Sacro Monte.

The general scheme is quite different from what we have seen before; the chapels are not grouped in a confined space, but follow a broad paved road which ascends in zig-zags along a rising ridge. A chapel is placed at each turn of the road, and intermediately wherever a long straight run occurs. The road is perhaps 2½ miles long, and is the main approach to the ancient hill town of S. Maria del Monte, which occupies the summit. The construction of the road was contemporary with that of the chapels, and no little skill and feeling is shown in its disposition and planning. Not only had it to follow the line of least resistance, so far as climbing the hill is concerned; but it is so schemed that the chapels show to the best advantage from below, and also provide the best points of view for the enjoyment of the landscape.

Again a Franciscan was the originator of the scheme, the execution of which was entrusted to the architect Bernascone, of Varese. There are fifteen chapels, in illustration of the mysteries of the Rosary, each group of five being separated from the next by an arch and fountain. With the exception of five late and unimportant buildings all are Bernascone's work, and show him to have been a man of considerable imaginative and inventive power. Though begun only ten years later than Orta, it is quite 100 years later in manner. If the chapels there were the work of a refined and gifted amateur, here they suggest the professional man, quite up-to-date and to all the tricks of the trade. A marked difference is observable at once in the colour of the buildings; we have exchanged the stone roofs and whitewash of the mountain valleys for the tiles and yellowish stucco of the plain. Granite is more sparingly used, and the increased use of stucco instead of stone for ornamental features gives a sort of coarseness that smacks of a declining art.

The plan of the first chapel is similar to two of those at Orta, viz., a colonnaded portico round three sides of an oblong cell. But here the elevations suggest a Classic temple. We now find for the first time view openings in the sides of the building as well as in front. In this case they are rather prettily treated.

The second chapel is insignificant, and at the first turn we come to No. III. Here importance is given to the side openings, which became regular transepts. Their treatment is, however, much more successful in the next chapel (Fig. 5), which is designed like a domed church on the plan of a Greek cross, the transepts and aisles being as it were turned inside out. The external division of the copper-covered dome into eight unequal segments is noteworthy; the wide divisions corresponding to the transepts, and the narrow to the interspaces. The undue width of the broader divisions is cunningly counteracted by the keel-like form given to them.

Immediately opposite this last is the most important building of the series. It is also the most complicated both in plan and design, but is a fine, masculine piece of work, which, as I found on my second visit to Varese, improves greatly upon further acquaintance. The transeptal form of plan is again adopted, in this case grafted upon an octagon (Fig.6). The transepts instead of being connected by arcades, are joined merely by balustrades, which play a curiously important part in the elevation, as you will see. At first sight it is impossible to believe that they are horizontal. Their raking lines seem to buttress the main portico with a studied effect of support, and cause the whole building to sit securely on the side of the slope. The illusion is increased by the want of parallelism between them and the main block, so that in perspective their lines vanish to different points. You will observe what excellent effect is obtained by tiling the cornices; how by this simple means a very strong line may be produced without unduly coarsening the mouldings.

At the next turn of the road the town on the mountain-top comes into view with something of a shock. The chapel of the Flagellation at this spot has certain good points; a life-size Pietà, most effectively placed over the portico, and some pretty plaster work in the vault. The road now ascends rapidly along the side of a deep valley to the Crucifixion chapel, with an interesting porch surmounted by a delicate pierced iron cross, designed to silhouette itself against the whiteness of the wall behind. The ironwork here is not quite up to the Orta level. It is often enriched with bronze ornaments which have acquired an exquisite patina. The plan of the Ascension chapel is interesting; an elongated octagon within and an ellipse without, to which is attached a large portico, a sumptuous piece of Baroque design.

The last chapel of Bernascone's is very simply planned.

"Ah, me! what perils do environ the man that meddles with" simplicity. It looks so inevitable, and is so full of pitfalls. The vaults of the ambulatory are barrels decreasing both in width and height inwards, sections of a cone, in fact; and the arches which separate them follow the lines of the pilasters from which they spring, so that an angle runs along the soffite, salient for half its circuit, and re-entering for the other half, and just disappearing at the apex.

But we are now at the end of our pilgrimage, which has been, I fear, a rather monotonous one. If what I have shown to-night should induce any of my hearers to visit these remarkable places, in autumn for choice, when the loveliness of the Italian hills is almost incredible, I am convinced that whatever his opinion of the merits of the architecture may be, his visit will not end in disappointment."

[The greater part of the numerous lantern illustrations, a few of which we have been able to reproduce here, were from photographs taken by Mr. Lumley Cator, who visited the sites in company with Mr. Eden.]

Mr. Theodore Fyfe, in proposing a vote of thanks to Mr. Eden, said the whole of the north of Italy was extraordinarily interesting, and something of the austerity of the Alps seemed to pervade it. Even the very small towns had a distinction of their own, and the structures seemed distinctive of the different places. There was a fine early Renaissance feeling in most of the architecture, and tradition called it the Bramante influence, and it certainly seemed more suggestive of Bramante than of Michelangelo. One could see painted waxworks together and appreciate them, and he agreed that the way to look at these things was from the point of view of stagework, influenced by religion; if looked at as religious decoration only they seemed grotesque; but they were remarkably fine work.

Mr. P. E. Newton, who accompanied Mr. Eden on his first journey to Orta, seconded the vote of thanks, and said the colour was really wonderful. The slate roofs were rather the colour of cippolino. Orta was a quiet place, where one could spend a delightful week or two; it was not thronged with steamers as Como and Maggiore were.

Mr. H. H. Statham said he had been much struck by the series of examples brought before them. What especially impressed one was what an endless place Italy was. They had seen a number of architectural erections which probably very few of them knew anything about, and it showed that, outside the well-known monuments of Italy, it was worth while going to the unknown places, and to look at what was to be seen. One point struck him in regard to the various chapels and the interesting and varied plans they showed; they suggested the advisability when formulating a plan, of considering how to treat it in superstructure. Mr. Eden had pointed out cases where the builders got into difficulties with the roofing in developing their plans.

Mr. Arthur Keen said that what struck him most was the great beauty of the detail of the places illustrated, as if the detail had been left to the fancy of the particular craftsman who was employed, without too

Digitized by Google

much control from the architect, and with most satisfactory results. They must all have felt that the architectural work shown in the buildings illustrated, excepting perhaps in the case of Varese, was of rather an amateurish kind—a good many good conceptions not well carried out; but the detail was of a delightful kind, especially the iron grilles and the carved work.

Mr. Gerald Horsley said he should like to ask Mr. Eden if he knew whether Ferrari designed any of the chapels referred to, or any other architectural buildings. It was known that he was the sculptor of several of those groups in terra-cotta which Mr. Eden had shown from Varallo, and he (Mr. Horsley) believed he painted the backgrounds in fresco on the walls of the chapel, and, as Mr. Eden said, he was a great *cinquecento* artist; but besides his sculpture and painting, was he the architect of any building?

The Chairman then put the vote of thanks to the meeting and it was heartily agreed to.

Mr. Eden, in reply, said he did not think that Ferrari acted as an architect. Certainly some of the other workers in terra-cotta who did the figures were also the architects of the buildings. One was the architect of the Scala Santa at Varallo, and of the larger chapels. Another did some of the big figures, and a third painted the background. He supposed that the best group of figures at Varallo and the most celebrated lot were in the Crucifixion Chapel, and the frescoes were by Ferrari. Of one sculptor employed it was recorded that he did such a number of chapels that he went mad, and one could understand that in doing some fifty or sixty of these chapels that that might be the fate of an artist; but in this case he recovered and did more work.

The Chairman announced that the next ordinary general meeting will be held on January 14. Paper by Mr. J. Starkie Gardner on "A Comparison Between English and Continental Ornamental Ironwork."

The meeting then concluded.

PICTURE EXHIBITIONS.

THE DOWDESWELL GALLERY.

THE series of drawings in illustration of "The Parables," by a French artist, M. Eugène Burnand, now on view at Messrs. Dowdeswell's Galleries, are of more than ordinary interest. They are drawings, apparently in *fusain*, to a pretty large scale, giving illustrations of the Parables, and show a great deal of power of expression and composition.

It is curious to contrast these with the comparatively tame and commonplace character of the large and highly-finished oil-painting, "The Way of Sorrow," by the same artist, which is exhibited in another room. It is not the first time one has noticed that an artist who exhibits great power and originality in black-and-white work seems unable to carry these qualities into the higher and more exacting art of oil-painting.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

THE *Bureau Annual* has been considerably enlarged, and comprises this year a full architect's diary and also an address register of the manufacturers who supply the various goods mentioned in the tabulated prices. The principle followed has been to take each trade in the usual order to be found in a bill of quantities, and set out in detail every class of material and fitting in that trade in three tables of cost, A, B, and C, corresponding to goods of low cost, medium, and higher. At a glance, therefore, can be seen the range of cost of every material and fitting.

The prices have been obtained from information supplied by and from the lists of manufacturers, and are virtually a condensation of the mass of price-lists and catalogues issued to architects.

On the opposite page to the prices will be found the name, address, and telephone number of the manufacturers who supply the various goods, or the reference number can be forwarded to the Bureau, when particulars of the desired goods at the cost named will be forwarded direct.

A meeting takes place this week (Friday) for the consideration of manufacturers' goods, with the end in view of distributing the approved circulars amongst architects. A number of goods will also be submitted to the Selection Committee for their approval before placing them in the permanent exhibition of building materials and fittings, which is to be opened in the New Year.

Manufacturers exhibiting in the exhibition are required to have their goods in position by January 1, 1910.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Church of All Hallows, Barking.—The Local Government, Records, and Museums Committee reported as follows:—

"There has been brought to our notice a proposal of the Metropolitan and District Railway Companies to rebuild Mark-lane Station. The proposal includes a scheme to erect over what is now practically a ventilating opening, buildings to a height of from 26 ft. to 34 ft. As buildings of this height would seriously interfere with the view, from the north side, of All Hallows, Barking, which is an exceptionally fine specimen of XVth-century Gothic architecture, containing much fine woodcarving and many ancient monumental brasses, and one of the few churches that escaped the Great Fire of London, endeavours have been made to secure a restriction in height of the proposed buildings. At the instance of the Council certain modifications have been made in the plans which will lessen to some extent the obstruction to the view of the church, and we have caused a letter to be addressed to the Corporation of the City of London expressing the hope that it will take any action it can to secure an unrestricted view of the church."

Subway under Victoria-embankment.—The Improvements Committee recommended:—

"That, without the Council being in any way committed to the approval, in principle, of the proposal for the construction of a subway or subways under the Victoria-embankment, and pending such decision as the Council may hereafter come to as a result of the consideration of a further report by the Improvements Committee and of a report by the Finance Committee, application to Parliament in the session of 1910 for authority to construct a subway under Victoria-embankment in general accordance with the plan, be authorised."

The recommendation was agreed to.

The London Labour Clause.—The General Purposes Committee reported upon the employment of London labour, and mentioned that the question had arisen on many occasions. Hence it was desirable that there should be a standing order requiring that on all work for the Council executed within the county, preference should be given to London men. The Committee recommended that the standing order should be:—In every contract involving the employment of workmen in the county of London a clause shall be inserted to provide that when taking on workmen for the purpose of the work to be done under the contract, the contractor shall give preference to London men, that is, men usually employed in the county and resident within a radius of twenty miles from Charing Cross.

There was an amendment in the name of Mr. Simmons to the effect that:—"If wilful default is made, the name of the contractor will be placed on the list of persons from whom the Council will not accept tenders.

Mr. Dove said the reason for such a clause arose some years ago, when London men were looking on whilst provincial men were laying down electric tramways. It was only right that there should be a definite understanding that for London work the Council should insist upon the employment of London men. There would be no trouble in ascertaining whether the clause was being observed by the contractors.

Mr. Simmons declared that the clause would do much to stop the influx of provincial labour. There was a plentiful supply of labour for the contractors to call upon in London.

The Hon. W. R. Peel said they were trying to remedy a real evil. It was hard that London workmen should have to be out of work when provincial men came to London to do work. It was perfectly fair to contractors to request that they should give preference to London men. It was a difficult matter, he knew, but it was a good thing to get the contractors to co-operate with the Council in helping London men.

Mr. E. Speir said the result of this strange policy would end with the borough councils restricting their work to the men resident in the boroughs. The right policy was for free trade in labour. Free trade was far better for labour than protection.

Mr. Gordon said when a London contractor accepted a provincial job, the practice was to send down the chief men, and to engage the ordinary labour in the locality. And if a provincial contractor got a London contract, he went to the London labour market. Practical contractors knew that it was well to get men on the spot.

Mr. Robinson said that if the proposed standing order were adopted, all contractors would understand that in accepting contracts they would have to give preference to London men.

Mr. Jessop said the whole business was merely a vote-catching dodge. The clause would only lead to complications. In view of the establishment of employment bureaux there was no necessity to have any such clause.

Sir John McDougall said there were matters which might cause trouble. For example, the Council was about to give a contract for a main drain which would extend over four years. At what period would the point arise as to whether preference was given to London men, and when would the contractors be called to answer for any failure there might be to observe the clause?

Mr. Johnson said the whole business was merely discreditable electioneering tactics.

The recommendation of the Committee, as amended by Mr. Simmonds's amendment, was carried.

Hampton Court Palace.—It was reported by the General Purposes Committee that the First Commissioner of Works had requested that, in consequence of criticism of the arrangements in force for the protection of Hampton Court Palace in case of fire, the Chief Officer of the London Fire Brigade might be permitted to make an inspection of the palace at an early date with a view to his advising the First Commissioner in the matter. Although a large number of Government buildings were at present periodically inspected by the Chief Officer, it had not been the practice for buildings outside the county of London to be so inspected, but in view of the special character of Hampton Court Palace and its national importance, the Fire Brigade Committee were of opinion, and the general Purposes Committee concurred, that the request of the First Commissioner should, as a special case, be acceded to, and they recommended accordingly.

The recommendation was adopted *nem. con.*

Fire Brigade Station.—The Fire Brigade Committee recommended the acceptance of the tender of Messrs. Kerridge & Shaw, of Cambridge, amounting to 16,861*l.*, for the extension of the chief station of the fire brigade.

Attention was called to the fact that the second tender, of Messrs. Kirk & Randall, London, was only 16,866*l.*, and it was suggested that it would be well to spend another 5*l.* in order to give work for London men.

Under the circumstances, the Chairman of the Committee said he would take the matter back to consider the subject.

The Low-level Sewer.—The Main Drainage Committee recommended that the tender of Messrs. Griffiths & Co., 481,553*l.* 9s. 11d., be accepted for the construction of the southern low-level sewer. After a short debate the tender was accepted. It will be remembered that the matter was before the Council a few months ago, when a tender then recommended for acceptance was withdrawn, thus necessitating the new tenders now dealt with.

Mr. Easton mentioned that a clause would be inserted in the contract providing for the payment of 8d. per hour for night work.

Hoxton Schools.—The tender of Messrs. W. Johnson & Co., 32,650*l.*, was recommended for new schools on the Hoxton House site, for which the architect's estimate was 31,473*l.*

Mr. Johnson said that since the Works Department had been abolished, the contractors had taken advantage, and were now tendering above the architect's estimates.

Mr. Hunt replied that the Engineer and the Architect had recently made a revision in their schedule on which they based their estimates, and the result was now that possibly estimates might be lower than was the case previously.

The tender was accepted.

Having transacted other business the Council adjourned.

Digitized by Google

THE BUILDER

DECEMBER 18, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 12s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 11s. 2d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 13s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, DECEMBER 17.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. Alexander Davidson on "Chester." Illustrated. 8 p.m.

The Institution of Mechanical Engineers.—Mr. William Mason, of the University of Liverpool, on "Mild-Steel Tubes in Compression and under Combined Stress"; and Mr. C. A. M. Smith, B.Sc., East London College (University of London), on "Compound Stress Experiments." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. H. T. Tudsbery on "The Foundation and Construction of Dock Walls." 8 p.m.

SATURDAY, DECEMBER 18.

Institution of Civil Engineers.—Students' visit to the printing works of Messrs. Edward Lloyd, Ltd., Salisbury-square, E.C. 8.30 p.m.

TUESDAY, DECEMBER 21.

University Extension Guild (British Museum).—Lectures on "Ancient Architecture," by Mr. Banister Fletcher.—XII. "Theatres, Propylæa, Tombs, and Public Buildings of the Greeks." 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy."—X. 6 p.m.

Fifty Years Ago.

FROM THE *Builder* OF DECEMBER 17, 1859.

TRADES' UNIONS.

SIR,—Mr. G. Potter,[1] in his letter of last week, unreservedly states that, to ask the trades' unions to adopt rules against interfering with non-society men "is neither more nor less than asking trades' unions to become the endorsers and enforcers of the odious document."

Presuming that Mr. Potter fairly represents the unions, and that they wish to reserve their right to molest and interfere with non-society men, I see no alternative for the associated masters but to continue the "declaration."

The paper put forward by Lord St. Leonards is in substance precisely what I propose, viz., that the trade societies should conform to the spirit of the law, by abstaining from all interference with those who do not choose to be bound by their rules and practices. A MASTER BUILDER.

*** In the light of the present day and of recent legislation, comment on this could only be an irony.—ED.

THE *BUILDER* COMPETITION.

THE designs which have been sent in for our competition for a proposed treatment of the front of No. 9, Conduit-street will, by the kindness of the Council of the Architectural Association, be on view in the gallery at 18, Tufton-street from Monday to Friday next week, except on Tuesday morning, when the assessors will be engaged in examining the drawings and making their award.

OUR NEW YEAR'S NUMBER.

IN our New Year's number, which will be published on January 1, the plates (an extra number, as usual) will be devoted entirely to the illustration of the works of Mr. R. Norman Shaw, R.A.; chiefly from the fine drawings made by his own hand.

Illustrations.

THE GARDENS AT SOUTH STONEHAM HOUSE, HAMPSHIRE.

THESE gardens cover an area of about 7½ acres; 5¾ acres of which were meadowland, lying slightly below the surface-level of the River Itchen, and 1¾ acres of glebe land at a higher level, bounded by the tidal water of the old Monks River, a tributary of which also bounds one side of the low-lying land. The two divisions of land, which really form quite separate gardens, are divided from each other by the Monks River and a thick wood of fine chestnuts and elm trees surrounding a lake, lying to the right of the drawing.

The drawing illustrates the junction of the two portions of garden by a timber bridge over the Monks River and a path cut through the edge of the wood. The low-lying land which has come to be called the River Garden, has been drained and the banks holding back the Itchen and the tidal stream have been raised and solidified. Irrigation streams which ran all over this low land have been filled up, and the boggy places made as firm as possible.

A wide central path running from the centre of the glebe land, over the bridge shown, leads to the weather-boarded summer-house beyond, which forms the central feature of a wide-circled flower-border backed with poles and chains covered with climbing roses against a background of black poplars. At either end of this border stand small square gardens, enclosed in trellis-work and surrounded by weeping willows. Around one of these little squares has been formed a water channel, broken up by tiny square and circular pools forming a Bog Garden, fed by a sluice from the Itchen, and joining later into one stream which flows under a bridge and pergola to feed a small lake on the lawn, and finally drains at low tide into the tidal water. An arrangement of dams allows a quantity of water to flow from this lake into a separate system of water channels around a square sunk lawn, lying immediately beyond the wood and divided from the surrounding ground by raised banks and hedges.

Lying beyond this lawn is a slightly raised terrace path running at right angles to the main path, with flower borders and water channels, and linking up by means of bridges over the tidal water with both the Bog Garden and its corresponding features—the small flower garden surrounded by trellis—which opens into the chestnut avenue (seen on the left of the drawing).

The raised banks running entirely round this ground are used as turf walks, bordered by little water-courses, giving an opportunity of growing irises and flags, and also serving to catch any water finding its way over or through the banks in times of floods. The general intention was to treat as lawn only the portions enclosed by the circled flower border and to allow the remainder of the ground to form an immense bog garden, full of natural water plants and flowers, and framed by the turf walks by the river side.

The preliminary work in connexion with this part was carried out with great difficulty, between tides which covered the ground to a depth of 2 ft. to 3 ft., until the banks and drainage were completed.

The glebe land was terraced and divided into a large main Flower Garden, surrounded by a Spring Garden, a September Garden, and an Orange-coloured Garden—at changing levels—mostly with turf walks and wide borders, all planned on very simple lines, the whole being linked up to the existing gardens by the terrace shown in the foreground of the drawing.

The general contractor was Mr. H. Lawrence, of Bitterne Park, Southampton; the nurserymen were Messrs. Ware, Limited, of Feltham; the trellis for summer-house and Hopton wood fountains are by Messrs. White, of Pyghtle Works, Bedford.

The whole was designed and carried out under the superintendence of Mr. L. Rome Guthrie, architect, and forms a very interesting and useful example of the architectural treatment of garden ground, and the formation of an artistic design out of previously untreated land.

NEW PREMISES, Nos. 308-320, OXFORD-STREET.

THIS building, which has been erected in four separate sections, has been modelled after careful study of numerous large trade buildings in Paris, Vienna, and Berlin, the planning being adapted to the latest needs of London. There are lofty, well-lighted and well-ventilated shopping floors provided on the basement, ground, first and second floors, and a special feature is the large open central well through the first and second floors surmounted by a lantern light glazed with fire-resisting glass.

The inevitable plate glass shop fronts have been forced into prominence, for Oxford-street has not yet fully learnt that good architecture will recoup reasonably for some loss of plate glass.

The building has been faced with Greek Pentelikon marble relieved by Greek Cippolino marble columns and pilasters, but even these classic materials will not withstand the London atmosphere without periodical cleaning and polishing.

The carving has been executed by Mr. C. H. Mabey.

The general construction is largely carried out with steel framework, including numerous solid steel columns to carry the heavy concentrated loads over long spans.

The large central and angle entrances with the island show-case are special features which afford access to the main shops, at the back of which are three passenger-lifts, and a winding staircase extending from the basement to the second floor, which is constructed in reinforced concrete covered with Austrian oak and enclosed with wrought-iron balustrading. This staircase withstood a test of 60 tons of lead pigs which were spread all over it for two days, and produced a deflection of about $\frac{1}{10}$th part of an inch.

On the second floor is a large and rather luxurious restaurant panelled in oak with several low-relief modelled panels, by Mr. Brook Hitch, finished in old ivory and representing Harvest, Commerce, Industry, Science and Trade. On this floor are also a ladies' lounge and a gentlemen's smoking-room, whilst on the floors above are the large kitchen, the staff dining-rooms, etc.

In addition to the principal staircase there are four London County Council fire-escape staircases required under the Act of 1905.

Digitized by Google

The staff and trades entrance is from Chapel-place, where the elevation is faced with Portland stone and Crowborough bricks, with quoins in Lawrence's red bricks; near this entrance is a service-lift to supply the kitchen, etc.

The basement is connected with the old eastern block by two subways built under Old Cavendish-street, and the cash bureau is located here, to which all the pneumatic cash tubes are connected from numerous stations throughout the building.

In the sub-basement are placed fur stores, strong room, electric switch-room and boiler-room containing two large horizontal boilers for working the cooking plant and heating the building by accelerated low-pressure hot water. There are fixed here the ozoniser, fan, cleansing-screen, and large ducts for ventilating throughout by ozonised air. There is also on this floor the electric suction plant for working the cash tubes.

Most of the joinery in the building is Austrian oak, the floors are steel and concrete covered with oak and pitch-pine wood blocks, and the ceilings generally are fibrous plaster. The subsoil is gravel, but water was tapped, and a complete system of Seyssel asphalting horizontally and vertically was carried out.

There are two glissoires or spiral shoots provided to convey the parcels from all the floors to the basement, where they are discharged on to a parcel-transporter, which is a continuous moving belt worked by electric motors, and thus the parcels are conveyed and discharged in the old eastern block upon a large revolving-table, where they are sorted and rapidly despatched.

The electric lighting is chiefly by arc-lamps, and sprinklers and other fire-extinguishing appliances are fitted throughout.

The builders for the first section were Messrs. Howard & Co.; for the other three sections, Mr. C. F. Kearley.

Mr. John Murray is the architect.

DESIGNS FOR SIMPLE LEADED GLASS.

THESE are executed designs for the stained and leaded glass in windows, screens, doors, staircase and board-room of the Cardiff Channel Dry Dock and Pontoon Company's new offices at Cardiff Docks. The work was executed under Mr. W. H. Scott, architect for the managing director of the company.

The glass employed was entirely Norman slabs and English antique glass of fine quality, with heavy leading.

WALTER H. CAMM.

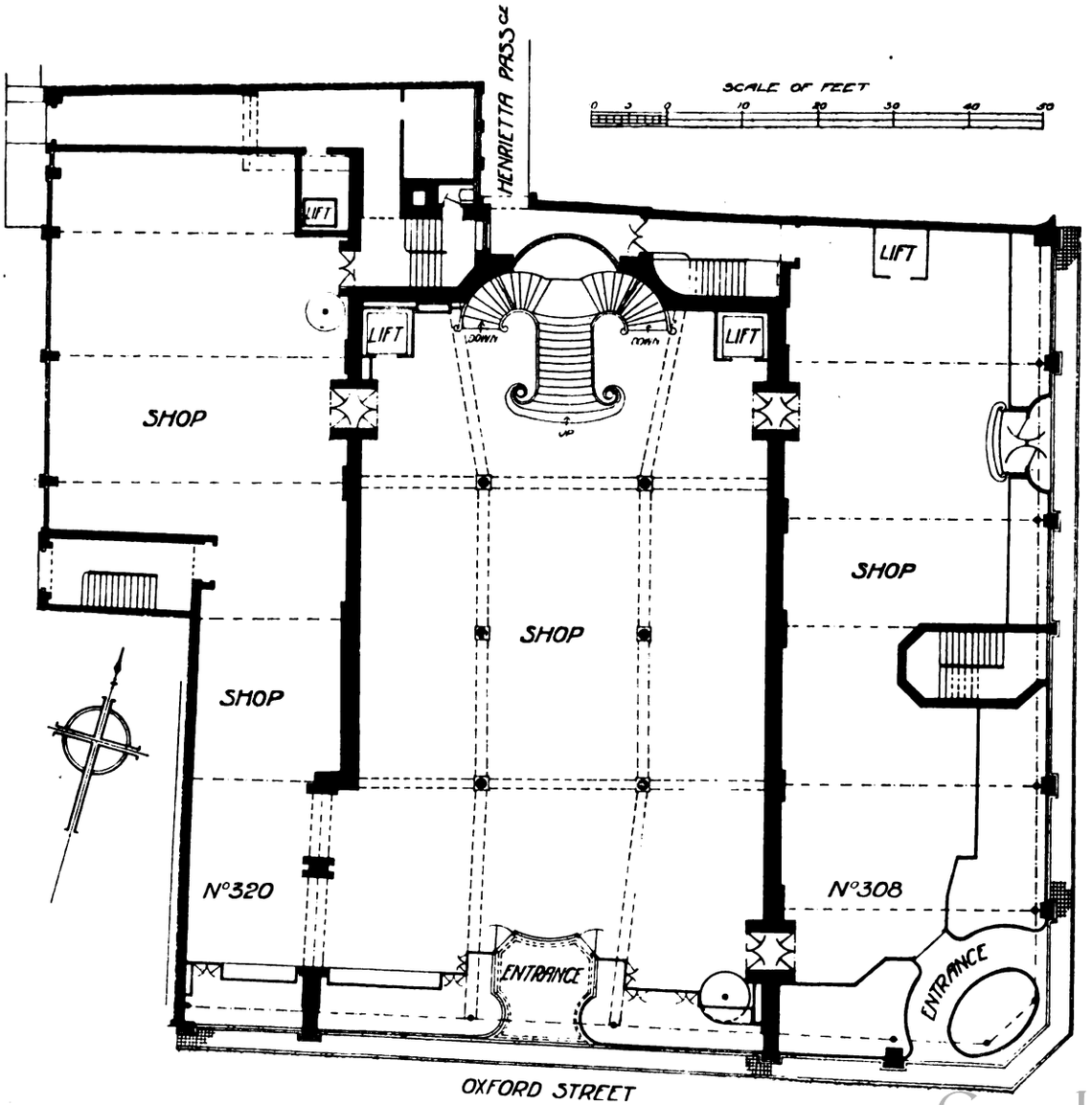
THE SOCIETY OF ARCHITECTS: TOWN PLANNING.

A MEETING of the Society of Architects was held on Thursday last week at Staple Inn-buildings (South), Holborn, W.C., Mr. G. E. Bond, J.P., President, in the chair.

The minutes having been read and confirmed, the following gentlemen were elected, *i.e.*, as hon. member, Sir William van Hulsteyn, Kt., M.L.A., Johannesburg; as members, Messrs. J. C. Broderick, Montreal, Canada; G. Coles, Leytonstone; W. A. Cornell, Wimbledon; A. H. Johnson, Winchester; H. Slicer, Peckham; S. B. Williams, Cardiff; and W. G. Williams, Bangor. There were also four elections to the Studentship class.

Mr. Raymond Unwin then read a paper on "Town Planning," of which the following is an abstract:—

Mr. Unwin said that the town planning movement, culminating, as it had just done, in the passing of an Act conferring powers upon municipal bodies to lay out the plans of their towns in advance, and to make, at any rate, a beginning of treating their towns as large units to be considered as a whole with some foresight, called upon their profession especially to remember that the whole was greater than the part. They must begin to think in streets, in districts, and in whole cities, and henceforth to regard their buildings not so much as isolated efforts, but as units in a larger whole. Town planning, though in this country almost an unknown and forgotten art to-day, has been practised in all ages and in many parts of the world, and town plans, when examined, would be found to show an almost infinite degree of variety and individuality. The modern period of town planning had already passed through several phases of development in other countries, noticeably in Germany. In the plan of Cologne they saw town planning applied to the extension of an existing town. This plan illustrated also the change in the character of German town planning. In the centre were the irregular street lines, characteristic of the mediæval town, with a few more modern roads resulting from improvement schemes. In the zone immediately outside this area, which was set at liberty by the extension of the fortification lines during the last century,



New Premises, Oxford-street. Plan.

Digitized by Google

they saw the geometrical type of planning. Cologne had again outgrown its line of fortifications, and the town was now developing suburbs all round, planned by the municipality far ahead of the development; but the geometrical pattern work had been displaced by more flowing lines, showing a marked reaction from the rigidity of the former manner. The influence of Camillo Sitte in Germany, Austria, and the central European countries generally had resulted in a further development of the curvilinear and irregular style. The plan for the extension of the little town of Kufstein was one of the best examples of the most modern style of German work, in which the town planner concentrated his main attention on the building up of picturesque street pictures. The plan of Marienburg was a good example of a combination of the two styles of planning, certain straight thoroughfares giving a sense of framework to the town plan, while the details were filled in with the irregular streets, planned to produce the picturesque groups of buildings so characteristic of the modern German school.

Here in England, where we were about to take up this new art of town design, it behoved us to study very carefully all that had been done before. We had the great advantage of being able to profit by the experiments in different styles of work that had been carried out on the Continent during the last fifty years. We had in this country scraps of two traditions in town planning. There was the regular and symmetrical work characteristic of the Renaissance period, when for a while large schemes were grasped and sometimes carried out; and we found in Bournemouth, Buxton, Eastbourne, and some other towns that had grown up mainly on the property of one great land owner, town plans worked out under the influence of the landscape school of gardeners, consisting of flowing so-called natural lines, but, generally speaking, lacking in any large grasp or any sense of wholeness in the completed plan. It was of the greatest importance that we should, in this country, not make up our minds too hurriedly, as to one style or the other, until we have pretty thoroughly grasped the advantages of both, and the reasons which have led to the adoption of one or the other. The problem was how to weld together into one harmonious whole the undulating surface and irregular features of our country and the definite lines and ordered arrangement characteristic of good design. As illustrating this, he would like to contrast two cities.

The first was the peasants' city of Rothenburg, a unique example of unspoiled mediæval picturesqueness, the character of which sprung not from the possession of supremely beautiful buildings, but from the fact that in the whole of the town there is hardly one that does not show a simple comely beauty. It had, in a marked degree, both scale and framework. Its Market Place with the group of smaller places linking it up with the great Church, the Rathhaus, and the Herrngasse, the great street in which the patricians of the town once lived, formed together a centre finely dominating the town, while the roads leading to the main gateways were also marked out in importance by their comparative width and directness. Almost every building in the town, including the Rathhaus and the church, is roofed with the beautiful handmade Rothenburg tile of a quiet brown colour. The buildings are either built of stone, the prevailing tones of which are cream and light brown, or more frequently are plastered and treated with limewash of very similar tones. Contrast with Rothenburg the city of Karlsruhe, where the Ducal Palace formed the central feature of the town, from which a series of streets radiated to all parts of the town, so planned that this tower was the terminal feature in one direction along all these streets. On the other side there was an extensive forest, through which straight alleys have been cut, radiating from this tower in like manner. The Market Place is formed on the axis line of the town, which coincides with the central radiating street. Before the Schloss was a large fan-shaped garden place having the front of the Schloss at the apex with stable buildings, barracks, residences, and a theatre, forming the radiating flanks, while round the circular arc was built up a colonnaded crescent of houses, cut at intervals by the narrow radiating streets. It would be difficult to imagine a greater contrast than that between the style of this town and that of Rothenburg. The straight, formal lines of the streets, the geometrically shaped places, the axial treatment of the Market Place, the regular, horizontal skylines, and the entire absence of gables, with the symmetrical and regular treatment of the façades, all emphasise this difference, and yet there was the same feeling of unity of effect, the same sense of scale and framework leading up to a definite town centre that marked the more picturesque and irregular Rothenburg. The site of Karlsruhe was a level plain, having apparently nothing of natural undulation or feature within the area of the town, which needed to be much considered by the planner, so that probably in this case the unusual degree of formality of treatment was justified by the conditions. The faults of the plan were the excessive and monotonous insistence of the somewhat uninteresting power of the Schloss, the large number of acute angled corners and the uncomfortable shape of many of the places, road junctions, and building plots formed. Its virtues were the definite leading up to a centre, and the interest which each part derived from being a portion of a definite scheme, the easy communication from point to point, and the simplicity of the general framework, which was easily grasped.

Bearing in mind the comparison made of the formal XVIIIth century city with the informal XIVth century one, let them consider in greater detail some of the component parts. We have seen that both plans are alike characterised by an extensive use of places of various sizes and forms. The special characteristic of the mediæval place is the sense of enclosure and the completed frame of buildings which is produced; the shape was indefinite. In the Market Place at Nuremburg, for example, although at first sight there appear to be many roads leading in to the place, and forming breaks in the buildings, it was remarkable how the arrangement of these did, in reality, leave the framework of buildings unbroken. Contrast with this, the modern Max Josef Platz, Munich, where the long straight vista at the side of the theatre broke up the frame of the buildings and gradually destroys any sense of enclosure in this part of the place. The importance of linking up the buildings and producing to some extent a continuity of frame, was, however, apparently recognised in the laying out of the fine group of Renaissance places at Nancy. Where the angles or ends would otherwise have been open, they had been to some extent screened by wrought-iron railings, masses of foliage and semicircular loggie or arched gateways. But the importance of enclosure and linking up of the buildings had not always been recognised in the planning of architectural places, particularly those resulting from what may perhaps be called axial treatment.

The Karolinen Platz, Munich, was another example of the treatment of a multiple road junction, with a central feature on the axis of the various roads, and with definite architectural treatment of the corners, but lacking any sense of enclosure. In such places one was not tempted to loiter: they were apt to be distinctly draughty.

From these, one naturally passed to consider places formed mainly for the purpose of facilitating traffic. Many examples of these might be found in Paris; at points where several roads converge there was usually formed some open space to facilitate the circulation of traffic, and to secure some degree of architectural treatment to the corners of the various streets; the Place de L'Etoile was the largest of these. The German School of Modern Town Planners believe that as far as possible multiple road junctions should be avoided, and each branch street was better brought singly into the main street. The French School of Town Planners considered it advisable to give long, straight, unbroken streets, converging at certain points where the traffic can rearrange itself all at one point, and pass off in many directions.

In connexion with the new St. Paul's Bridge, which will throw a considerable stream of north and south traffic across the already somewhat congested stream of east to west traffic, at the junction of Newgate-street and Cheapside, the authorities should consider whether it would not be worth while to test the circulatory system here.

Not the least interesting type of place is one which they might call the garden place, because it was the one which was likely perhaps to be of most use to us in the planning of town extensions, the part of town planning for which alone powers were given under the new Town Planning Act. The Schloss Platz, Stuttgart, might be taken as a good example of this type, and, in passing, we may use the example also to indicate in some degree the style of garden treatment suitable to places. The breaking up of places with architectural balustrades, fountains, bandstands, etc., in the great majority of cases was a mistake. Such features had their place, but they should never be allowed to interfere with the general breadth and simplicity of effect which is so necessary, and which forms so much more dignified a foreground for the buildings surrounding the place. A plain sweep of grass, crossed perhaps by paved footways where necessary for pedestrians, following the simplest possible lines, with avenues or masses of tree foliage, when properly placed, was generally an effective treatment, and the money spent in so-called architectural embellishments would be usually better devoted to masking one of the street entrances with a gateway arch. Where there was difference in level in the place, broad terraces with balustraded walls enabling portions of the ground to be levelled, might add greatly to the effect. But in garden places, as in gardens, it was necessary to be very clear as to the effect aimed at, and to be very cautious about introducing any mere embellishments which did not form part of a scheme definitely thought out to enhance that particular effect.

Much that had been said of places will apply to streets also. The building up of street pictures was, indeed, a fascinating art, giving scope for endless variety of treatment. When it is desired to provide a route from one point to another, and no obstacle existed nor do the contours of the ground suggest any deviation, the obvious course would seem to be to adopt the straight line. The advantages of the straight street were that it lent itself to the production of vistas, that where suitable terminal buildings can be provided at distances not too great, these buildings could be very well seen, also the straight street afforded conveninent building sites, and all the many conduits, tramways, etc., which formed part of the engineering work of a modern town street, are more easily laid in straight lines. The disadvantage of the straight street was that it was liable to become monotonous. The Rue Soufflot, in Paris, leading up to the Pantheon, was a good example, in which the terminal feature was of sufficient importance and interest. The length of the street was not great, and the whole forms a dignified and beautiful street picture. But where a considerable terminal feature is lacking, and where the length of the street is great, the long converging lines of windows, cornices, etc., became not only uninteresting, but wearisome. The advantages of the curved street were that it could be more readily adapted to the usually undulating surface

Digitized by Google

of our sites, and that there naturally sprung up along it an ever-varying street picture. In Oxford High-street it would be found that the concave side of the street was the one that chiefly added interest and variety to the picture, and the curved street was apt to lose on its convex side in proportion to the gain on the concave. But it must not be supposed that a beautiful result necessarily followed from a curved street; there must be sufficient unity of effect and emphasis at the right points. There was ample place in our town plans both for curved and straight streets, but their use should be governed by some definite purpose, and some definite effect in each should be aimed at so that we may neither carelessly continue our straight lines regardless of contours, nor imagine that we shall get a good effect by adopting aimless wiggles, merely for the purpose of avoiding straightness.

In the actual planning of roads and streets we could not think only of the architectural effect to be produced. Rather, we must first think of the utilitarian purpose that the street has to serve, and find in each case such a treatment as will within the prescribed limits afford an opportunity for beautiful architectural expression of these particular requirements. Under the new Town Planning Act it was in the ever-growing residential areas around our towns that the chief opportunity would be afforded. Centres of considerable magnitude and having buildings of fair importance will need to be provided, where whole new suburbs are growing up on the outskirts of towns; and to these the principles which they had been gleaning from the examples of different styles and periods would be as applicable as they are to those central portions of towns which are not affected by the new Act. But in all streets alike, whether residential or otherwise, they must consider the total effect first, and the individual buildings as units contributing to that total effect. Much may be done by the careful designing of the building line to give to each street some definite character and unity, and this may be further emphasised by the adoption of definite building materials for definite streets or areas, a common roofing material being of itself enough to give a considerable degree of unity to a district.

He wished to suggest that fine city building, which was, after all, the end and aim of the art of town planning, was essentially a co-operative art, and, indeed, the art of architecture itself was very much more a co-operative art than many people seemed to think. It was more and more necessary to bring to bear upon even our individual buildings types of skill and ability seldom all united in one man, and our offices were really much in the nature of guilds turning out work which was the result of a high degree of co-operation between the principal and the assistants working with him. In the same manner, fine city building could only result from a high degree of co-operation between all the architects working on the individual buildings. Something might be done on limited areas and on private estates, as at Bedford Park or Hampstead, for example, to produce unity of effect by bringing all the buildings under the controlling influence of the ideas of one man, whose attention was centred on the whole effect, rather than on the individual buildings; but these were, after all, makeshift methods. Art was not a thing easily to be controlled, and unity of effect in a whole town could only be expected when the whole of its architects were joined together by some common aim, some common appreciation of the whole effect which was being worked up to.

Mr. Ellis Marsland, in proposing a vote of thanks, said he thought that one of the finest suggestions for town planning was the existing arrangement of the city of Vienna, which was a modern town grafted on to what was there before. Such must be the case to a large extent in England, for there were few opportunities of designing a new town, and they would have to develop towns something after the manner in which Vienna had been developed. The lecturer had spoken of a sense of enclosure in places; he did not think the idea of a platz should be a sense of enclosure—at any rate in their larger towns; but rather that they should be designed with a view of facilitating the traffic at congested places and for linking up streets from one part of the town to another.

Mr. E. C. P. Monson seconded the vote of thanks, and said it was necessary in preparing a scheme for the housing of the working or middle classes that they should have good healthy homes built on hygienic methods and regularly appointed, so that they got the very best for their money on the cheapest possible terms.

Mr. F. Litchfield (Secretary, Co-Partnership Tenants, Ltd.) said, as to garden cities, one difficulty was to get people to subscribe the money necessary for such schemes. As to architects not all agreeing with what had been done at Hampstead, he would suggest that those architects should meet together and formulate some scheme for a garden suburb, improving upon what had already been done. To bring about a better state of housing they wanted about three million houses, and of the Government three hundred million pounds, of which architects would get their share. They relied upon architects to help forward the movement by properly studying the question and dropping the individualism which had existed in the past, and also by forming great co-partnership societies. They wanted in the next seven years or so to have at least ten such places as the Hampstead Garden Suburb built on the edge of London. He thought that the new means of transit were going to reform London.

Mr. Stewart said he thought that surveyors, from their greater experience in dealing with large areas, were better fitted than architects to take an active interest in the matter, as an architect's work was usually confined to individual buildings.

Mr. F. S. Chesterton said the danger of individuality was great, and an architect would feel some resentment in being ordered to build such and such a house here and such a one there.

The President put the vote of thanks to the meeting, and it was heartily agreed to.

Mr. Unwin, in reply, said, as to Mr. Stewart's remarks, he thought it was a case where architect and surveyor should both work in co-operation. The particular branches of the work which fell to the engineer and the surveyor were branches which could be scientifically determined, and formed part of the conditions within which the artistic creation must work. He regarded every town plan as primarily an artistic creation. Each had to work within his limits. The surveyor might decide the levels, contours, and so on, but to get real architectural expression in their streets they must leave the architect complete freedom, because although there were exceptional men in the engineering and surveying professions, the architect's combination of training taught him how to visualise a street picture and to realise what groups of buildings growing up along certain lines really meant. Seen about a town were groups and masses of buildings, distribution of buildings, building lines and building skylines, and that was why he pointed out the importance of first plotting out their buildings, when they would probably be able to work in their street lines and build up a very much better picture. He agreed that there was a serious danger of loss of individuality, against which they must very carefully guard, but he did not think that was a sufficient reason for not going on with the work. What they had to do was to define the limits within which individuality might work. It was only a question of time, co-operation, and good feeling between the individual architect and the town planning architect for good results to be obtained.

The meeting then terminated.

MAGAZINES AND REVIEWS.

In the *Art Journal* Mr. C. O. Murray writes on "A Spanish Sketching Ground," this being the curious old town of Pasajes, on the northern coast of Spain, with a double name, one side of the town being called San Juan, the other San Pedro. As to its interest as a sketching ground, in an architectural sense more especially, Mr. Murray's sketches leave no doubt. So much has been sketched everywhere, that a new and picturesque town is a godsend. Mr. Hooper continues his article on "Coffers, Chests, and Caskets." A wrought and pierced steel one (French) is an unusual example, but not very beautiful; a box covered with needlework (German) is another rather out-of-the-way piece of coffer design. But the Italian examples keep the lead, in refinement and suitability of treatment. In "Nature Study with the Camera," by Mr. A. L. Baldry, the author admits that theories as to the extent to which photography may be regarded and treated as an art have no place in nature studies, the object of which is accuracy—exactness of representation; a more rational use of photography than the effort to make photographs look like pictures by special manipulation; an effort, besides, never really successful.

The most interesting article in the *Burlington Magazine* is that by Mr. Paul Lafond on Damian Forment, the Spanish sculptor of reredoses and other church art in the early Renaissance period, who appears to have been an opponent of Italian influence, and long studied to retain in his work especially Spanish character. Two of his rich and sumptuous altar-pieces, both from churches in Saragossa, are illustrated; magnificent work in regard to general effect at all events; the scale of the illustrations is too small to give any idea of the detail.

The *Architectural Record* (New York) is an unusually interesting number. "A Question of Public Architecture" is a criticism aroused by the accepted (and already commenced) design for the Education Building at Albany, in which the architects, Messrs. Palmer & Hornbostel, have adopted a columnar classicism as absolute as that of the Madeleine, against which Mr. Montgomery Schuyler, the author of the article, protests, and we think with reason, as an entirely backward step; a brilliant academic study, irrelevant to any needs of modern man, and which he regards as the outcome of the emphasis laid on pure classic design in the buildings of the Chicago Exhibition.

> "But the State cannot afford to repeat in Albany for a permanent purpose what was done in Chicago for a temporary purpose, by doing it in any other than a classical and monumental fashion. It seems that, owing to the natural discrepancy between the architect's ambition and the State's appropriation, and to bring the former within the latter, the design, as at present proposed and partly executed, contemplates the erection of the columns of the colonnade in drums of marble, but of the capitals in terra-cotta. Most clearly, that would disgrace the State."

Mr. F. S. Swales contributes an article on "The Influence of the Ecole des Beaux-Arts upon Recent Architecture in England," an influence which is perceptible to a certain extent, but is a good deal over-estimated in the article. Where this influence is most decidedly recognisable in London, it is in the buildings of a firm one of whom is a Frenchman, which is therefore hardly a case in point. "Impressions of Budapest," by Mr. Meyer, brings together a large number of illustrations of the architecture of this stately modern city. "A Novelty in Design for Leaded Glass," by Mr. Kenyon Cox, illustrates a method of making window designs in white or in monochrome glass, in which the lead joinings are worked so as to form a design as if drawn in line, the leads standing for what would be the lines in a pen-line drawing. The two designs

Digitized by Google

illustrated to show the effect, look very well, and the system is worth consideration.

The *Architektonische Rundschau* has an article on "Alte Stadttore"—old municipal towers, with a number of sketches of very interesting examples of this class of ancient building. There is a fine coloured plate of an old street in Leonberg, with a round tower in the foreground.

The most interesting thing in the *Berliner-Architekturwelt* is the bridge with classical columnar screens and approaches at Charlottenburg. The architect, Herr Schaede, has owed something to the Champs Elysées bridge at Paris; of course the work does not show the same refinement of detail as the French example, but it is stately and effective.

To the *Antiquary* Mr. J. Oxley contributes an article, with four illustrations, on the interesting building known as St. Bartholomew's Chapel, originally part of St. Bartholomew's Hospital, near Oxford, which has been turned into farm buildings, though it is said that the chapel itself is now to be treated for restoration to its original use. Mr. Charles Dawson's short additional notes on the restorations in the Bayeux tapestry are important as to some contested features in the restoration.

In *Concrete and Constructional Engineering* Dr. C. H. Desch gives the results of column and beam tests conducted for H.M. Office of Works in connexion with the General Post Office extension. Twelve columns were tested, ten of them reinforced by four longitudinal rods and transverse wire links, and two with lateral reinforcement of expanded metal, all the columns measuring 9 in. square by 72 in. long. The ultimate load for the ten columns varied from 85·2 to 107·5 tons, according to the distance apart of the ties, the highest results being obtained when the wires were 6½ in. apart throughout the greater part of the length and 3 in. apart near the ends. The two columns with expanded metal binding failed at 73·1 and 76 tons owing to spreading of the mesh. Taking the maximum resistance in each case, we have 3,000 lb. per square inch for the columns reinforced by rods and wire links, and 2,100 lb. per square inch for the columns with expanded metal binding. As the writer remarks, these results emphasise the importance of adequate lateral reinforcement for concrete columns.

In the *Illuminating Engineer* is published the presidential address of Professor S. P. Thompson to the Illuminating Engineering Society. The lighting of buildings, especially school buildings, is discussed in this address. We agree with much that Professor Thompson says on this subject, but it will require more than a few words of ridicule to satisfy us that the Board of Education regulation (1907) that skylights cannot be approved in schoolrooms or classrooms is foolish. The professor says that the regulation is "perfectly monstrous," and ought to be at once repealed. He says that for the textile industries it has been found that no method of lighting is so satisfactory as skylights constructed to receive light from the northern sky. In our opinion this fact does not prove that the provision of skylights is the best method of lighting schoolrooms.

The *Contemporary Review* contains an article by Mr. March Phillipps on "Gothic Architecture in Italy," of which the main object is to argue that Italian Gothic was not, and was not meant to be, a partial and unsatisfactory imitation of the northern styles, but was governed by the rationalising principle in the Italian mind, which desired breadth as well as height. The article is worth the attention of architectural critics, and there are some very good remarks in it; but it does do away with the fact that Italian Gothic is rather a falling between two stools—an assumption of Gothic style in detail without its leading and informing element. The fact seems to be that the classic type of architecture, in one form or another, was natural to the Italian mind, and the Gothic type was not, and was never satisfactorily treated in Italy. Mr. Phillipps introduces a new reasoning on the subject, a new point of view, but it hardly alters the facts.

The *Nineteenth Century* contains an article by Mr. E. McCurdy on "Leonardo da Vinci as Sculptor," no doubt prompted by the present controversy in regard to the wax bust, though there is no special reference made to that subject. There is a good deal of information given in regard to Leonardo's works in sculpture, and also as to expressed opinions on the subject. It is curious to note that he left on record a most decided opinion that painting was a more intellectual art than sculpture, and seems to have somewhat disliked the latter art also in consequence of the physical labour it involved, at a time when great sculptors hewed their own marble instead of having the hard work done for them from a clay model.

In the *Century* Mr. Robert Hichens, who so thoroughly understands the feeling of the East, writes a brilliant and picturesque article on "Baalbec, the Town of the Sun"; it is interesting to see the effect produced by these great ruins on the mind of a gifted writer who is not an architect, and who regards them from other than the purely architectural point of view. There is a fine chromolithograph illustration of the six columns of the Temple of the Sun as seen in the half light of an Oriental night. "The Song of the Stone Wall," by Miss Helen Keller, is a poem on the associations of beauty and interest connected with an ordinary stone wall and its materials and their geological history. It is the first time we have seen a wall treated in poetry, and the lines are worth reading. The author is, we presume, the lady who has so wonderfully fought against and overcome her natural affliction in being without either sight or hearing, a consideration which gives an added interest to the poem.

In *Scribner* Mr. Weitenkampf writes an article on "Some Women Etchers"—American women, we presume. Of the examples given the outline dry-points of two groups of mother and infant, by Miss Mary Cassatt, are the most remarkable; but there is a fine landscape etching by Mrs. Moran. Under "The Field of Art" Mr. Frank Fowler contributes a good article on "Portraits as Decoration," the main point of which is that portraits might be arranged and grouped so as to constitute a form of mural decoration instead of being placed on a wall separately and with no relation to the others or to the architecture. On this head he says:—

> "It is the custom of banks, hospitals, universities, schools of medicine, and public buildings such as city halls, state houses, and federal halls, to collect portraits of their representative leaders, whether known as presidents, directors, benefactors, or originators of measures which have marked them in some special way as friends of the institution or of the State. These individuals are commemorated frequently enough in these various organisations, by portraits that tend to keep their memory green. How are these portraits placed? Do they serve any æsthetic purpose? None whatever—but they may do so. Would not these buildings gain in dignity and beauty if the portraits were given a mural setting that contributed to the enrichment of the halls and chambers of the structure?"

As an example he gives a view of the Gallery of Apollo, at the Louvre, with the portraits framed in permanent panels in the wall design.

The *National Review* contains a very interesting article by Mr. Austin Dobson on the life and work of Madame Vigée Lebrun, the eminent French lady artist of the Revolution and Empire Period.

IMPROVEMENT SCHEME, MATLOCK BATH.—A special meeting of the Matlock Bath District Council was held recently to consider tenders for the erection of a kursaal and pump-room, to complete the 50,000*l.* improvement scheme carried out by Act of Parliament, including promenades, pavilion, concert hall, a pump-room for the development of the thermal mineral spring, and generally to bring the Spa up to date. A tender by Messrs. W. Ford & Sons, of Derby, was accepted at the sum of 8,694*l.*

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1909.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1909. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hackney, South.—Buildings on the southern side of Lea Bridge-road, Hackney (Messrs. S. Walker & Son for Mr. J. J. Griffiths and the Great Eastern (London) Motor Omnibus Company).—Consent.

Kensington, South.—Retention of a projecting sign in front of No. 9, Young-street, Kensington (Mr. J. W. Lawson).—Consent.

Kensington, South.—A conservatory over the porch at No. 13, Brechin-place, Kensington (Mr. F. E. Williams for Mrs. N. Harris).—Consent.

Lewisham.—Permission to retain a building on the western side of Lewisham-road, Lewisham, northward of No. 170 (Mr. A. Dixon for Messrs. Whitbread & Co., Ltd.).—Consent.

Lewisham.—A greenhouse in the grounds of Friern Lodge, on the southern side of Westwood Park, Forest Hill (W. Cooper, Ltd., for Mr. C. H. Wells).—Consent.

Marylebone, East.—An iron and glass hood in front of No. 84, Harley-street, St. Marylebone (Mr. C. W. Ferrier for Messrs. Higgs & Hill, Ltd.).—Consent.

Marylebone, East.—One-story buildings on the northern side of Wellington-place, and the eastern side of Wellington-road, St. Marylebone (Messrs. Wright & Co. for Mrs. E. Wright).—Refused.

Wandsworth.—Retention of a building on the south-western side of Rosendale-road, Wandsworth (Mr. A. Griswood).—Consent.

Width of Way.

Greenwich.—A one-story addition at the rear of No. 132, Trafalgar-road, Greenwich, at less than the prescribed distance from the centre of the roadway of Fenton-street (Mr. J. Rowland for Mr. J. Smith).—Consent.

Westminster.—A building on the eastern side of Wilfred-street, Westminster, southward of the Pineapple public-house, at less than the prescribed distance from the centre of the roadway of the street (Messrs. Barlow & Roberts).—Consent.

Line of Frontage and Construction.

Hackney, South.—The retention of two wood and iron sheds of a temporary character at No. 53, Chatsworth-road, Clapton, abutting upon the northern side of Glenarm-road (Mr. A. Demant for Mr. G. Beyer).—Consent.

Rotherhithe.—The construction of an iron gangway over the public way of Bermondsey-wall, Rotherhithe, at the premises of Messrs. C. Southwell & Co., Ltd. (Mr. W. T. Walker for Messrs. C. Southwell & Co., Ltd.).—Consent.

Width of Way, Frontage, and Construction.

Kensington, South.—An advertisement board on the forecourt of No. 6A, King-street, Kensington (Mr. F. E. Williams for Messrs. Derry & Toms).—Consent.

Width of Way and Space at Rear.

Whitechapel.—A building, to be inhabited by persons of the working class, upon a site on the eastern side of Glasshouse-street, Whitechapel, to abut also upon the northern side of Shorter's-rents (Mr. W. E. Wallis for the Governors of the Peabody Donation Fund).—Consent.

Formation of Streets, Width of Way, and Lines of Frontage.

St. George, Hanover-square.—Re-erection of Victoria District Railway Station buildings, to abut upon Victoria-street and Terminus-place, St. George, Hanover-square (Mr. G. Sherrin).—Consent.

Uniting of Buildings.

City of London.—The formation of openings on the first and third floor levels between Nos. 17 and 18, St. Paul's-churchyard, City (Messrs. North & Robin for Mr. W. Shepperd).—Consent.

City of London.—The uniting of Nos. 38 and 40, Golden-lane, with No. 22, Golden-lane, City, at the basement and ground floor levels (Messrs. J. Hamilton & Son for Messrs. Sutton & Co.).—Consent.

City of London.—The uniting of Nos. 6 and 8, Gresham-street, City, at the first and second floor levels (Messrs. Batt & Hart).—Consent.

Finsbury, East.—The retention and formation of openings in the division walls between (i.) Nos. 7 and 9, Old-street and a new warehouse at the rear, in the basement; (ii.) Nos. 7 and 9, Old-street and No. 15, Old-street, on the first, second, and third floors; and (iii.) No. 25, Old-street and a warehouse at the rear, in the basement and on the ground floor (Mr. H. O. Ellis for Messrs. R. Moreland & Son, Ltd.).—Consent.

Digitized by Google

Marylebone, East.—The formation of two openings larger than specified in the said section in the division wall between Nos. 83 and 84, Wells-street, St. Marylebone, such openings to be fitted with steel revolving shutters (Mr. A. Sykes).—Consent.

Strand.—The uniting of No. 126, Strand, and Devereux-chambers, at the second and third floor levels (Mr. P. Todd for Messrs. R. Twining & Co.).—Consent.

Whitechapel.—The uniting of Nos 68 and 70, Middlesex-street, Whitechapel (the Trustees of the late James Hartnoll).—Consent.

Architectural Societies.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

At a meeting of the Society last week, Mr. Butler Wilson delivered a lecture on "Cuthbert Brodrick," the architect of the Leeds Town Hall. In a comprehensive survey the lecturer touched the salient features of a remarkable career. Born at Kingston-upon-Hull in 1822, Brodrick was in 1837 articled with Mr. Lockwood, architect, of that town. On the expiration of his articles he visited the Continent for purposes of architectural study, and spent much time in Italy, whence he derived inspiration for his subsequent work. It was at Rome in 1844 that he first met the late Mr. H. B. Garling, who was, it appears, an intimate friend of Brodrick. Upon his return from his "grand tour" in 1845 he commenced practising on his own account, and in 1852 obtained the commission for the Philosophical and Literary Society's buildings in Hull, this being his first important work. In 1853 he was instructed to proceed with the plans for the town hall to be erected in Leeds, his design having been placed first by the assessor, Sir Chas. Barry, in a competition in which he defeated his late master, Lockwood. This building, although one of his earliest works, reflects, perhaps, more of his genius in its bold handling of the grand classic manner than any other, and it is noteworthy in that it has provided the *motif* for at least three other town halls—those of Bolton, Morley, and Portsmouth. Other examples of his work are the Leeds Corn Exchange and Institute—the latter a monumental treatment of a small front—Hull Town Hall, the Wells House on the Ilkley Moors, and the Scarborough Grand Hotel. With Barry, Street, Owen Jones, Penrose, Cockerell, and others, Brodrick was invited to submit designs in the ill-starred National Gallery Competition, while his design for a New Custom House at Bombay, to involve an outlay of 270,000*l.*, was placed first, a distinction for which he received 3,000*l.* from Lord Palmerston's Government, as the project was never realised. Elected a Fellow of the Royal Institute of British Architects in 1870, he became a member of the Council of that body in 1874. The lecture was illustrated by a series of eighty lantern slides and a collection of original drawings by Brodrick, many of which were exhibited for the first time.

The next general meeting of the Society will be held on Thursday, January 13, when Professor S. D. Adshead, of Liverpool University, will read a paper on "Town Planning."

NORTHERN ARCHITECTURAL ASSOCIATION.

At the second ordinary meeting of the session held on the 8th inst. Mr. John W. Simpson read a paper, entitled, "With Share and Mattock." "I 'a stubb'd Thurnaby waaste."—(Tennyson—"Northern Farmer.") In his introductory remarks Mr. Simpson said that these words of the Northern Farmer suggested so well the quiet, dull task which architects have to accomplish that he commended to those present the merits of the ploughshare and the hoe. "There has been and still remains," continued Mr. Simpson, "much waste land to 'stub'; ungenerous ground rendering slow return to the courageous labour which is ever breaking it to husbandry and keeping down the growth of evil weeds." Likening the everyday business of the profession to "Thurnaby waaste," and the task of the Royal Institute and allied societies to its "stubbing," Mr. Simpson dealt with some of the multifarious duties with which the Institute is charged on behalf of the profession, and reminded his hearers that much of the work of the committees and of the Council is necessarily done in private, and because of its quiet success is not much heard of. In his concluding remarks Mr. Simpson said, "The Royal Institute is not a trades union; it is not a weapon to use against our clients, but rather an instrument to encourage and confirm their confidence in us their advisers. The true question then for its members to ask, and indeed for all architects desiring more than their own selfish ends, is not 'What has the Institute done for me?' but 'What have I done for the Institute?'"

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

The work which is being carried on by the National Trust for Places of Historic Interest or Natural Beauty was described before the members of the Sheffield Society of Architects and Surveyors at the Sheffield University on the 10th inst. by Mr. Nigel Bond, M.A., Secretary of the Trust. He said that this country possessed a great mass of beautiful landscapes and beautiful architecture, but in diminishing quantity, and it was felt that in the interests of the nation that as much as possible should be done, without interfering unduly with other interests, to preserve that beauty. The Trust also stood for other interests besides the æsthetic and the architectural. There were existing many good examples of that continuity which showed how one event glided, so to speak, into another, and went forward without any great breaks. To preserve the evidences of that continuity could not fail to be of great educational value, as it enabled us better to judge the most important political issues which arose from time to time. It was important that historical buildings should be preserved to help us to remember and appreciate what had gone before, and understand it better. Hence the Trust was preserving not natural beauty alone, but also historical associations, and anything which tended to the development of historical knowledge. The Trust covered very wide ground. In fact, there was no æsthetic or intellectual interest which did not find sympathy in it. The views thrown on the screen included some Lake and Devon scenery.

EDINBURGH ARCHITECTURAL ASSOCIATION.

A meeting of the Edinburgh Architectural Association was held on the 8th inst., when Mr. F. Morley Fletcher, Director of the Edinburgh College of Art, delivered a lecture in the Association's Rooms, George-street, Mr. John Watson presiding. The subject of the lecture was "Materials and Treatment in Wall Decoration." The lecturer inquired into the reasons of the lack of any great modern school of wall decoration that would bear comparison with those of the great masters of the past, and suggested that the conditions of our climate and national life called for a different character of decoration, or that the reason might be simply that a proper technical method had not yet been found that would satisfy the conditions imposed by our humid climate and the impure atmosphere of our cities. He stated certain established principles, and emphasised the principle that however elaborate the enrichment of a design might be the sense of illusion should never be given to an extent that would appear to destroy the flat surface of the wall. He described and compared the methods of modern decoration as shown in the decoration of the Pantheon in Paris, the Boston Library, the lunettes by Lord Leighton at South Kensington, and the decorations carried out in Edinburgh by Mrs. Traquair. Some examples of the modern revival of fresco painting were shown and criticised by the lecturer, who said their element of failure was their inability to resist the dangers of our climate by reason of their exposed surface, and their liability to decomposition owing to the acidity of a city atmosphere. He stated that Professor Church, in examining the exterior limestone of St. Paul's Cathedral, found the limestone to be changed to sulphate of lime to a depth of ¾ in. by the action of sulphurous acid in air and rain. In recommending as an experimental method an impervious ground of zinc white, and the complete protection of the painted surface by means of varnish and a renewable coating of wax, as more suitable than fresco to our climate and conditions, he emphasised the necessity for retaining and using the luminous power of the wall and for avoiding loaded lights. Examples of classic work were shown and compared with modern work of various types, by means of lantern slides, and other reproductions of wall decoration.—On the motion of Professor Baldwin Brown, seconded by Mr. W. T. Oldrieve, Mr. Morley Fletcher was awarded a vote of thanks for his address.

ABERDEEN ARCHITECTURAL ASSOCIATION.

The fourth ordinary meeting of the Association was held in the Northern Arts Club on Saturday last, Mr. J. B. Nicol, President, in the chair. Mr. Hugh R. Barr gave a lecture upon "Reinforced Concrete." He reviewed the characteristics of the principal materials used in making concrete, and showed by means of tables how the strength of the concrete depended upon the choice of suitable materials and the selection of suitable proportions. The strength of concrete in compression, tension, shearing and adhesion was considered, and the safe stresses were stated. The influence of the amount of water used in mixing, and of the thoroughness of the ramming was then dealt with, and the necessity of thorough care and rigid inspection was emphasised. The lecturer then referred to the properties of steel, and showed the advantages of combining concrete and steel in the form of reinforced concrete. The nature of the stresses in beams and cantilevers was next considered, and diagrams were shown of the bending moments, shearing forces, and the intensities of the tensile and compressive forces. This led up to the necessity for reinforcing plain concrete and to the usual methods of placing the reinforcements in beams, the various ways in which a reinforced concrete beam may fail being referred to. The second portion of the lecture described some half a dozen well-known systems of reinforcement. The lecturer divided these into systems, such as the Hennebique, Considère, and Coignet which use ordinary plain rods, and systems using reinforcement of a special section of which the Kahn, the patent Indented Bar, and the expanded metal systems are examples. Each of these systems was illustrated by means of numerous lantern slides, showing the peculiarities of each, and numerous examples of structures which have been erected.

The President announced that the Sketch Book Committee, of which Mr. George G. Irvine was editor, had at last concluded its labours, and the Sketch Book had become an actual fact. Mr. Irvine showed the proof copy, and great satisfaction was expressed with the contents and appearance of the book.

NOTTINGHAM ARCHITECTURAL SOCIETY.

The first meeting of the Designing and Discussion Club connected with this Society was held on Tuesday evening, the 14th inst., at the Society's Room; the President, Mr. A. Ernest Heazell, in the chair. The subject set by the visitor, Mr. W. R. Gleave, was "A Design for Tea-Rooms in a County Market Town." After the criticism a discussion, in which the students took part, followed.

Digitized by Google

THE ROYAL SANITARY INSTITUTE.

A MEETING of the Royal Sanitary Institute was held on the 8th inst. at No. 90, Buckingham Palace-road, when a discussion took place on "The Collection and Disposal of House Refuse," Mr. H. Percy Boulnois, M.Inst.C.E., presiding.

Mr. J. S. Brodie, Borough Engineer, Blackpool, who opened the discussion, referred to the importance of the subject and to the legal powers in existence, remarking that there was cause for satisfaction in respect of the powers the Legislature had conferred upon them. As to the nature of house refuse, he said that the cost to the authority of removing offensive matter was insignificant compared with the advantages to the community of rapid and efficient removal, and he was convinced that public authorities would find it ultimately a financial advantage to do much more in this matter than the mere letter of the law might require them to do, and that most, if not all, the miscellaneous articles which found their way into the dustbin should be removed by the local authority without extra or special charge.

In reference to the collection of refuse, he said there were only two satisfactory methods, *i.e.*—(1) house-to-house calls, at appointed and regular times, once every weekday, between 6 and 8.30 a.m.; (2) house-to-house calls weekly or semi-weekly, also at appointed and regular times and days, between 6 and 8.30 a.m. It was essential that one or more portable covered galvanised iron ashbins, of about 2 to 3 cubic ft. capacity, should be provided for each household, and that the old ashpits, whether open or covered, should in all new property be prohibited, and, where existing, should be done away with as soon as possible. The collecting vehicles should in all cases, whether carts or vans, be covered in, so that the contents, which were almost always light and easily disturbed by the wind, could not be blown about and scattered while in transit to the place of disposal. They should also be made on the tip-up principle, for easy discharge of their contents. He wished especially to emphasise the point of keeping the collecting carts or vans reasonably clean, with frequent cleansing with a hose-pipe and brush, as nothing was more incongruous than a dust cart or van bearing the name of a public sanitary authority and itself a moving mass of dirt and filth. It was to be hoped that the old methods of disposal, by dumping refuse in disused quarries or clay-pits, or other waste lands on the unbuilt-upon areas, or even on tidal foreshores in the local authority's district, were now almost, if not entirely abandoned. There was at present only one really efficient method of disposal, except in the case of a few seaside districts, where disposal by dumping from hopper-barges far out at sea, might be successfully adopted, at least, for a time. The conversion by heat of house refuse into a useful product was at once most efficient, satisfactory, and economical. This conversion could be attained by most of the many refuse destructors now in use. The essential conditions in respect of a successful refuse destructor were:—

1. That it should be reasonably central for the district or subdistrict whose refuse it was to dispose of.

2. That is should thoroughly and perfectly convert all organic matter in the refuse, by combustion, into an inorganic form, at once inoffensive and useful.

3. That it should not itself be a nuisance or injurious to the neighbourhood in which it was situated.

Any destructor that fulfilled these three conditions was a success, whatever its financial results might be.

One of the most important points to be kept in view in the collection and disposal of refuse was that it should be handled as little as possible. The ashbins, after being filled by the householders, should have their contents discharged direct from the bins into the collecting vans. Also the contents of the collecting vans should be discharged direct into the cells of the destructor. Then the red-hot clinker in the destructor furnaces should be discharged direct into iron conveyors to the cooling platforms. From the latter the cooled clinker should be sorted out by machinery for the various purposes for which it was intended. Then the constituent parts of house refuse could, under reasonably careful management, be so utilised as to be a useful set-off against the cost of collecting and burning, although he thought it could not yet be said of any disposal plant that it was really self-supporting. It should be steadily kept in mind that the first object of a refuse destructor was to destroy noxious refuse, and the more thoroughly and perfectly that object was accomplished, the more beneficial would be the results to the authority.

Mr. Brodie then dealt at some length with the collection and disposal of house refuse in the Borough of Blackpool.

A general discussion followed.

Competition News.

WATERFORD PARISH CHURCH INSTITUTE.

The plans for the new parish hall and church institute at Waterhead have now been approved by the Committee. The successful plans were those of Mr. C. T. Taylor, architect, Oldham. The building will cost over 1,000*l.* The ground will also allow of a large-sized tennis court. The work of building the institute will be commenced in the spring of next year.

Correspondence.

PROFESSOR HAMLIN'S LECTURE.

SIR,—As one who had the privilege of listening to Professor Hamlin's interesting paper upon American Architectural Education and who could not venture to add to the length of a protracted meeting by any comments, may I beg for an opportunity for one or two remarks upon this important subject?

Probably the most salient fact which was laid before us was the breadth and scope of American education not only in design, which is naturally the chief element of such studies, but also in the no less neecssary adjuncts of successful architectural work, the training in technology and the principles which underlie the many practical problems which present themselves in the successful design of a building of any magnitude.

As the lecturer had the misfortune to be without his data as to the time allocated to various subjects at different periods of study, may I venture to refer to some facts which I presented in the same room five years ago, showing the amount of science which then entered into the curricula of five American and eleven other institutions in different parts of the world, and which showed that in scientific training as a basis for technical knowledge, we, in this country, were much behind other institutions abroad. As it is often advanced that a student has no time for such matters, it would be interesting to ask how he obtains time for such work elsewhere, and if his ability in design is inferior to that of our students here, as a consequence of such technical study.

I had great gratification in listening to the comments of one speaker on the necessity for technical knowledge, which, coming from one in such close touch with things artistic, were especially cogent, and I should like to dissociate myself from the views of two eminent speakers, one of whom, though engaged in a technical work of great magnitude and importance, made the surprising admission that he relegated matters outside the sphere of architectural design to firms of specialists; the other, who, though his literary attainments vie with his artistic abilities, expressed his disbelief in the association of architectural studies with a liberal education. That these gentlemen, both of whom are connected with our sister Universities, should have expressed themselves in this manner appears most lamentable, more especially as at the present time one, at least, of these centres of learning is endeavouring to interest its students in architecture with what should result in immense gain to the profession.

Surely no better antidote can be found to the apathy of the public, of which we so often complain, than encouragement, not only to our Universities, but to our schools, not to attempt to train architects, but to awaken an interest in architecture and to supply students with such a basis of scientific training as shall enable them subsequently to master in an intelligent manner the many practical and highly technical problems the solution of which is essential to the successful fruition of all our material artistic conceptions.

ALAN E. MUNBY.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on December 9, the following, amongst other matters, were dealt with:—

Drainage By-laws.—In reply to the London County Council's circular with reference to the Police Court decision in the case of Kershaw *v.* Brooks, it was decided to inform the County Council that the City Council were of opinion that a new by-law should be made definitely providing that the builder or contractor should be responsible for any infringement of the London County Council drainage by-laws.

Rebuilding of District Railway-station.—The Works Committee reported having received plans, submitted by Mr. Geo. Sherrin on behalf of the railway company, with a letter to the City Engineer, showing an amended proposal for the rebuilding of the station. The amended proposal is to build over a total area of only 380 sq. ft. of the recessed portion of the footway at the Victoria-street entrance, and to leave open as a public highway an area of about 700 sq. ft. The proposal also includes the straightening of the building line in Terminus-place, involving small areas being taken from and added to the public way.—Approval was given to the plan.

Memorial Fountain.—Following on the Council's decision refusing to consent to the placing of a cattle drinking-trough in Whitehall, in memory of Lady Leigh, the Secretary of the Metropolitan Drinking Fountain Association wrote stating that Lord Leigh desired to present a very handsome structure, possibly similar to the Grosvenor trough in Park-lane, and would be pleased if a site could be allotted in Belgrave-square. The Association further offered on behalf of Lady Banbury to erect a drinking fountain somewhere near the middle of Eaton-square. It was decided to inform the Association that while appreciating the offers the Council did not see their way to entertain the proposals.

Disinfecting-station.—On the advice of Mr. John Murray, the Council's Architect, it was agreed to accept the tender of Messrs. Goddard, Massey, & Warner for the engineering work at the disinfecting-station, Grosvenor Canal, the work to be done in accordance with the specification of Mr. Murray.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnet.—Hadley Grove and Gladsmuir-road are to be made up. Plans have been passed for four houses in Byng-road, for Mr. Anstee.

Ealing.—The Borough Surveyor has prepared plans for two conveniences to be erected at a cost of 550*l.* and 900*l.* respectively.

Finchley.—The following plans have been passed:—Mr. C. F. Day, two lock-up shops and sixteen houses, Regent's Park-road and Rosemount-avenue; Mr. F. J. Matthews, conversion of Wentworth Hall, Ballard's-lane, into cinematograph exhibition; Mr. H. E. Anstee, eight houses, Queen's-avenue; Messrs. Herbert & Tant, four houses, Stanhope-avenue; Mr. C. W. Scott, three houses, Arden-road. Plans have been lodged as follows:—Messrs. Frecker & Co., four houses, Holly Park-gardens; Messrs. J. Freeborn & Sons, ten houses, Squires-lane; Mr. S. J. Hunnings, thirty houses, Ballard's-grove, Woodside-grove, North Finchley; Mr. E. M. Gilbert, twelve shops, Great North-road, near Fortis Green-road.

Friern Barnet.—Messrs. Grounds & Newton are to make up Alma-road, the contract price being 837*l.*, and Mr. William Iles is to make up Bawtry-road, the contract price in this case being 500*l.* Tenders are to be invited for the making-up of Torrington Park and Oakleigh Park roads. Plans were passed as follows:—Messrs. Pilgrim & Sons, seven houses, Oakleigh-gardens; Mr. C. F. Day, six houses, Hillside-avenue; Mr. Spink, alterations to Nos. 14, 16, 18, and 20, Halliwick-road; Messrs. Betstyle, Ltd., three houses, Park View-crescent.

Hammersmith.—The freehold interest of Messrs. Fuller, Smith, & Turner in a strip of land forming part of the Salutation Inn, 154, King-street, and which is required for the purpose of widening, has been purchased by the Council for 1,414*l.* The Council has also, as part of the agreement, approved of rebuilding plans lodged by Messrs. Fuller, Smith, & Turner.

Hendon.—At the last meeting of the Council a letter was received from Messrs. Nevile & Smith, solicitors, in reference to a proposal of clients of theirs to acquire a plot of land in Golder's Green-road, for the erection of a church, and asking for information as to the building line. The Council directed that the information asked for be sent. The following plans were passed:—Mr. H. A. Bernstein, seven houses, Temple-grove, Temple Fortune; Mr. G. Hamblin Fox, seven shops, corner of Station-road and Hale-lane, Mill Hill; Mr.

Digitized by Google

A. Phillips, six houses, Caddington-road; Messrs. Gordon & Gunton, Wesleyan school, The Burroughs; Gas Light and Coke Company, new stores, Golder's Green-road; Mr. E. Streather, ten houses, Corringham-road, and six houses, Temple-gardens, Golder's Green; Mr. Pine, six houses, Finchley-road, between Ravenscroft-road and Wentworth-road; Mr. E. Wood, six houses, Babbington-road, Hendon; Mr. H. A. Welch, four houses, Corringham-road; Mr. J. M. Josephson, eight houses, Egerton-gardens, Ravensfield Estate; Sir Audley D. Neeld, pavilion for tennis-court, Neeld Estate, Sevington-road, corner of Graham-road; Mr. R. V. Hart, six houses, Wentworth-road.

Poplar.—The Council have passed a resolution approving in principle of 57,000*l.* being spent in the next three years on paving and repairing works, 24,000*l.* to be paid out of revenue, and 33,000*l.* to be raised by loans. The London County Council is to be immediately asked to advance 13,000*l.* for the first year's works, which will be divided between asphalte and granite paving in the proportion of 10,000*l.* and 3,000*l.*

Stepney.—40,500*l.* is to be expended in additional plant for the electricity undertaking; also a substation is to be erected at Wapping Plans have been passed for Messrs. Pearson & Milburn for the re-erection of buildings in Glasshouse-fields, Limehouse.

Master Builders' Associations, etc.

EDINBURGH AND LEITH BUILDING TRADES ASSOCIATION.

The annual dinner of the Edinburgh and Leith Building Trades Association and the Building Trades Exchange was held on the 7th inst. in the Royal British Hotel, Edinburgh, Mr. David Wilson, J.P., presiding.

After the loyal toasts had been drunk, Mr. William Allan, Vice-President of the Glasgow Master Wrights' Association, gave "The Edinburgh Trades Association and Exchange." He stated that there were at present two schools being erected by Leith School Board, and he understood that these schools were being imported from Germany, and not only so, but that the majority of the joiners who were erecting them were actually Germans. This was taking away work which could have been done quite well by British workmen.

In responding to the first part of the toast, the Building Trades Association, the Chairman said there were many examples of German competition in Edinburgh as well as Leith, and he thought something should be done to protect British trade. Local builders had a number of contracts to look forward to, and they hoped that in the future they would be better off than they had been during the last two or three years. Important contracts were those for Rosyth, Redford Barracks, the new Dick College, and the Usher Hall.

Mr. W. Graham Yooll, in replying for the Building Trades Exchange, said they were undoubtedly just now passing through a depression which had existed for some time. It was not only in this country that it existed, but it was common in most of those on the Continent. The building trade in Antwerp, Vienna, Berlin, Brussels, and all over was very much depressed and from the same cause—over-building. They had passed through similar depressions before; they came in cycles, and affected all trades. But they could always look forward to a reaction when things would become better and there would be a revival of trade. It did not matter much which party was in power; it would not affect matters which were due entirely to economic reasons. Regarding local trade, he thought there was every prospect of that getting better. Mr. Allan had mentioned the Leith schools. It had been said that in dealing with the subject he had an axe to grind, but he denied this so far as his personal interests were concerned. He was prepared to admit, however, that as being connected with the building trades he had the same axe to grind or the same interest to serve as every other Britisher had when he saw work that could be done by himself or his friends going away to the foreigner, and that at a higher cost than could be done at home. It had also been said by the Chairman of the Leith School Board that the statements made by gentlemen at a meeting of the Building Trades Exchange were inaccurate. Well, one of the statements that he made was that 40 per cent. of the cost of these schools was going to the Germans. If that statement was inaccurate or untrue, the Chairman of the Leith Board was the author of it and his authority for making it. Then another assertion was that the schools were not highly inflammable. He had taken the opportunity when a Committee of the Association was down looking at them to take pieces from the so-called fireproof lining with which they were constructed away with him. He thought he could prove to the satisfaction of everybody that they were highly inflammable.

Mr. Yooll then exhibited two pieces of the fireproof lining, a thick piece and a thin piece, and in view of his audience set fire first to the one and then to the other. The two pieces continued to burn steadily until blown out by the experimenter.

Continuing, Mr Yooll said he had further experimented with some of this fireproof material, and found that it gave off at a comparatively low temperature an inflammable gas. The schools were costing more than similar British-made schools would have done, and even then they were of ordinary construction.

"The Corporations of Edinburgh and Leith" was given by Mr. Alex. Drysdale, and responded to by Bailie Macfarlane, Edinburgh, and Councillor Bryson, Leith.

TOWN PLANNING.

A NATIONAL Town Planning Conference, convened by the Garden Cities and Town Planning Association, for the purpose of considering the application of Mr. John Burns's Housing and Town Planning Act, was opened at the Guildhall on the 10th inst. Delegates attended from the City of London, the London County Council, fifteen metropolitan boroughs, thirteen county councils, forty provincial boroughs, thirty-five urban district councils, twenty-five professional and propagandist bodies, and many authorities on town planning in England. At the outset the Lord Mayor gave the delegates an official welcome.

Mr. Godfrey Benson (Mayor of Lichfield and Chairman of the Association) presided over the conference.

The Secretary (Mr. Ewart G. Culpin) announced that a proposal was to be submitted for establishing a central body for town planning matters, which by combining the experience of representatives of all sections would be able to render efficient and welcome service to any department or authority. The Association would agree to organise the new body, which would form an effective clearing house of housing and town planning effort and prevent overlapping. He also suggested that the conference should authorise the sending of a message of congratulation to Mr. John Burns on the passing of the Bill. They might not agree with all in the measure, but they were agreed that they had at any rate the beginnings of a new order of things for the beautifying of their towns and the improvement of the life of the people in town and country.

Mr. Thomas Adams opened a discussion on "The Practical Application of Town Planning Powers," and explained in detail the clauses of Mr. Burns's Act. Whereas German town planning led to centralisation, that in England led to garden cities and garden suburbs, and thereby to decentralisation. Local authorities would now be required to consider the important question of protecting the natural features and amenities of their districts together with the further question of providing for the convenience and regulation of traffic. Town planning should result in a great saving to local authorities, and not in increased expenditure. By the economies that could be effected authorities would be induced to carry out schemes. It had been suggested that a weakness of the Act was the absence of compulsory powers, but he thought the opportunity of effecting economies would be a much better inducement than any form of compulsion. When authorities and owners learnt to appreciate the economies to be effected, and the social betterment that would result from carrying out town planning schemes, they might expect great and far-reaching results from the working of that part of the Act.

Mr. J. W. Willis Bund (Worcester City Council) considered that if the legislation had been a little wider and county councils had been included as well as other bodies, the Act would have worked a great deal more smoothly.

Mr. Kirkby (City Architect, Bradford) said the passing of the Act had been a great step forward. It was doing much to prevent the spreading of slums in the suburbs. An important question to be faced was the demolition of large blocks of buildings to provide for the flow of traffic in the great cities, and he recognised the difficulty in that matter. They were not exercising the foresight which Germany had exercised in the matter of buying land for town planning purposes. He thought they should impress upon authorities the importance of buying land for town planning purposes many years in advance, because they did not know how a town would develop and grow.

Professor Beresford Pite delivered an address on "Architecture and Town Planning." He drew attention to the enormous debt London was under to its great landowners. Generally speaking, practically all the garden squares of London where dwelling almost alone was healthy and possible were due to the private enterprise and personal expenditure of individuals who were now described technically as ground landlords. What London would be without its gardens it was difficult to conceive. Its great squares would go down to posterity bearing the names of Grosvenor, Cavendish, and Eaton as monuments attesting to the public spirit and architectural qualities of their original layers-out.

Mr. Raymond Unwin was glad that the Town Planning Bill began at the right end and went direct to the residential areas which were growing up around all large towns. With regard to that point, one thing which needed to be carried further was the reduction of the number of houses which might be put on the average on an acre of ground. The increase of motor traffic on the main roads was anything but desirable for the residences, and that was a problem which must be faced. It was amply provided for in the Bill, and they must face it.

Mr. Platt (Salford) said that when they endeavoured to put into operation in the North of England a scheme like that at Letchworth they were met at once with failure, principally because the climatic conditions prevented the particular spot being beautiful. He suggested that the Local Government Board should give to local authorities more latitude than had been the case in the past.

A resolution was passed advocating the formation of a central consultative town planning body for the purpose of giving advice and assistance on matters connected with town planning, for the better development of towns, and for concentrating work along those lines, with a view to securing effective action and preventing overlapping, such a body to work strickly upon non-party lines in endeavouring to assist in every way possible public authorities and others desirous of obtaining its services, and to consist of representatives of the various professional and other societies interested, together with municipal and other authorities, who shall meet from time to time and make such rules and regulations as they shall think fit. The resolution added that the Association be requested to call together the representatives as agreed upon as early as possible, and to communicate with the various bodies concerned.—*The Morning Post.*

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDARE.—Mortuary; Borough Surveyor, Town Hall.

Amersham.—The Rural District Council has passed plans for a substation for the Chesham Electric Light Company, Chesham Bois, Mr. H. Kennard.

Ammanford.—Y.M.C.A. buildings; Mr. D. Thomas, architect, College-street, Ammanford.

Bedwellty.—Additions to workhouse; Messrs. Smith & Son, builders, Stratford, E.

Berkby.—Baptist chapel (4,700*l.*); the Trustees.

Birmingham.—New church, Newtown-row. Rev. T. S. Dennison, St. Stephen's, Newtown-row.

Blyth.—School (4,000*l.*); Messrs. Armstrong & Wright, architects, Grainger-street, Newcastle-on-Tyne.

Bootle.—Theatre, Stanley-road (18,000*l.*); Mr. H. Pennington, Pennington Estate Company, Bootle.

Boxted (Essex).—School; Mr. F. Whitmore, architect, Duke-street, Chelmsford.

Bradford. — Additions to Argyle Mills (5,000*l.*); Messrs. T. Baker & Sons, architects, 15, Bank-street, Bradford.

Bridgwater.—Secondary school; Mr. H. Bryer, builder, Bridgwater.

Bristol.—Adaptation of the Dutch House for occupation by the Macdonald Manufacturing Company, Ltd. Alterations to Fairfield School (614*l.*); Messrs. R. Wilkins & Sons, builders, 20, Bishops-street, St. Paul's, Bristol.

Chatham.—The Town Council has passed plans for Messrs. Style & Winch for a motor-house at Gibraltar Inn.

Colchester.—Tuberculous hospital; Committee of the Eastern Counties Asylums for Imbeciles, Colchester.

Coleraine.—Bank premises; Messrs. Blackwood & Jury, architects, 41, Donegall-place, Belfast.

Dares, N.B.—Manse and offices; Mr. T. Munro, architect, 62, Academy-street, Inverness.

Darlington.—High School (12,000*l.*); Mr. W. Rushworth, architect, Shire Hall, Durham.

Digitized by Google

Dipton.—Workmen's dwellings (4,000*l.*); Mr. J. E. Davis, architect, South Meadowsley.

Drumoak.—Library (2,000*l.*); Messrs. Walker & Duncan, architects, 3, Golden-square, Aberdeen.

Dumfries.—Skating-rink, Cresswell Park; Messrs. Hay & Thomson, architects, 10, Bank-street, Dumfries.

Dunstable. — Library; Surveyor to the Council, Dunstable.

Elland.—Residence (2,000*l.*); Messrs. Sharp & Waller, architects, Brighouse, Yorks.

Epsom.—Nurses' Home (1,870*l.*); Mr. Williams, architect, care of Clerk to the Guardians.

Exmouth.—Block of shops; Mr. E. Ellis, architect, Exmouth.

Feltham.—The Urban District Council has passed the following plans:—Two houses, Imperial-road, Tye Estate, for Messrs, Birch & Menday; buildings on site of Prince of Wales beerhouse, for Messrs. Ashby's Brewery, Staines.

Flimby.—Sunday-school; Messrs. W. G. Scott & Co., builders, Workington.

Folkestone.—The Town Council has passed the following plans:—Skating-rink, Victoria Pier, for Rinkeries, Ltd., Mr. R. Pope, architect, 17, Cheriton-place, Folkestone; two detached houses, Ravenlea-road, for Mr. W. Smith, Mr. P. Knowles architect; motor garage, Grimston-gardens, for Mr. E. L. Marshall, Messrs. D. Baker & Co., builders; four houses, Stuart-road, for Mr. F. E. Maycock.

Frome.—Church; Committee of the United Chapel Congregation.

Granton.—Villa (2,000*l.*); Mr. J. H. Smith, architect, Strathspey Estate Office, Grantown.

Hamilton.—Golf clubhouse; Messrs. Cullen & Brown, architects, Hamilton.

Hetton-le-Hole.—Public offices; Mr. J. Harding, architect, Hetton.

Hillborough.—School; Norfolk County Education Committee, Shire Hall, Norwich.

Ilford.—Golf clubhouse; Mr. A. J. Magson, hon. secretary, Ilford Golf Club.

Ingrow (Keighley).—Mills; Messrs. Broster & Son, builders, Keighley.

Jarrow.—Concert hall; Messrs. Barnes & Burton, architects, 6, Jesmond Dene-road, Jarrow.

Lincoln.—Children's Home; Clerk to Lincoln Board of Guardians.

Llanfaes.—School; Mr. C. W. Best, architect, Brecon.

Middleton.—School; Mr. W. Rushworth, architect, Shire Hall, Durham.

Newton Abbott.—Post-office; Messrs. Rowell, Son, & Locke, architects, Newton Abbott; Mr. H. Mills, builder, Newton Abbott.

Nottingham.—Public baths (10,000*l.*); Mr. F. B. Lewis, architect, Guildhall, Nottingham. Church; Rev. J. H. Taylor, vicar, St. Christopher's.

Parkstone.—Skating-rink; Secretary, Parkstone Roller Rink Company.

Pitlochry.—Mansion (2,000*l.*); Mr. T. Munro, architect, 62, Academy-street, Inverness.

Plymouth.—The Town Council has passed the following plans:—Roman Catholic Church, at junction of Home Park-avenue and Holland-road, Bishop of Plymouth; sixteen houses, Salisbury-road, for Mr. H. Foster; St. Martin's Church, corner of Weston Park-road and Tavistock-road, for vicar and churchwardens.

Pontcymmer.—Skating-rink; Messrs. Cook & Edwards, architects, Bridgend.

Prestwick.—Villas (2,000*l.*); Mr. J. Pearson, architect, 51, John-street, Kilmarnock.

Radyr (Glam.).—Additions to Christ Church; Mr. G. E. Halliday, architect, Castle-street, Cardiff.

Runton.—School; County Education Architect, Shire Hall, Norwich.

Shirebrook.—School (4,700*l.*); Mr. F. Martin, builder, Stapleford.

Southampton.—The Town Council has passed the following plans:—Two houses, Randolph-street, and four houses, Edward-road, for Mr. G. R. Long; two houses, Suffolk-avenue, and ten houses, Lumsden-avenue, for Messrs. Jurd, Sanders, & Christie; twenty-five houses, Sidney-place, six houses, Anglesea-road, and eight houses, Romsey-road, for Mr. W. H. Masters; four houses, St. James's-road and Grosvenor-road, for Messrs. Hair & Bucknill.

Stockport.—Bank premises; Mr. R. Carlyle, builder, Old Trafford, Manchester.

Stretford.—The Urban District Council has passed the following plans:—Mill, Trafford Park, for Messrs. Greenwood & Son; ten houses, Marland-road, for Mr. Thomas Emery; extensions to Talbot House, for the Royal Schools for the Deaf and Dumb; additions to works, Cornbrook, for Messrs. W. Thorpe & Son; twenty-two houses off Lacey-street, for the Urban District Council.

Stroud (Glos.).—Skating-rink, London-road; Local Syndicate.

Sudbury.—School; Mr. H. Middlewich, builder, Bardwell.

Sutton (Surrey).—The Urban District Council has passed plans for four semi-detached houses in Lichfield-road, for Mr. W. Dallman; and for two semi-detached houses, Lenham-road, for Mr. W. Shannon.

Tonbridge.—Skating-rink; Local Syndicate.

Tudhoe.—School; Mr. W. Rushworth, architect, Shire Hall, Durham.

Wakefield.—Church hall, Denby Dene-road; Trustees, St. James's Church.

Wakeham. — Church; Trustees, United Methodist Church.

Walsall.—The Town Council has passed the following plans:—Four houses, Birmingham-road, for Mr. T. Aldridge; extensions to factory, Cecil-street, for Mr. J. W. Farrington; warehouse, Windmill-street, for Messrs. Matthew, Harvey, & Co., Ltd.; rebuilding Walsall Arms public-house, Bank-street, for Mr. G. Whitehouse.

Winchester.—School; City Surveyor, Guild hall.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Marner-street, Bow.—The tender of Messrs. G. & E. Bradley, 723*l.* 10s., was recommended for heating works, the architect's estimate of which was 777*l.*

Adapting a Stable.—The tender of Mr. L. Kazak, 318*l.* (architect's estimate 300*l.*), recommended for adapting stable at Avery-hill College for the purpose of botany organisation.

Holmes-road, St. Pancras.—For provision of housewifery centre the tender of Mr. W. Reason, 143*l.*, was accepted; architect's estimate 125*l.*

Home for Little Boys, Clapham.—Providing water-closets, Mr. E. Triggs, 92*l.*, accepted.

Montem-street, Islington.—Altering entrance and forming new entrance, Messrs. Stevens & Sons, 72*l.*, accepted.

Upper North-street, Poplar.—Extending staircase and forming new lavatory, Mr. H. C. Horswill, 177*l.*, accepted.

Albert Institute, Southwark. — Adapting rooms as housewifery centre, Messrs. Maxwell Brothers, 145*l.*, accepted.

Selincourt-road, Wandsworth.—Completing playground and providing new shed, Mr. E. Triggs, 140*l.*, accepted.

Work Executed by the Works Department.—Commenting upon this, the Building Sub-committee explained that the reason why the actual cost of the London Day Training College and the Central School of Arts and Crafts was 100,841*l.* 13s. 10d., being 9,272*l.* 18s. 9d. over estimates, was partly due to the fact that the work was spread over three years. With reference to the structural improvements at Pritchard's-road, Bethnal Green, which cost 4,997*l.*, or 1,602*l.* over the estimate, the explanation was that there was delay in getting possession of the site, and the work was proceeded with as a matter of urgency.

Obituary.

MR. SHERRIN.

We regret to announce the death, last week, of Mr. George Campbell Sherrin, architect, of No. 44, Finsbury-square, E.C., and the Gate House, Ingatestone, Essex. Mr. Sherrin was elected an Associate in 1882, and a Fellow in 1898, of the Royal Institute of British Architects; in 1872 he became a member of the Architectural Association. Among his chief architectural works are the following:—Buildings in and around Spitalfields Market, 1886; the outer dome and lantern, the Oratory, South Kensington; houses at Westgate-on-Sea; "Beauvale," Sunningdale, 1886-7; offices at the corner of Serle and Carey streets, W.C.; rebuilding of No. 84, Piccadilly, afterwards the Imperial Service Club, 1899-1900; premises in Hambury-street, London Fields, for the City of Dublin Bottling Company; a residence for Colonel Cubitt at Camberley, near Bagshot; a block of flats on the site of Nos. 2, 3, 4, Church-row, and the rebuilding of the Orphanage, Holly-place, Hampstead, 1897-8; premises in Pennsbury-terrace, Wandsworth-road; Moorgate Station-chambers, Moorgate-street, E.C., 1902-3; and the superstructure of the Moorgate-street railway-station, at a cost of about 18,000*l.*, in 1893-4; Alexandra Hotel, with assembly hall, theatre, restaurant, etc., Marine-parade, Dovercourt, and a seaside house there, 1903; superintendence of the erection of chambers on the garden site, Clement's Inn, W.C.; new buildings, Douai College; St. Mary's (new) R.C. church and presbytery, Eldon-street, Moorfields, built by Messrs. Holliday & Greenwood, and opened on March 25, 1903 (illustrated in the *Builder*, August 31, and October 5, 1907, doorway and presbytery above); premises for Messrs. Sadgrove, furniture dealers, and Eldon House, in Eldon and Wilson streets, Finsbury (August 31, 1907); "Wynnstow," Limpsfield, for W. T. Allen, and "Norato," at Beccles, 1903; "Hollycombe," Liphook, Hants, for Mr. J. C. Hawkshaw; "Laggis," Netherhall-gardens, Hampstead, 1888; rebuilding and improvement, in 1805-9, of the M. and M. D. Ry., Kensington High-street, Gloucester-road, Monument, and South Kensington railway-stations; Rayleigh House (and additions), Tite-street, Chelsea, for the Hon. R. Strutt; Spencer House, South-place, Finsbury (August 31, 1907), and Eldon-street House (October 5, 1907); alterations, No. 40, Welbeck-street, W.; Cannon-street Buildings; restoration of Thorndon Hall, Brentwood, for Lord Petre; many residences in Essex, Isle of Wight, Sussex, and Surrey; and St. Mary-at-Hill House, an extension over the railway shaft, Eastcheap, for Messrs. Trower & Sons (November 2, 1907). Mr. Sherrin and Mr. John Clarke were appointed eleven years ago as joint architects to the Margate and Southend Kursaals Company, Ltd., and Mr. Sherrin, in conjunction with Mr. R. J. G. Read, C.E., was the architect of the Kursaal at Southend, the scheme including a tower, circus, arcade, fifty-three houses, and ninety shops, begun in 1898, upon a site of some 26 acres, at an outlay of more than 80,000*l.* In August—October last he was appointed as architect for the rebuilding of the Mark-lane railway-station of the M. and M. D. Ry. Companies, and of their Victoria station, with an arcade to connect the entrances in Victoria-street and Terminus-place; he was also appointed, just recently, for an extension of the St. Edmund's Convent Schools in Little Union-street, Lisson-grove. Mr. Sherrin, we may add, was a generous subscriber to the new premises fund of the Architectural Association. He was a member of the Burlington Fine Arts Club, and in former years a contributor to the Royal Academy Exhibitions. His son, Mr. Frank Sherrin, was associated with him latterly in his practice. In all Mr. Sherrin's work there was the feeling of a true artist. He had built for himself, a good many years ago, a charming house at Ingatestone, planned and designed with a great deal of originality. At some of the recent annual excursions of the Architectural Association he was a prominent and most welcome member of the party, attaching the younger men much to him by his kindly manner and his interest in the objects of the excursions.

MR. CUTLER.

We regret also to announce the death, on December 10, at his residence, No. 5, Queen-square, Bloomsbury, of Mr. Thomas William Cutler, F.R.San.I., in his 68th year. Mr. Cutler was elected in 1873 an Associate, and in 1879 a Fellow, of the Royal Institute of British Architects, and served as member of the Council; in 1867 he became a member of the Architectural Association. Mr. Cutler was appointed a member of the Executive Committee for the seventh International Congress of Architects, London, 1906: he was appointed to represent the Royal Institute of British Architects at the Triennial International Congress of Hygiene and Demography, Madrid, 1893; on the Sanitary Inspectors' Examination Board; at the annual Congress of the Royal Sanitary Institute, Bradford, 1903, Glasgow, 1904, and Bristol, 1906, and as a judge of the Health Exhibition; and the sixth International Congress of Architects, Madrid, 1904. In 1901 he was appointed Honorary Secretary of the architectural section, and collected and arranged the contents of the architectural museum, British Congress on Tuberculosis, Queen's Hall, London, 1901, and in 1903 was elected Treasurer of the Royal Sanitary Institute. Mr. Cutler was the architect of the Hotel Metropole, Folkestone, built at a cost of some 150,000*l.* (illustrated in the *Builder*, July 31, 1897); Convalescent Children's Home and Cripples' Wards, Epping Forest (November 20, 1897), and the Vicarage, High Beach (November 20, 1897); Italian Hospital, Queen-square, W.C., erected for about 20,000*l.* (March 10, 1900, and staircase and chapel, April 5, 1902); improvement and enlargement of the Grand Hotel, Broadstairs, 1898; Kursaal, Ramsgate, with assembly-rooms, theatre, banquetting hall, etc.; a reconstruction, with alterations and extensions, of "Avery Hill," Eltham, for the late Colonel J. T. North, at an expenditure of between 250,000*l.* and 300,000*l.*, 1899-90; some small country houses (December 7, 1895); plans of improvements at Leeds for the City of Leeds Central Estates Company, Ltd., comprising the rebuilding of the Bull and Mouth Hotel, a large emporium opposite Briggate, and many shops in Kirkgate, New Central-street, and Central-road, carried out by Messrs. Armitage & Hodgson, of Leeds, builders, at an outlay of nearly 100,000*l.*,

Digitized by Google

1900-2; a cemetery lodge in Warwickshire (March 10, 1900); houses in Abbey-place, St. John's Wood; plans for reconstructing the Liverpool Infirmary for Children, at an estimated cost of 30,000*l.*, 1900-1; Queen's Hotel, Southsea (May 16, 1903); plans for entirely remodelling the Royal Isle of Wight County Hospital, at a computed cost of 18,500*l.*, proceeded with, in part, 1903; and eleven detached houses on the Cleeve Park Estate, Goring-on-Thames. He made the sketches for the figures of "Summer" and "Autumn" for the new Bull and Mouth Hotel, Leeds, and acted as assessor for the Bucks County Council Schools at Aylesbury and Wolverton in May, 1905.

MR. SAUNDERS.

Mr. James Ebenezer Saunders, F.S.A., F.R.A.S., F.G.S., F.Z.S., of Chelviston, Eltham-road, Lee, architect and surveyor, who died on November 24, aged 79 years, prepared the plans and general designs (the elevations being by Mr. R. J. Worley) for the rebuilding of the London Pavilion, near Regent-circus—illustrated in the *Builder* of December 26, 1885—and, jointly with Messrs. F. & H. Francis, of the Hôtel Métropole, Northumberland-avenue, and the Grand Hotel, Charing Cross: erected in 1879-85. He was also the architect for the restoration, in 1894, of St. Stephen's Church, Coleman-street, E.C.; a block of buildings on the sites of old Winchester House, Old Broad-street, and the Greek Church in London-wall, with frontages to Old Broad-street, London-wall, and Great and Little Winchester streets, 1883-4; of buildings on a large site in Clifton-street, Shoreditch, for Messrs. Wertheimer, Lea, & Co., and, for Messrs. Howard Wall & Co. and the Creeds Trust, of premises on the site of Nos. 25-37, Hackney-road, Shoreditch.

General Building News.

CHURCH OF ST. JOHN THE BAPTIST, KENSINGTON.

Messrs. James Brooks, Son, & Adkins have been appointed as architects for the completion of the church of St. John the Baptist, in Holland-road; Messrs. E. A. Roome & Co. are the contractors for the work. The designs for the church were made by the late James Brooks, and the chancel, constructed of stone, and a temporary annexe were opened for service in June, 1876.

BAPTIST BUILDINGS, KINGSTHORPE.

The Kingsthorpe Baptists have erected new buildings, comprising senior classrooms, a minister's vestry, and an assembly-room. Mr. J. Ingman was the architect, and the work has been carried out by Mr. A. J. Chown.

BANK PREMISES, NEATH.

New bank premises for the Metropolitan Bank of England and Wales, Ltd., have just been erected at Neath. The principal façade of the building is built of Monks Park stone. In the basement are the muniment and strong rooms, etc. The ground floor has a banking chamber, manager's room, and waiting-room. The first and second floors are to be let for offices and caretaker's apartments. The work has been designed by Mr. Glendinning Moxham, F.R.I.B.A., architect, Swansea, the contractors being Messrs. Lloyd Brothers, Swansea.

PROPOSED PIER PAVILION, BOURNEMOUTH.

The Bournemouth Corporation's scheme for the provision of a pier pavilion on the site of the Belle Vue and Pier Hotel was inquired into on the 7th inst. by Mr. H. Shelford Bidwell, M.Inst.C.E., Inspector to the Local Government Board. The application to the Board is for sanction to borrow a sum of 77,000*l.* The Town Clerk (Mr. Geo. W. Bailey) said that the scheme included a large hall accommodating 1,500 or 2,000; a vestibule, cloakrooms, and a small hall for dances, drawing-room meetings, etc., dining-rooms, a ladies' room; promenade, covered and open, where teas could be served and open-air music provided, and where shelter was afforded; ladies' retiring-rooms, a billiard-room, which would be really a recreation-room; a buffet lounge; a promenade on a higher level, giving views of the bay; and a substructure to which would be transferred the business now done at the Belle Vue Hotel. There was in the latter portion sufficient room for baths and a skating-rink, and possibly a few fancy shops, at which visitors liked to deal. Subsequently the Inspector said he had various questions to ask the Borough Surveyor and Engineer (Mr. Lacey), and his examination of that witness on structural matters and in regard to the scheme generally would take, he thought, an hour. It was then decided to adjourn, and as the Inspector intimated his engagements would not permit his resuming the inquiry before Christmas, and probably not before the second week in January, he adjourned the proceedings *sine die*.

HOUSING SCHEME, LIVERPOOL.

At a recent meeting of the Liverpool Housing Committee it was announced that the trustees under the will of the late Mr. Sutton have in prospect a scheme for the erection of 150 model cottages in the outskirts of the city for the use of the poorest classes of the community. About two years ago it was intimated to the Committee that under the will of this gentleman a large sum of money—at the present time it exceeds two millions—was held in trust for building model dwellings for the poor. At that time the Town Clerk and the City Surveyor approached the trustees, but the reply was that they were engaged on schemes in London, and were not likely to turn their attention to the provinces for some months to come. In a communication they have now made to the Committee the trustees state that they are looking out for a site for model cottages in the neighbourhood of Liverpool, and that their representative has seen several sites during a recent visit to Liverpool, and was very much struck with a part of the Lisburn Farm Estate belonging to the Corporation, situate between the new Queen's-drive and Larkhill-lane, and containing about 12 acres of ground. The trustees desired to know if the Corporation would sell this property for the erection thereon of model cottages, and, if so, at what price. If satisfactory terms could be arranged the Sutton trustees are "prepared to submit a scheme for erecting some 150 model cottages to be let at rents such as would readily command tenants from among the poorest classes of the community." A subcommittee is at present considering the matter.

PROPOSED DIPHTHERIA HOSPITAL, ST. ALBANS.

Mr. W. W. E. Fletcher, M.B., recently held an inquiry into an application made by the St. Albans City Council for permission to borrow 3,320*l.* for the provision of additional isolation hospital accommodation on the Folly Mead site. Mr. E. P. Debenham (Town Clerk) said that the city and neighbourhood was without proper isolation hospital accommodation for diphtheria. Mr. G. Ford (City Surveyor) produced plans of the proposed new block, and went through them in detail with the Inspector.

TREVELYAN HALL, WESTMINSTER.

This hall, which was dedicated on December 4, adjoins, and is an extension of, the mission buildings of St. Matthew's, Westminster, and occupies the site of some very tumbledown cottages and a narrow alley, which has been formally closed. On the ground floor, in addition to the kitchen and an enlarged parish workers' room, are rooms for the parish nurses, waiting-room, boiler-room, and lavatories. On the first floor, approached by a separate entrance, is the Trevelyan Hall, having an area of some 1,560 super. ft. It is divisible, by means of a large revolving partition, so as to form a smaller hall or afford two rooms for clubs, classes, etc. An important painting by E. de Morgan, entitled "Attainment," is the chief ornament of the interior. The wood dado and ceiling ribs are painted a dark green, and the walls will be distempered a pale green. The maximum of light and air has been obtained, and there are inlet and extract ventilators. The building is warmed by hot-water radiators, and lighted by electricity, a secondary system of gas lighting being provided. There are two emergency exits and staircases as well as the main staircase. The frontage to St. Anne's-lane is largely of terra-cotta and partly of glazed brick. The work has been carried out from the designs of Mr. Harold S. Rogers, architect, by Messrs. F. C. Hoskins & Co., whose tender was the lowest of the four invited. Among the firms employed were Messrs. J. C. Christie (warming and lighting); Mark Fawcett & Co. (fireproof flooring and steel roof principals); Saml. Haskins & Co. (revolving partition); Wm. Pearce, Ltd., Birmingham (iron casements and glazing); Shaw's Glazed Brick Company, Whitekirk, Darwen (facing bricks and terra-cotta); and Winser & Co. (drainage and sanitary fittings).

DISPENSARY, RETFORD.

A new dispensary has been built in connexion with the Retford Hospital, at an approximate cost of between 900*l.* and 1,000*l.* The building has been designed by Mr. W. Southall, architect, and the contract has been carried out by Messrs. Thomas Hopkinson & Son.

GENERAL POST OFFICE, DUBLIN.

Particulars have just been issued by the Commissioners of Public Works of the extension of the General Post Office, Dublin. It is to be erected in Princes-street, adjoining the existing post office buildings, and the new structure will cover an area of over 6,300 sq. ft. The building is designed to be fireproof, the floors being formed of tubular concrete on cased-steel girders, supported by cased-steel stanchions. The walls will be chiefly brick, the main front to Princes-street being faced with granite ashlar to match the present buildings.

NEW HOTEL, SHEFFIELD.

Progress is being made on the erection of the new Grand Hotel in Leopold-street, Sheffield. The building will contain a corridor lounge, 140 ft. long, overlooked by a band and tea gallery, a large conference-room, a dining-hall, capable of seating 200 guests at a public dinner, as well as many smaller dining-rooms. All the public rooms are on the ground floor. Numerous private suites of rooms are provided, in addition to which there are more than 160 guests' bedrooms, in each of which will be fitted a telephone. The architects are Messrs. Connor & Chorley, of Leeds.

COUNTY OFFICES, CARDIFF.

The Glamorgan County Council Standing Joint Committee received thirteen tenders for the superstructure of the new county offices in Cathays Park, Cardiff, and have accepted that of Messrs. Turner & Sons, of Cardiff, at 51,542*l.*, subject to their executing a contract in the approved form within three weeks, and to their sureties becoming bound in two-thirds of the contract sum for the due performance of the contract. The Committee have decided to roof the building with Preselly olive slates, at an additional tendered price of 84*l.*

SKATING-RINK, LIVERPOOL.

A new rink has been opened in Renshaw-street, Liverpool. The building is entered through a hall and corridor. The ceiling and upper part of the walls of this section of the premises have been treated with fibrous plaster work, carried out by Messrs. Henry Johnson & Sons, of Liverpool. The floor is of Terrazzo marble. On the left-hand side of the corridor are the gentlemen's dressing-rooms, staff, and cycle storage rooms, and ladies' lavatory, whilst on the opposite side are the ladies' dressing-rooms, staff-room, and gentlemen's retiring-room. There are four pairs of emergency exit doors to the main building. On the immediate left are the ladies' and gentlemen's cloakrooms and the skate-rooms, between which and the main rink is a large open space. The main rink has a skating surface of 25,000 ft., being 240 ft. long and nearly 100 ft. wide. The skating floor has been constructed by Messrs. J. C. Plimpton & Co., Liverpool. The steel principals are 30 ft. high, and the distance between the rink floor and the apex of the roof is 52 ft. The firm supplying the steel framework are Messrs. Robinson & Kershaw, of Manchester. The electric installation has been done by Messrs. Lightfoot Brothers, of Manchester. Mr. Thos. M'Hugh, Bootle, executed the plumber's work, and Mr. Arthur Lloyd, of Liverpool, did the painting. The architect was Mr. Sydney Dalton, Liverpool.

TRADE NEWS.

WE are informed that the purchase by a local company of Messrs. Marsh, Son, & Gibbs, Ltd., concern recently announced in the Press, embraced only a portion of the area of the Hartham Park mineral originally leased to Messrs. Marsh, Son, & Gibbs, Ltd. A very valuable portion, consisting of upwards of 60 acres of this land, has been acquired by the Yockney and Hartham Park Stone Company, Ltd. (in which are incorporated several old-established firms), and active operations are now being carried on by them.

The Marbolith Flooring Company are now laying their "Marbolith" new jointless flooring at the new German Y.M.C.A. building in London.

The "Shark Grip" Tiling Company, Ltd., have been accepted to carry out the tiling of the sculleries to the War Office in the Queen Alexandra Millbank Hospital. They are also tiling the radium factory, Limehouse; the St. Mary's Hospital, Plaistow; the Fishguard Bay Hotel, for the G.W.Ry., for which latter place they have secured also the parquet flooring contract for a large amount.

The extensions to the Small-pox Hospital, Wakefield, are being warmed and ventilated by means of Shorland's double-fronted warm-air ventilating patent Manchester stoves and Manchester grates, supplied by Messrs. E. H. Shorland & Brother, of Failsworth, Manchester. The firm are also supplying their grates for the Small-pox Hospital at Redbourn.

The tower of the parish church, Dartford, Kent, is being restored, and a new clock with chimes is being erected. It will have two 6-ft. illuminated dials, play the Westminster chimes on four bells, and strike the hours on the largest bell in the tower. The tender of Messrs. John Smith & Sons (Derby) has been accepted.

Digitized by Google

Stained Glass & Decoration.

MEMORIAL WINDOW, HEXHAM ABBEY.

A new stained-glass window, designed and executed by Messrs. Davidson & Walker, Newcastle, has been placed in Hexham Abbey. The window is of interest inasmuch as it contains some glass dug up this summer at the excavations at Corstopitum, near Hexham. The window is intended to commemorate the completion of the rebuilding of the nave.

Sanitary and Engineering News.

ROYAL SANITARY INSTITUTE.

At an examination in sanitary science as applied to buildings and public works, held in London on December 3 and 4, 1909, nineteen candidates presented themselves, and the following six candidates were granted certificates:—T. S. Attlee (Westminster); E. W. Pullen (St. Albans); A. Rusbridge (Reading); G. H. Thomas (Tonbridge); E. C. Weeds (Hythe); W. N. Wright (Woodford).

SEWAGE DISPOSAL, MINWORTH.

Major C. E. Norton, R.E., Inspector to the Local Government Board, held an inquiry a short time ago into an application by the Birmingham Tame and Rea District Drainage Board for permission to borrow 9,311*l.* for purposes of sewage disposal (including the execution of works in the hamlet of Minworth), and for sanction to the application of a capital sum of 1,000*l.* received from the Town Council of Sutton Coldfield towards defraying the cost of the proposed works. The Town Clerk, in supporting the application, said that three sums were involved. The first was 911*l.*, excess expenditure in respect of tanks at Ashold and Tyburn. The next part of the application was in respect of 1,400*l.*, for widening and improving the River Tame at Bromford. The Town Clerk said the improvement was very desirable, and the Board were anxious to carry out the work as soon as possible. The remaining portion of the application was for a loan of 8,000*l.*, for an extension of the sludge-conveying scheme. In July last the existing sludge main broke down, and for two or three days, while repairs were being executed, the Board were placed in considerable difficulty. The Engineer afterwards advised the Board to duplicate the main and carry out certain additional works for rendering the treatment of the sludge even more efficient than it was now. There was no opposition to any part of the application.

WATER SUPPLY, PATELEY BRIDGE.

A scheme of water supply for Pateley Bridge has been carried out by the engineer, Mr. Edward Wilson Dixon, of Messrs. Dixon & Ritchie, and by the contractor, Mr. J. H. Grange, of Pateley Bridge. The reservoir contains 90,000 gallons when filled.

DRAINAGE SCHEME, BARCOMBE, SUSSEX.

The Chailey Rural District Council having applied for a loan of 1,550*l.* for the purposes of drainage at Barcombe, a Local Government Board inquiry into the proposal was recently held by Mr. H. Shelford Bidwell, M.Inst.C.E. Mr. Charles Patrick, Clerk to the Council, gave evidence in support of the scheme, and also Mr. Nicholls, of Messrs. Beasley & Nicholls, engineers, who broadly described the scheme as a main sewer through the middle of the village to which the houses on both sides would be connected, and the sewage conveyed to septic tanks.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. H. Wakeford & Sons, architects and surveyors, have removed from No. 267, Clapham-road, S.W., to No. 161, Clapham-road, S.W. Their telephone number will remain as at present, viz., Hop. 1,891.——Messrs. Horne & Co., surveyors and auctioneers, have removed their offices from 8, Delahay-street to 35, Old Queen-street, Westminster, S.W.——Messrs. Walter Lawrence & Son, building contractors, of Canal Works, Waltham Cross, and Moselle Works, Tottenham, have removed their head office to 21, Finsbury-circus, E.C., where all communications should now be addressed.

CHRIST CHURCH, NEWGATE-STREET, E.C.

At the sitting of the Consistory Court of London on November 26 Dr. Tristram, K.C., Chancellor of the Diocese, agreed to make an order in respect of compensation in the matter of the church's easements of air and light. The new Post Office upon the Christ Hospital site, being closer to the church and more lofty than the former school buildings, interferes with those easements. Under the provisions of the Post Office Sites Act of 1907, and after consultation between Sir Henry Tanner and Mr. Blomfield Jackson, representing the Postmaster-General and the vicar and wardens respectively, a sum of 1,000*l.* has been fixed upon in settlement of the claim, and will be paid by the Crown to the Ecclesiastical Commissioners for investment for the benefit of the incumbent of the living.

ARCHITECTURE AND STEEL STRUCTURES.

The second meeting of the present session of the Architectural Section of the Royal Philosophical Society of Glasgow was held in the rooms, 207, Bath-street, on the 6th inst. Mr. Alexander Cullen, F.R.S.E., presided. A paper on "The Architectural Element in Steel Structures" was read by Mr. Robert Boyle, B.Sc. There was, he said, no fine architectural work associated with bridges in Britain such as existed on the Continent. Many of the latter were the joint product of architects or sculptors and engineers. A large bridge was a national work. It was monumental to its designer, its builder, and its town. Its influence merited attention from the engineer, the architect, and the people. There was a disinclination to spend money on that which was beautiful as opposed to that which was only useful. Sculpture work on piers and approaches were features of large continental bridges. It was remarkable that in the vicinity of a public park in Glasgow (Glasgow Green) there should be two steel-plate girder bridges boarded up and painted to represent masonry arched bridges. This was a violation of architectural and æsthetic principles, and unworthy of an advanced municipality. The modern workshop building was almost entirely steel and glass. In steel-frame buildings the structure should be clear to the intelligent beholder. Static correctness was the source of much real beauty. The appearance of railway-stations largely depended on the roof and the entrance. Favourable reference was made to St. Enoch and Central Stations. That structure was the noblest which expressed in an honest and truthful way the most useful, the most appropriate, the most economical, and therefore the most beautiful result.

MORTAR IN PLYMOUTH.

The Borough Surveyor of Plymouth reports having taken under the new by-laws several samples of mortar during the past month for examination from houses in course of erection. All the samples were deficient in lime, and in some instances unsuitable materials had been used. As, however, these were the first samples taken under the new by-laws, he had merely warned the builders concerned, intimating to them that if in future the proper proportion of lime was not used or unsuitable materials were employed, he would be compelled to serve notices to pull down the work upon which the unsatisfactory mortar had been used, and also to take legal steps to recover penalties.

APPRENTICESHIP SCHEME FOR SOUTHWARK.

The Walworth and Newington Apprenticeship and Skilled Employment Committee, formed some months ago under the presidency of Canon Horsley, now Mayor of Southwark, have lately received, in response to circulars issued amongst boys and girls leaving school, 150 applications for assistance, and the Committee have been able to find suitable positions for twenty-three boys and twenty-two girls. They have opened a loan fund on behalf of parents who need ready money for paying premiums as part of their scheme to provide industrial training by the apprenticeship and the attendance at technical classes and trade schools of boys and girls.

APPRENTICESHIP IN FRANCE.

This question is now being seriously considered in France. The Chambers of Commerce have proposed several solutions which have not, however, received much encouragement so far. M. Jean Cruppi, Minister of Commerce, has also recently published, under the title, "The Economic Expansion of France," a treatise, in which he discusses technical instruction, which he says is far from reaching the extension attained in England and Germany. M. Cruppi's researches show that technical subjects are taught in a few industrial schools, a few professional schools, and in a few special courses organised by some private societies; 870,000 young men and women under 18 years of age are engaged in commercial and industrial occupations. In 1908 the numbers receiving technical instruction in these branches were 22,000 at the schools, and perhaps another 50,000 who attended private courses. Therefore, roughly speaking, 800,000 young workmen and employees receive no technical training. In Germany the technical colleges, schools, and extension courses give instruction to about 330,000 students, the annual expenditure reaching 30,000,000 francs. It is considered that unless the Chamber makes a speedy use of the reports it collected several years ago French superiority in skill and intelligence will be a thing of the past.

THEATRE REGULATIONS IN PRUSSIA FOR THE PLANNING AND FITTING UP OF THEATRES, ETC.

Under the new regulations for theatres, which supersede those of 1891, theatres are no longer divided into large and small premises, but are all classed under one head. The building must be 20 metres distant from the houses opposite, and if erected in a street must have 9 metres wide courtyards on either side of the auditorium. Door and window openings must be 9 metres distant from adjoining buildings. Dwelling-rooms may only be situated on the ground floor level, for the exclusive use of the caretaker. No business premises for letting purposes are permissible. The stalls of the auditorium are to be on the ground floor only, and are to be arranged in groups of five rows, each group having a separate exit on either side. In calculating for passages and doors a minimum of 1 metre per seventy persons is allowed. Each seat must be at least 50 by 80 centimetres; the slope of the floor must not be greater than 5 centimetres in every metre, and no steps are admissible. On the staircases 1 metre in width is allowed for every ninety persons, with a minimum width of 1·25 metre. Separate staircases must be provided for every story of the building, except for the dress circle and stalls, which may have staircases in common. For exits into the open air 1 metre in width is allowed for every ninety persons. For artificial lighting only electricity is permissible, and all heating must be from a central source.

CLARKE'S TABLES.

We have received from Mr. B. T. Batsford a copy of "Tables and Memoranda for Plumbers, Builders, Sanitary and Electrical Engineers," etc., by Mr. J. Wright Clarke, who for some years was lecturer on plumbing at the Regent-street Polytechnic. This little pocket-book, measuring only 2¾ in. by 1¾ in. by ½ in. thick, contains about 300 pages filled with data on almost every detail pertaining to various branches of domestic engineering. It is a wonderful collection of notes useful to every architect, builder, and sanitary engineer, and the present fifth edition has been brought thoroughly up to date by the inclusion of new tables and paragraphs dealing with recent developments in electric lighting.

LECTURES AT CARPENTERS' HALL.

The Carpenters' Company has decided to give in its hall, beginning in January next, a series of lectures on the arts connected with building, in continuation of those delivered in the early part of this year, and many distinguished gentlemen have been kind enough to undertake to lecture. The lectures will, as before, in the first place, be for all craftsmen and those engaged in actual trades in connexion with the constructive arts, but all of either sex and of any trade or profession are invited to attend. Admission will be free, by ticket. The following is the list of proposed lectures:—

January 12.—Professor Pite, F.R.I.B.A.: "What is Artistic Craftsmanship?"
January 19.—Mr. M. H. Baillie Scott: "The Art of Building, with special reference to the use and abuse of materials."
January 26.—Mr. Banister F. Fletcher, F.R.I.B.A.: "The Carpenter's Craft."
February 2.—Sir Brumwell Thomas, F.R.I.B.A.: "The Joiner's Craft."
February 9.—Mr. Arthur Stratton, A.R.I.B.A.: "Native Craftsmanship in Timber, Brick, and Stone before the XVIIIth. Century."
February 16.—Mr. Lawrence Weaver, F.S.A.: "The Art of the Lead Worker."
February 23.—Mr. George P. Bankart: "The Art of the Plasterer."
March 2.—Mr. C. F. A. Voysey: "Castles in the Air."
March 9.—Mr. Halsey Ricardo, F.R.I.B.A.: "The Use of Coloured Materials in Building."
March 16.—Professor G. E. Moira: "Mural Painting."
March 23.—Mr. R. Anning Bell, R.W.S.: "Coloured Reliefs and Mosaic."
March 30.—Mr. F. W. Pomeroy, A.R.A.: "Sculpture as Applied to Buildings."
April 6.—Mr. Thackeray Turner, F.S.A., F.R.I.B.A.: "The Craft of Repairing Buildings."

Tickets of admission to the lectures can be obtained free, from Mr. J. H. Freeman, the Clerk, Carpenters' Hall, London-wall, E.C., from whom particulars can also be had in regard to the competions for prizes offered by the Company.

HELLENIC SOCIETY.

Dr. Emmanuel Loewy has been asked to fill the vacancy caused by the death of Professor A. Furtwaengler on the list of hon. members

Digitized by Google

of the Society for the Promotion of Hellenic Studies.

PLYMOUTH TOWN COUNCIL AND CONCRETE BLOCKS.

At the meeting of the Plymouth Town Council on Monday the Works Committee reported having considered a letter transmitted by the Local Government Board from the Association of Trade Protection Societies inquiring as to whether it was possible for the by-law relating to new streets and buildings in Plymouth to be amended so as to enable hollow concrete blocks to be utilised for buildings. The Committee recommended that the Local Government Board be informed that the Council saw no reason to alter the existing by-laws. Alderman Debnam moved as an amendment that the recommendation be referred back for further consideration. He said this was a question of trying to bring Plymouth up to date; it had nothing to do with builders, but deeply concerned other classes of the community. If the by-laws were altered in the direction indicated, it would mean cheaper and drier dwellings, more work for unskilled labour, and workmen's houses could be put up at 30 per cent. less cost. There should be no difficulty in securing a standardisation of the blocks to be used.—Mr. Eyre, in seconding the motion, said the Government had been putting up houses for their warders at Princetown of concrete blocks. There could be no reasonable doubt that concrete blocks would be suitable for buildings at Plymouth.—Mr. Pengelcy said it was solid concrete and not hollow blocks that were used at Princetown.—Mr. Sayer said concrete houses were both fireproof and vermin proof. In the result the amendment was carried.

ELECTRICITY EXTENSION SCHEME, WALSALL.

Mr. H. R. Hooper, Local Government Board Inspector, held an inquiry recently into an application of the Walsall Town Council for sanction to borrow 35,000*l.* for the purposes of extending and improving their electricity undertaking. The Town Clerk (Mr. J. R. Cooper) explained that the existing works were established many years ago, and it was time they took a step forward and arranged to produce an alternating current system. In reply to the Inspector, the Engineer (Mr. Barnard) said he was anxious to get the three-phase system alongside the present works, so as to deal with applications of large power.

FURNITURE, PICTURE, AND SILVER SALES.

At the sale at Christie's, on December 10, of the property of Mrs. Downing Fullerton, of Purley Park, Berks, a settee and eight fauteuils, carved and upholstered with tapestry—a gift of Queen Marie Antoinette to Antony M. Storer, Secretary to the British Embassy—were bought for 5,000 guineas by Messrs. Lowis & Simmonds. Other lots included a similar suite, of the Louis XV. period, and covered with Aubusson tapestry—410 guineas (Campbell); a panel of old Brussels tapestry, 10 ft. square—600 guineas (Fabre); and an oval enamelled gold locket, English work of *temp.* James I., with a miniature by Peter Oliver—820 guineas (Morgan). Two portraits after the Holbein school, painted on panel, belonging to Mrs. Hartmann's collection, have been sold at Christie's to Messrs. Agnew for 1,000 guineas; and, at Gloucester, a set of twelve Chippendale chairs—290 guineas, a Chippendale mahogany arm-chair—84 guineas, a mahogany wine cooler—80 guineas, and a Chippendale double chair-back settee—200 guineas. The Ord collection, sold at Fornham House, near Bury St. Edmunds, included two old Sheffield tea trays—17 guineas each: five Queen Anne three-prong forks (1713), by B. Watts, 4 oz. 10 dwt., at 92s. per oz.; a Queen Anne tea caddy (1711), 5 oz. 15 dwt., at 115s. per oz.; and a Delft vase—50 guineas. The late Mr. F. G. Hilton Price's collection of early English spoons included a Commonwealth spoon, with a figure of St. Simon Zelotes (1650)—35*l.*, and a Charles I. Apostle spoon, with a figure of St. Matthias (1639)—14*l.* 10s. (Crichton).

FITZWILLIAM MUSEUM, CAMBRIDGE.

Amongst the donations which have been recently made to the Museum are three cartoons by Sir Edward Burne-Jones for windows at Lyndhurst Church, and his study for the figure of Perseus. The Museum authorities have purchased 222 woodcut illustrations after drawings by Millais.

THE LEIGH WOODS, CLIFTON.

Mr. George A. Wills, of Burwalls, near Bristol, has been elected Chairman of the Committee for the management and upkeep of the Leigh Woods and Stokeleigh Camp, consisting of 73 acres on the Somersetshire side of the Avon gorge, which he has acquired from the Leigh Woods Land Company for 12,500*l.*, and has conveyed to the National Trust as a public pleasure-ground. The Committee have resolved to maintain the woods, which comprise the Nightingale valley and the Hanging Woods, in their present state of wild sylvan beauty, and to preserve the ancient camp untouched, though they will make a superficial examination of its outlines and prehistorical vestiges. The Leigh Woods Company was formed some years ago for the purchase from private owners of the entire property, extending over nearly 170 acres, with the object of using much of the land for building purposes. The National Trust, the Bristol Kyrle Society, the Leigh Woods Land Company, and the Bristol and Gloucestershire Archæological Societies have nominated representative members of the Committee.

AN EARLY WORK OF TURNER.

At Sotheby's rooms last week a copy of H. Boswell's "Picturesque Views" of the United Kingdom, 1785, with numerous plates coloured by Turner, was sold for 30*l.* to Mr. Needes. The plates were coloured by Turner when a schoolboy at John White's School (now a clothier's shop) in the High-street, Brentford. Turner was paid 2d. per plate. At that time, 1785, he lodged with his uncle, Marshall, in the old market-place.

Law Reports.

ACTION FOR BREACH OF COVENANT.

In the Chancery Division on the 10th inst. Mr. Justice Parker delivered judgment in the case of Tubbs *v.* Esser, an action by the plaintiff for a perpetual injunction to restrain the defendant from committing an alleged breach of covenant.

The facts were these:—Plaintiff was the owner of freehold houses at or near Fentham-road, Gravelly-hill, near Birmingham, the defendant being the assignee of two of the houses for the residue of terms of ninety years created by the leases, which contained covenants that the lessees would not use, exercise, or carry on, or permit to be used, exercised, or carried on upon the demised premises or any part thereof any trade or business whatsoever; but would keep the demised houses as and for private dwelling-houses. It appeared that defendant had let the gable ends of his two houses to bill posters, who had displayed large advertisements on the walls let to them. Plaintiff's case was that this was a breach of the covenant in question, and claimed the injunction as stated. Defendant denied that what he had done was a breach of the covenant.

Mr. Justice Parker, however, held that it was a breach of the covenant, and granted the injunction as prayed for with costs; but suspended the operation of the injunction until March 25, 1910, as the defendant could not before that date get rid of the contract he had made with the bill posters.

Patents.

APPLICATIONS PUBLISHED.*

24,533 of 1908.—John Somerville Highfield: Electrical wiring for houses and the like.

24,636 of 1908.—François Pollet: Tools for cutting grooves in wooden casings or mouldings and the like.

25,206 of 1908.—Albert Carl: Ceilings and building blocks employed in their construction.

25,224 of 1908.—Joseph Milner Lockhart and Herbert John Jenkinson: New appliance to be used in "boning" or laying drain or other pipes to a desired fall or gradient and generally for use in laying or fixing to a gradient.

25,227 of 1908.—Albert Rhodes: Firegrates for kitchen and like ranges.

25,244 of 1908.—Thomas Harden: Apparatus for machining pipe ends to form spigot and socket joints.

25,470 of 1908.—Walter Longland and Charles Edward Larard: Machines for testing the strength of materials by impact.

1,408 of 1909.—Mark Fawcett: Steel and concrete construction.

1,943 of 1909.—Charles Henry Derbishire.—Apparatus for riddling or heating stones.

2,126 of 1909.—Charles Braunstein: Low-pressure steam-heating apparatus.

2,947 of 1909.—Georg Hiller: Centrifugal mixer of concrete and other mortar mixtures.

3,039 of 1909.—Paul Brostowski, Robert Siebert, and Hermann Schlaefer: Device for the automatic operation of window blinds.

3,133 of 1909.—Gwyn Reid Thomas: Apparatus for the manufacture of concrete or composition slabs for walls, partitions, and the like.

5,353 of 1909.—Evered & Co., Ltd., and Joseph George Rollason: Brackets or fittings for certain rods, blind poles, stair and other similar rods, and poles.

6,833 of 1909.—Thomas Utley: Windows and similar closing devices.

8,171 of 1909.—Hermann Bayer: Water-closet basins and seats.

9,136 of 1909.—John Mills: Building bricks or blocks.

13,048 of 1909.—Hercules Herbert Hadley: Reinforced concrete construction.

14,693 of 1909.—John Graham Stewart: Construction of roofs.

15,479 of 1909.—Wallace Pinknie Perkins: Window sashes.

16,949 of 1909.—Robert Henry and William Boyes: Sash fasteners.

17,632 of 1909.—Joseph Duffy: Composite flooring blocks.

18,659 of 1909.—Alfred Watkins: Rotary oil-stones and grinders.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

December 1.—By SWANNELL & SLY (on Premises).

Northwood, Middlesex.—Eastbury-rd., Koh Samui and ¼ acre, f.	£3,4 0

December 7.—By G. W. & H. G. POTTER.

Hampstead.—41, High-st. (s.), u.t. 19 yrs., g.r. 40*l.*, y.r. 70*l.*	255

By J. A. LUMLEY & DOWELL.

Llanfaelog, Anglesea.—Plas Llanfaelog and 26 acres, f.	7 850

By GREEN & SON (at Hammersmith).

Isleworth.—Aylett-rd., f.g. rents 21*l.* 10s., reversion in 91 yrs.	455
West Kensington.—9, Ceylon-rd., f., w.r. 33*l.* 16s.	360

By MADDISON, MILES, & MADDISON (at Yarmouth).

Gorleston, Norfolk.—Dock Tavern-la., freehold land, 1 a. 2 r. 24 p.	1,500

By J. B. ROSEVEAR & SON (at Fulham).

Fulham.—131, New King's-rd., u.t. 75 yrs., g.r. 7*l.* 14s., y.r. 50*l.*	430
3, Eddiscombe-rd., u.t. 80 yrs., g.r. 5*l.* 10s., w.r. 41*l.* 12s.	260

December 8.—By HAROLD GRIFFIN.

Balham.—Chestnut-gr., f.g. rents 30*l.* 10s., reversion in 60 yrs.	835
Boundaries-rd., f.g. rents 32*l.* 19s., reversion in 58 and 67 yrs.	825
Battersea.—35 and 37, Mallinson-rd., f., w.r. 85*l.* 16s.	600
Fulham.—4, Cresford-rd, u.t. 78 yrs., g.r. 5*l.*, y.r. 36*l.*	330
Holloway.—83 and 85, Moray-rd., u.t. 56 yrs., g.r. 13*l.* 13s., w.r. 109*l.* 4s.	500

By NOKES & NOKES.

Barnsbury.—13, 14, and 15, Denmark-rd., u.t. 38 yrs., g.r. 18*l.*, y. and w.r. 140*l.*	450

By SWANNELL & SLY.

Pinner, Middlx.—Love-la., Nascot and ¼ acre, f.	1,055

By WARE & CO.

New Cross.—Achilles-st., f.g r. 7*l.*, reversion in 48 yrs.	250
Chichester, Sussex.—22 to 25, Caledonian-rd., f.	620
Stockbridge, Sussex.—Victoria Villas and plot of land, f.	410

December 9.—By H. J. BLISS & SONS.

Bethnal Green.—Bethnal Green-rd., f.g.r. 50*l.*, reversion in 24 yrs.	1,100
Hornsey.—18, 20, 22, 39, 41, and 43, Coleraine-rd., u.t. 76 yrs., g.r. 36*l.*, y.r. 180*l.*	1,210

By FAREBROTHER, ELLIS, & CO.

Peckham.—5 to 10, 17 to 20, South-gr., f., w.r. 324*l.* 12s.	2,200

By C. C. & T. MOORE.

Mile End.—23 and 25, Copperfield-rd., u.t. 57½ yrs., g.r. 7*l.*, w.r. 65*l.*	250
Leytonstone.—62 and 64, Cecil-rd., f., w.r. 33*l.* 16s.	220

By NEWBON, SHEPHARD, & EDWARDS.

Highbury.—188, 188A, 190, and 190A, Blackstock-rd. (s.), f., y. and e.r. 86*l.*	400
Hampstead.—56, Adelaide-rd., u.t. 34 yrs., g.r. 8*l.*, e.r. 60*l.*	320
Islington.—14, Froome-st., u.t. 38 yrs., g.r. 5*l.*, e.r. 30*l.*	140
Pentonville.—30 and 30A, Hermes-st., u.t. 15 yrs., g.r. 35*l.*, w.r. 106*l.* 12s.	110
Battersea.—28 and 30, Savona-st., f., w.r. 49*l.* 8s.	335
Ponders End.—13, 14, and 15, Perth-ter., u.t. 90 yrs., g.r. 9*l.* 15s., w.r. 46*l.* 16s.	100

By STIMSON & SONS.

Balham.—257, 259, 261, 263, and 269, Balham-high-rd. (s.), u.t. 80 yrs., g.r. 100*l.*, y.r. 510*l.*	4,500
Camberwell.—Picton-st., f.g. rents 27*l.* 4s. 6d., reversion in 5 yrs.	1,440
193, Southampton-st., f., y.r. 50*l.*	345
Coldharbour-la., f.g. rents 62*l.* 2s., u.t. 18 yrs., g.r. 26*l.* 19s. 11d.	220
26, Boyson-rd., u.t. 40 yrs., g.r. 6*l.*, w.r. 67*l.* 12s.	185

By WRIFORD, DIXON, & WINDER.

Shepherd's Bush.—Stowe-rd., f.g.r. 7*l.* 10s., reversion in 58 yrs.	160

***Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.**

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, —; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

DECEMBER 31.—**Cwmgorse.**—CHAPEL.—Plans, specification, and quantities for the erection of a new chapel at Cwmgorse, to seat about 600, not to exceed 3,000*l.* in value. Also for superintending the erection of the same. For further particulars apply to Mr. Owen Williams, Baily Glas Cottage, Cwmgorse, Gwaun-cae-Gurwen.

JANUARY 1.—**Hetton.**—CLUB.—The Committee of the Hetton Working Men's Club invite plans for the erection of a new club. Plans, with estimates, to be sent to Mr. Jas. Widdowfield, Secretary, Hetton Working Men's Club, Pemberton-street, Hetton-le-Hole.

JANUARY 1.—**Larne.**—TECHNICAL SCHOOL.—The Larne Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Victoria-street. A premium of 21*l.* will be paid for the approved design. Further particulars may be obtained from Mr. Thomas Clearkin, Secretary.

JANUARY 27.—**Southampton.**—PAVILION ON THE COMMON.—The Corporation invite designs from inhabitants of the Borough for the erection of a pavilion on the Common at a cost of not exceeding 500*l.* Particulars and conditions may be obtained upon application at the Town Clerk's Office. A premium of 10*l.* will be awarded to the architect whose design shall be chosen by the Public Lands and Market Committee of the Council, and a second premium of 5*l.* will be awarded.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—**The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.**

FEBRUARY 1.—**Oldham.**—PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

* MAY 31.—**Karachi.**—MUNICIPAL OFFICE.—The Municipality of Karachi invite elevation designs and detailed plans and estimates for a new Municipal Office. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 18.—**Keighley.**—RESIDENCE.—Erection of residence in Woodville-road, Keighley. Names to Messrs. W. H. & A. Sugden, architects, North-street, Keighley.

DECEMBER 20.—**Macclesfield.**—BAKERY.—(1) New bakery, bath-house, and lavatories, etc.; (2) providing and fixing bakery plant, machinery, and oven, for the Guardians. Copies of specification and quantities can be obtained from Messrs. Whittaker & Bradburn, architects, 19, King Edward-street, Macclesfield.

DECEMBER 20.—**Maidenhead.**—REPAIRS.—Certain repairs at Leopold House, Grenfell-road, for the Guardians. Copies of specification can be obtained on application at the offices of Mr. William Weed, Clerk, Queen-street-chambers, Maidenhead.

DECEMBER 20.—**Mickletown.**—ALTERATIONS TO SCHOOL.—West Riding C.C. Education Department (Methley District Sub-committee) invite tenders for alterations, etc., to be done at Mickletown Provided School. Specifications may be obtained from Mr. B. Leah, Education Office, Castleford.

DECEMBER 20-JANUARY 17.—**Okehampton.**—SCHOOL.—Devon County Education Committee invite tenders for a new higher elementary school for 120 children, with laboratory, cooking, and manual training rooms, at Okehampton. Bills of quantities will be available in due course on payment of 1*l.* 1s. Apply to the County Architect (Education), 1, Richmond-road, Exeter, enclosing a crossed cheque drawn in favour of the County Treasurer.

DECEMBER 21.—**Aberdeen.**—LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of the old Post-office, Market-street, Aberdeen, for a Labour Exchange. Drawings and a copy of the conditions and form of contract may be seen on application to the Postmaster, Market-street Branch Post-office. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Parliament-square, Edinburgh, on payment of 1*l.* 1s.

DECEMBER 21.—**Bridlington.**—PREMISES.—Taking down and rebuilding the premises, No. 4, Queen-street, for Mr. E. C. Davis. Drawings, etc., may be seen at the office of Mr. J. Earnshaw, architect, Carlton House, Bridlington.

DECEMBER 21.—**Carn Brea.**—HOUSES.—Erection and completion of three houses at Carnartlien Farm, near Carn Brea Station, according to plans, etc., which may be seen at the office of the proprietor, Capt. T. Negus, Chapel-street, Camborne, and at the office of Mr. Sampson Hill, architect.

DECEMBER 21.—**Closeburn.**—ACADEMY BUILDING.—Mason, joiner, slater, plumber, plaster, and glazier and painter works of a new academy building to be erected at Wallace Hall, Closeburn, for the School Board. Plans, etc., may be seen, and schedules of quantities obtained, on application to Messrs. James Barbour & Bowie, architects, Dumfries.

DECEMBER 21.—**South Moor.**—OUTBUILDINGS, ETC.—Plans, etc., for new outbuildings, yards, street formation, sewerage, etc., to 100 houses at South Moor may be seen at the offices of the architect, Mr. J. Wm. Rounthwaite, A.R.I.B.A., 15, Mosley-street, Newcastle-on-Tyne. Quantities will be supplied on deposit of 1*l.* 1s.

DECEMBER 22.—**Hensingham.**—ALTERATIONS.—Alterations, etc., to the property of Mr. Wilkinson, 127 to 129, Main-street, Hensingham. Plans, etc., may be seen at the office of Mr. Jacob Glaister, architect, 48, High Church-street, Whitehaven.

DECEMBER 23.—**Merthyr Tydfil.**—DORMITORIES.—Tenders are invited for the erection of temporary dormitories, etc., at the Union Workhouse, Merthyr Tydfil. Plans, etc., may be seen upon application to the Master of the Workhouse, or at the office of the architect, Mr. Thomas Roderick, Clifton-street, Aberdare, from whom bills of quantities may be obtained.

DECEMBER 27.—**Stockport.**—FIRE-ESCAPE STAIRS.—Tenders are invited for the provision and erection of two iron fire-escape stairs at the Workhouse, Shaw Heath. Persons tendering must submit specification, with sketch of staircases, together with their tender therefor. Further particulars may be obtained on application to the Workhouse Master between 9 a.m. and 12 noon.

DECEMBER 28.—**Exeter.**—SCHOOL.—Tenders are invited for the erection of school buildings, new day-room, for the girls' department, and other work, West of England Institution for the Blind, Exeter. Drawings, etc., can be seen on application to the architect, Mr. James Jerman, F.R.I.B.A., 1, Bedford-circus.

DECEMBER 30.—**Bitton.**—SCHOOL WORKS.—The Gloucestershire Education Committee invite tenders for the formation of playgrounds and the erection of boundary walls at Bitton Council School, near Bristol. Particulars may be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester.

DECEMBER 31.—**Dublin.**—BUILDING WORKS.—The Board of Public Works invite tenders for the building works and supplies required by the Commissioners of Public Works, Ireland, at the several buildings, etc., in their charge in Dublin and its vicinity. Forms, etc., will be furnished on deposit of 1*l.* Mr. H. Williams, Secretary, Office of Public Works, Dublin.

JANUARY 1.—**Ashby-de-la-Zouch.**—SCHOOL.—Leicestershire C.C. Education Committee invite tenders for the erection of a new elementary school at Ashby-de-la-Zouch, together with out-offices, drainage, etc. Bills of quantities, etc., may be obtained from the Surveyor of Schools, 33, Bowling Green-street, Leicester, on payment of a sum of 10*l.* 10s. Conditions of contract and the drawings may be inspected at the offices of the architect, Mr. John Day, 8, New-street, Leicester.

JANUARY 5.—**Aberdare.**—HOMES.—Merthyr Tydfil Guardians invite tenders for the erection of a pair of cottage homes for children at Abercwmboi, Aberdare. Plans, etc., may be seen, and bills of quantities obtained, at the office of the architect, Mr. Thomas Roderick, Clifton-street, Aberdare.

* JANUARY 5.—**Millbank.**—ADDITIONS AND ALTERATIONS.—The Secretary of State for War invites tenders for reappropriation of medical officers' and quartermasters' quarters, and erection of a hospital for officers. See advertisement in this issue for further particulars.

JANUARY 7.—**Bedford.**—REFUSE DESTRUCTOR WORKS.—The Urban Sanitary Authority, acting by the T.C. of Bedford, invite tenders for the erection of certain buildings in connexion with a proposed refuse destructor. Copies of the general conditions, etc., may be obtained, and the drawings inspected, on application to their Engineer, Major Hector Tulloch, C.B., R.E., No. 28, Victoria-street, London, S.W., on payment of a deposit of 3*l.* 3s. The Engineer will also attend at the Town Hall, Bedford, on December 16 and 17, when the drawings may also be inspected and copies of the bills of quantities, etc., obtained.

JANUARY 7.—**Cefn Coed.**—SCHOOL.—Breconshire Education Committee invite tender for the erection of a new infants' school, for 350 places, at Cefn Coed. Names to Mr. Charles W. Best, M.Inst.C.E., Surveyor to the Breconshire Education Committee, County Hall, Brecon, with particulars of works recently carried out, and the names of two references relative to the quality of the work done.

JANUARY 7.—**Dyffryn Crawnon.**—SCHOOL.—Erection of a new mixed school, for forty places, at Dyffryn Crawnon, near Llangynidr. Names to Mr. Charles W. Best, M.Inst.C.E., Surveyor to the Breconshire Education Committee, County Hall, Brecon, with particulars of works recently carried out, and the names of two references relative to the quality of the work done.

JANUARY 8.—**Marrick.**—HOUSE.—Pulling down and re-erecting a dwelling-house at Marrick, near Reeth, Swaledale, for Mr. John Blenkiron. Plans, etc., can be inspected on the site at Walker House, Marrick, on the 18th and 20th inst. Afterwards from the 24th to the 31st inst. at the offices of Mr. Frank Martin, architect, 2, Prebend-row, Darlington.

* JANUARY 10.—**South Farnborough.**—SCHOOL.—The Southampton C.C. invite tenders for new Council school at South Farnborough. See advertisement in this issue for further particulars.

* JANUARY 17.—**Chelmsford.**—SCHOOL.—The Chelmsford Education Committee invite tenders for school at Trinity-road, Springfield, in the Borough of Chelmsford. See advertisement in this issue for further particulars.

* JANUARY 17.—**West Silvertown.**—SCHOOL EXTENSION.—The West Ham Education Committee invite tenders for extension of schools at West Silvertown. See advertisement in this issue for further particulars.

* JANUARY 18.—**Macclesfield.**—DETACHED VILLA.—The Committee of the Cheshire County Asylum, Parkside, invite tenders for a detached villa for private patients, Parkside Asylum, at Macclesfield. See advertisement in this issue for further particulars.

NO DATE.—**Freshwater.**—PREMISES.—Re-erection of Mr. H. Dowty's premises at Freshwater. Copies of the plans, etc., on application in writing to Mr. J. W. Newman, surveyor, Station-road, Freshwater.

NO DATE.—**Wycombe Marsh.**—COTTAGES.—Taking down old building and erecting two cottages at Wycombe Marsh. For particulars apply to Mr. A. W. Nash, architect, Priory-avenue, High Wycombe.

ENGINEERING, IRON, AND STEEL.

DECEMBER 20.—**Honley.**—FOOTBRIDGE, ETC.—Honley U.D.C. invite tenders for (1) erection of iron footbridge over the River Holme at Newtown, Honley; (2) laying 250 lin. yds. of 12-in. by 8-in. kerb in Old Turnpike-road. Plans may be seen, and bills of quantities obtained, on application to Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

DECEMBER 20.—**Newbury.**—PUMP.—Newbury Guardians invite tenders for a Mumford or Tangye donkey feed pump. Further particulars may be obtained of Mr. Han. Hill, 95, Northbrook-street.

DECEMBER 21.—**Sheffield.**—STEEL ROOF.—The Directors of the Sheffield United Gas Light Company invite tenders for the supply and erection of a steel roof, 304 ft. long by 105 ft. 6 in. wide, forming the roof over their No. 3 retort house at Neepsend Works. Also for the supply and delivery only of 252 retort mouthpieces, 24½ in. by 16½ in. Drawings may be seen, and bill of quantities, etc., obtained, upon application to the Company's Engineer, Mr. J. W. Morrison.

Digitized by Google

THE BUILDER

VOL. XCVII.—No. 3490. DECEMBER 25, 1909.

Contents.

PAGE

COPYRIGHT IN ARCHITECTURE 687
BUILDER COMPETITION FOR A FAÇADE TO No. 9, CONDUIT-STREET 688
NOTES 689
PORTLAND CEMENT IN SEA WATER 690
THE INSTITUTION OF MUNICIPAL ENGINEERS 690
ST. THOMAS'S HOSPITAL, CIRENCESTER 692
LONDON MASTER BUILDERS' ASSOCIATION 692
THE LONDON COUNTY COUNCIL 693
COURT OF COMMON COUNCIL 694
FIFTY YEARS AGO 695

ILLUSTRATIONS:—
ROYAL ACADEMY GOLD MEDAL DESIGN IN ARCHITECTURE 695

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1909 698
ARCHITECTURAL SOCIETIES 698

CORRESPONDENCE:—
THE CONCRETE INSTITUTE 699

BOOKS RECEIVED 699
MASTER BUILDERS' ASSOCIATIONS, ETC. 699
PROJECTED NEW BUILDINGS IN THE PROVINCES .. 700
NATIONAL AND ANCIENT MONUMENTS OF IRELAND 700
METROPOLITAN ASYLUMS BOARD 700
THE TRIBUNAL OF APPEAL 701
LONDON AND DISTRICT BOROUGH COUNCILS 701
GENERAL BUILDING NEWS 702
APPOINTMENT 702
SANITARY AND ENGINEERING NEWS 702
MISCELLANEOUS 703
CAPITAL AND LABOUR 703

LAW REPORTS:—
ARCHITECT'S ACTION FOR FEES 703
DISPUTE AS TO OWNERSHIP OF WALL 703

LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN .. 704
PATENTS 706
SOME RECENT SALES 706
PRICES CURRENT 706
TENDERS 707

SUPPLEMENT:—
REVIEWS OF BOOKS.
T. A. Gotch's "The Growth of the English House"; E. B. Chancellor's "The Lives of the British Architects, from William of Wykeham to Sir William Chambers"; R. M. Clay's "The Mediæval Hospitals of England"; T. F. Bumpus's "The Cathedrals and Churches of Belgium"; J. S. Ogilvy's "Relics and Memorials of London City"; "Memorials of Old Sussex"; E. Johnston's "Manuscript and Inscription Letters"; A. Millar's "Scumbling and Colour Glazing"; "Oxford and Cambridge"; "Memorials of Old Staffordshire"; F. W. S. Stanton's "Erosion of the Coast and its Prevention"; I. O. Baker's "A Treatise on Masonry Construction"; C. E. Houghton's "The Elements of Mechanics of Materials"; C. F. Marsh's "A Concise Treatise on Reinforced Concrete"; J. W. Smith's "Dustless Road Tar Macadam"; E. Hardy's "The Elementary Principles of Graphic Statics"; "Proceedings of the Incorporated Association of Municipal and County Engineers," Vol. XXXV.

Illustrations.

GOLD MEDAL DESIGN IN ARCHITECTURE, ROYAL ACADEMY, 1909. A DESIGN FOR A NOBLEMAN'S MANSION. BY MR. HARRY H. JEWELL.
1. GENERAL VIEW.
2. ELEVATIONS AND SECTIONS.
3. DETAIL ELEVATION.
4. GENERAL PLAN AND LAY-OUT OF GROUNDS.

Illustrations in Text.

PAGE

ST. THOMAS' HOSPITAL, CIRENCESTER 692
ROYAL ACADEMY GOLD MEDAL DESIGN: A NOBLEMAN'S MANSION:—
SECTION THROUGH GREAT HALL 695
PRINCIPAL PLAN 696
UPPER AND LOWER PLANS 697

Copyright in Architecture.

THE Committee on the Law of Copyright has issued its Report, in the substance of which the question of copyright in architectural design comes up. As an Appendix to the Report the texts of the Berne Convention of 1886 and of the additional Act of Paris and Interpretative Declaration of 1896, and that of the Revised Convention signed at Berlin in 1908, are printed in double column side by side. It may be convenient to reprint here the Section of each which is concerned with architecture. That of the Berne Convention is as follows:—

"*Article* 4.—The expression 'literary and artistic works' shall include books, pamphlets, and all other writings; dramatic or dramatico-musical works and musical compositions, with or without words; works of design, painting, sculpture, and engraving; lithographs, illustrations, geographical charts; plans, sketches, and plastic works relating to geography, topography, architecture, or to the sciences in general; finally, every production whatsoever in the literary, scientific, or artistic domain which can be published by any mode of impression or reproduction whatever."

The corresponding Section of the Berlin Convention runs as follows, the words in italics representing the new elements introduced in the wording:—

"*Article* 2.—The expression 'literary and artistic works' shall include any production in the literary, scientific, or artistic domain, whatever may be the mode or form of its reproduction, such as books, pamphlets, and other writings; dramatic or dramatico-musical works, *choreographic works and pantomimes, the acting form of which is fixed in writing or otherwise;* musical compositions with or without words, works of design, painting, *architecture,* sculpture, engraving and lithography; illustrations, geographical charts, plans, sketches, and plastic works relative to geography, topography, architecture, or science."

The introduction of that single word "Architecture" makes all the difference in the effect of the Section. Architectural drawings, as drawings, were already protected by copyright law; the Berlin Convention proposes to protect architecture as executed work. The difference in the principle, and in the proposed scope of the law, is far greater than may appear at first sight.

The English Committee, or the majority of its members, propose to recognise and adopt that suggestion, but it is clear that they regard it as a matter fraught with difficulty. In their first reference to it they observe that "in giving protection to actual works of architecture as opposed to plans made to guide the architect in his work" (an odd way of putting it, as the plans are really to guide those who are carrying out the work) "the Revised Convention goes beyond British law, which forbids copying plans of a building, but not copying the building itself." They go on to say that whereas plans and models appear to come under the head of "literary and artistic works," and there has been no dissentient evidence on that head, the evidence as to buildings themselves has been somewhat conflicting, "but the Committe were much impressed with that of M. Maillard." The evidence unfortunately is not so far published, but we presume it will be. We should certainly like to see M. Maillard's evidence. If the Revised Convention is to be followed in regard to works of architecture, the scope of British law, it is pointed out, must be enlarged. Nevertheless, we read in the next paragraph:—

"The Committee, by a large majority, have come to the conclusion, after due consideration of the evidence, that it is desirable to recommend that architecture be accepted as matter to be protected, both for the sake of uniformity and because it deserves to be protected and presents no difference in principle from that applicable to the sister arts."

These are refreshing words to read, as coming from an English Committee. But there are some difficulties in the way of their practical application, one of which is suggested by another paragraph:—

"With regard to the term 'architecture,' the Committee gather that the object of the article is to protect works of original and artistic character, and not works of common type which have been frequently produced on previous occasions."

There is where the difficulty will come in, in practical application. Who is to draw the line between "works of original and artistic character" and "works of common type"? It is sometimes a very narrow one, depending chiefly on the taste and special quality exhibited in minor details. All architects can perceive such differences, but it might be very difficult to get a court of law to perceive them. It would seem that it would be almost necessary to appoint a special tribunal to decide such cases. Such a method of deciding the matter would not be impossible, but it would be very new to English habits, and would be likely to be much criticised—by lawyers at all events.

On the other hand, the mere statement that the law as it now stands is such that while no one may copy an architect's drawings any one may with impunity copy his building, if he can do so in the absence of drawings, seems so absurd on the face of it that we may well ask how such an anomaly has been allowed

Digitized by Google

to exist. An architect may design something which is a pure work of art, say a public fountain for instance, and anyone who can sketch sufficiently to carry away the design may go and reproduce it in another position, and claim credit and payment for it as his design. Put in that way, it seems monstrous. The difficulty of dealing with the matter arises in proportion as the structure concerned approaches to the character of a building for utilitarian purposes.

This is evidently in the mind of one of the minority objectors to the Report, Mr. Joynson-Hicks, who says—

"The extension of copyright to architecture itself apart from the actual plans from which the subject-matter of the architecture is built is an entire innovation, and one, I venture to suggest, exceedingly difficult to carry out in practice, and one which might be very detrimental to the progress of building construction. Every century sees an advance in the methods of building construction—witness, for instance, the steel framework and the ferro-concrete buildings of the last few years—and if the form of the building is to be the subject of a fifty-years copyright, I see no reason why the method or material should not be the subject of a patent for an equal term. In effect, it seems to me that if the provisions of the Berlin Convention had been in existence from the beginning of history, they would have tended to prevent improvements in architecture to the detriment of the public and without any commensurate advantage to the author."

That seems plausible at first sight, but the answer to it is that methods of construction are not architectural art, only the structure on which it is based; and it is artistic design in architecture which the majority of the Committee propose to protect. The objection of another member, Mr. Trevor Williams, is a characteristically English one. Buildings, he says, are erected to order, and the architect is remunerated by commission on cost. "The building, when erected, belongs to the client, and copyright protection, if granted, should also belong to the client." So that if a man engages Mr. Sargent, say, to paint him a picture, an inferior artist may copy the picture and sell it as his own, if the owner chooses to allow that, without any permission from or compensation to Mr. Sargent. The argument only needs putting that way to answer itself.

However, it is a great step that a majority in such a Committee have decided that architecture is an art worthy of copyright protection on the same footing as sculpture or painting. And as apparently it is the artistic element in architecture that is to be protected, there is a new inducement for us all to try to make our buildings works of art.

BUILDER COMPETITION FOR A FAÇADE TO No. 9, CONDUIT-STREET.

TO suggest a remodelling of the façade of the Royal Institute of British Architects, to prepare, if we may so say, a fitting mansion for the genius of British architecture, though a task which Jones himself would not lightly have undertaken, is not on that account any the less profitable an exercise to the student; and who, in the service of art, is not a student? It is not to be wondered at that a subject so enticing has brought a host of competitors into the ring to try their fortune, nor need we feel surprise that among so large a number there are some who are totally unfitted for the contest by their lack of the most elementary knowledge of drawing, style, and construction. We may say at once that while the really good designs are comparatively few, the rank and file attain a respectable mediocrity; and the really bad designs are a very small proportion. There is no need to recapitulate here the conditions of the competition; suffice it to say that the problem was to design a suitable elevation for a frontage measuring in round numbers 40 ft. in width by about 55 ft. in height. Our advice that "an endeavour should be made to convey in the design the idea that the façade is that of the central home of the architectural profession" has not in a large number of instances been sufficiently borne in mind. A noble and monumental piece of architecture is the only way by which this idea can be conveyed, and not by an indiscriminate exhibition of the names and effigies of famous masters. A point to be considered in criticising the drawings is the impossibility of any considerable projection or recession, owing to the dimensions of the existing wall and the exigencies of the Building Act, though we allowed 9 in. to be added on the inside.

Taking the drawings mainly in the order in which they are now being exhibited at the premises of the Architectural Association in Tufton-street, No. 5 is one which merits attention. The design owes everything to Palladio (being in fact a réchauffé of the Casa del Diavolo and the Palazzo del Consiglio at Vicenza), but yet possesses sufficient individuality to clear its author of the charge of plagiarism. The large Corinthian order starting direct from the ground-floor line, with the interposition only of low pedestals, is appropriately monumental in effect. We doubt the wisdom of bringing the windows of this floor right down to the floor line, neither do we fancy very much the mode in which the windows of the top floor are half masked by the main entablature, a feature which makes the cornice look silly in section. No. 1 is poorly drawn by comparison, but not altogether without merit. The reminiscence of the Medici tomb is not very happily placed over the centre window of the first floor. The order in this design stands on a basement, as at present. No. 2 is distinctly above the average; the rusticated Doric order of the basement was inspired, we should imagine, by a recent example in Kingsway. The ideas of the author of No. 18 are in advance of his ability to represent them. There is too much sculpture, and that very indifferently drawn. The radiating joints of the cornice serve no constructional or æsthetic necessity. Nos. 20, 22, and 23 are all good in their way; No. 20 is perhaps rather too fussy. The main entablature is ill-designed, in particular the manner in which it is stopped at the centre line of the flanking piers on either side. The bronze (?) caps of the coupled Doric columns would have been better without the attempt to improve them. The tattooing of the Attic order was a mistake; we thought Soane had killed the taste for the Greek fret. No. 22 shows sound drawing and a grasp of the principles of design. The sculpture has a reason for its existence, though we doubt the effect of the low relief figures on the piers at the first-floor level. The basement is satisfactory and dignified. The top-floor windows are contained in the frieze of the Ionic order which stands on the basement. The sculpture in the spandrels formed by the semicircular heads of the ground-floor windows, representing Greek, Roman, Gothic, and Renaissance architecture, was a happy and appropriate idea. The author of No. 23 starts a Corinthian Pilaster order from the ground. The entablature comes between the first and second floor windows; with it the classical feeling dies away, and a not altogether unsuccessful incursion is made into the realms of colour. The design of this portion is, however, of too nondescript a character; the eaves-roof and oak cantilever ill assort with the classicality below. Of No. 28 the best we can say is that it might do for a Palace of Dipsomania in some future exhibition. No. 33 is good, though we do not much care for the high roof. However, it is drawn with skill and knowledge. No. 34 is set out to the best advantage on a blue ground, and looks attractive at first sight. It is not, however, at all suitable for its intended purpose. The lines of the glazing are too restless, indeed rather Chinese. No. 42 has excellent points. The deep terra-cotta frieze, glazed and coloured, containing an appropriate figure design, would be striking in execution, though the whole conception is hardly monumental enough. The author of No. 44 has, metaphorically speaking, sat at the feet of Mr. Norman Shaw. The result is sound and in excellent taste. No. 48 is certainly original, and very artistically drawn and coloured; in fact a design of very high quality, exhibiting a too rare restraint. No. 55 is very taking, with its air of educated simplicity, though its white Pentelikon marble and bands of blue Della-Robbia ware would weather badly in London. On paper it is very refreshing. No. 59 is a bad caricature of a recent building in Euston-square. No. 62 is not a bad design. The panels in colour representing the history of architecture show a pretty fancy. We admire the easy poses of the statues which crown the composition; but what is Schinkel doing here? Apart from his nationality we hardly think the architect of the Nicholai Kirche at Potsdam a suitable companion for the architect of St. Paul's. Schinkel's influence never extended to this country, nor is he representative of a great period of art. No. 64 contains the Ionic, Corinthian, and Composite orders, and we should suggest the addition of light iron galleries and stairs, so that students might readily be able to measure them for their testimonies of study; the elevation might then be justified to some extent.

No. 70 is a good, honest design, if not very striking. The Doric frieze is effective in its very simplicity. The square pilaster piers of No. 71, with the deep and admirably suggested sculptured frieze running across between the first and second floor windows, would afford a bold and pleasing play of light and shade. No. 73 is treated rather in

Digitized by Google

the French manner, and is worth looking at. No. 78 is a very refined piece of work, and will repay inspection. No. 88 should never have been sent in. The coloured marbles of No. 94 make an attractive colour scheme, though unsuited to our climate; however, the design is a very creditable one. No. 96 is an example of "how not to do it." The make-belief dome is absurd. Of the Gothic of No. 99 even Batty Langley would have been ashamed. No. 108 is somewhat of the Palazzo style, and gives evidence of scholarship and ability. We think the heads of the square recesses containing the ground-floor windows should have been more emphasised. No. 144 is a design of great refinement and originality. Few if any of the competitors exhibit such scholarly restraint as the author of No. 149. It is a good example of traditional Classic treatment, with two fluted pilasters with capitals in the centre, flanked by plain pilasters at the sides; the design is simple and dignified, and the whole of the details are worked out with knowledge and refinement.

The response to the competition has been a very good one, and as competitions go it may be said that the average merit of the designs, coming as they probably do in most cases from young men, is very good, and there are not a few that deserve attention.

We may add that, by the kind permission of the Architectural Association, the drawings will remain on view during next week as well as the present one.

The Assessors naturally had no easy task in coming to a conclusion as to fixing on the two best out of such a number of drawings. After going conjointly over them several times, they came to the conclusion to award the first prize to No. 149. It was felt that for the façade of a house representing the quarters of the central architectural society, it would be fitting that the design should be one embodying something of the traditional quality of Classic architecture, rather than a design which, however clever and original, might be said to be *hors ligne* in its style. After carefully comparing the best designs which came more or less under the traditional type, they finally were unanimous in regarding No. 149 as the best of this type. As to the second prize there was no difficulty in coming to an agreement. No. 48, simple as it is in its treatment, is a most original bit of architecture, and is highly creditable to its author.

On opening the two envelopes, it was found that No. 149 is by Mr. Stanley J. Wearing, A.R.I.B.A., of 6, Millstone. lane, Leicester; and No. 48 by Mr. Arthur Welford, of 195, Grove-lane, Denmark-hill.

The following numbers were among those which the Assessors considered to be worth their special attention, in addition to the two selected for the prizes: Nos. 2, 3, 23, 24, 33, 35, 37, 42, 44, 48, 53, 55, 59, 70, 71, 73, 78, 81, 94, 108, 136, 140, 144, and 153.

The names of the two prize-winners have been affixed to their drawings. We fear we cannot undertake the task of affixing names generally, but the author of any drawing is of course at liberty now to affix his own name to his drawing, if he desires to do so.

NOTES.

The Proposed New Bridge. WE see it stated in the daily papers that the Bridge House Estates Committee has received a deputation from the Institute of Architects in reference to the new St. Paul's Bridge, and have given the deputation an assurance that any suggestions or advice given by the Institute of Architects will receive every attention. All this is very vague, of course, so far; but it is to be hoped that the result will be that this is not to be merely an engineering bridge, but an architectural bridge which will add something fine to London architecture. And, having regard to the proximity of London Bridge, it should be urged also that this new bridge should be of a monumental character—an arched bridge of solid granite; or it will seem feeble in the neighbourhood of the older structure.

Mr. Norman Shaw and the Academy. MR. R. NORMAN SHAW, R.A., has placed in the hands of the Council of the Royal Academy a notice of his intention to put himself on the "retired" list of Royal Academicians; a decision which the Council have accepted. Mr. Shaw's motive in doing this has been solely to leave open a place on the Academy list for a younger aspirant; a motive the generous instinct of which will be appreciated by everyone. Mr. Shaw's view is that membership of the Royal Academy should not be regarded as the crown or reward of a successful career, but rather as the recognition of exceptional talent in the earlier part of an artist's career. By adopting the position of a retired member he leaves the Academy the opportunity of giving recognition to a younger man.

The Clapham Junction Fire. A LARGE drapery and fancy goods establishment such as that which was the scene of a serious conflagration on Monday afternoon is admittedly difficult to deal with from the standpoint of fire prevention. Even at ordinary times intending purchasers always want to buy inflammable goods and like to wander freely about spacious and intercommunicating showrooms. Therefore it is morally impossible to divide an establishment of the kind into a series of firetight compartments and not easy to prevent the spread of flames from one part to another. Although no reasonable precautions appear to have been neglected by the proprietors of the business, the appalling rapidity of the catastrophe which has just overtaken their premises and stock will doubtless suggest to them and others in the same line the desirability of still more rigorous safeguards for the future. By the liberal use of non-flammable wood fittings, fire-resisting partitions, armoured glass, automatic or centrally-controlled fire doors, and sprinkler installations much could be done in the way of checking and preventing the spread of fire, while the adoption of the most reliable methods of fire-resisting construction would preserve the integrity of the building even though its contents were destroyed.

The Isonzo Masonry Arch. A VERY fine piece of masonry work, recently described by Mr. Rudolf Jaussner to the Austrian Society of Engineers and Architects, is the bridge carrying the Wocheinerbahn across the River Isonzo, near Trieste. The structure, having the total length of about 650 ft., includes a main river arch of 278·9 ft. span, with 71·6 ft. rise. Although exceeded by that of the Plauen arch of 295·3 ft., it should be remembered that the latter has curved abutments which, while appearing to form part of the arch, may strictly be considered as reducing its net span by about 80 ft. The Isonzo arch, on the contrary, rises from skewbacks at ground-level on each side of the river. and is a genuine arch throughout. The completion of the first ring caused the centring to sink 1 in. at the crown, the total settlement at the same point on completion being about 1·6 in., this being followed by the further downward movement of nearly ¼ in. on removal of the falseworks. The bridge was built throughout of limestone, with the compressive strength of about 7½ tons per square inch, the mortar consisting of one part Portland cement to three parts of sand.

The Rating of Mansions. THE rates paid by the owners of historic mansions such as Chatsworth and Cardiff Castle are now constantly mentioned in political speeches. The fact that a house such as Cardiff Castle is only rated at the same amount as a shop in the town is put forward as an argument for the rating of site values, and as an instance of the favoured position of great landowners. It should, however, always be borne in mind that the amount of the rate is based on the assumed amount which a hypothetical tenant would pay as rent. It is obvious that whilst not one man in a million would pay more than a certain sum for a house and grounds such as Chatsworth with all its attendant expenses, yet that for the same amount of ground with a shop on it in Derby there would be scores of applicants. The amount of rate paid in respect, say, of Cardiff Castle, has nothing to do with the question of taxing unoccupied land which is being kept for development. Unless Cardiff Castle is to be pulled down, the only fair basis of rateable value is the assumed rent which it would fetch if let in its present condition. It seems desirable to emphasise these elementary principles of rating law at a time when there is a good deal of confused talk on the subject.

Electrolysis of Pipes. SOME interesting cases of damage caused by stray current from electric railways were mentioned in a memorandum on "The Protection of Underground Pipes from Electrolysis," read by Professor Ganz at the recent annual meeting of the American Gas Institute. In one case a lead-jointed gas main was damaged. Current entered a building

Digitized by Google

by the water service pipe and reached the gas service pipe through contact with a metal ceiling. From the gas service pipe the current flowed to the gas main and passed along the main to leave it at some other point. The existence of the current was discovered by the production of a severe arc when the gas service pipe was disconnected for removal of the meter; and it was found that the water service pipe received electricity owing to its being in metallic contact with some railway return conductors. In another case a gas service pipe was electrolytically destroyed owing to stray current flowing to a water main, then to the house water service, and from that to the gas pipes. Finally, the current returned through ground to the railway. In this case it was found that no measurable current could be detected flowing along the gas main owing to the fact that it was jointed with cement, whereas the water main, which was lead-jointed, readily conducted the stray current. It is obvious that every possible precaution ought to be taken to prevent leakage of electricity from railways.

Lambeth Palace Library.

MR. S. W. KERSHAW, F.S.A., has resigned, after forty years' service, the appointment of librarian at Lambeth Palace, and will be succeeded by the Reverend Claude Jenkins. The library, originally established by Archbishop Bancroft (1604-10), was transferred by Archbishop Howley, after his appointment in 1828, into the Great Hall. Archbishop Juxon (1660-3) re-erected the hall, and mainly, as he says in his will, after the same "model" as that of the former XIIIth century hall which was pulled down by Colonel Thomas Scott, the regicide, who was one of the purchasers of the palace buildings. We published a view of the interior of the library in our issue of February 10, 1883, and on January 15, 1898, Mr. A. M. Watson's measured drawings (Royal Academy silver medal), with some particulars of the structure.

The Value of Works of Art.

THE heated controversy over the wax bust and the ascription of it to Leonardo or Lucas, to which we have not thought it necessary to make any reference, has had one good effect, that it has elicited from an eminent architect, Mr. T. G. Jackson, an admirable letter on the subject of the factitious value given to works of art, not for their own merits, but for the names of their supposed authors. Of course, a proof that the bust in question was a genuine work of Leonardo's would give, in one sense, a greater interest to it, just as a recovered poem would have a greater interest if we knew positively that it was Milton's. What Mr. Jackson complains of is that the intrinsic merit of a work of art seems to go for nothing unless it has a great name tacked on to it. "Modern art will not sell; but antiques, especially with a good name attached to them, may fetch any price imaginable. Hence the forger's trade comes into being." The wax bust controversy seems to turn not on whether it is a beautiful work, but on whether it is Leonardo's or not. Its value as a work of art is just the same, whether it is authentic Leonardo or not; a point which none of the correspondents seem to realise.

PORTLAND CEMENT IN SEA WATER.

THE behaviour of cement in sea water is a subject which is of much importance to engineers and others having to design works for construction in tidal waters. Some failures of concrete in harbour works about twenty years ago occasioned a good deal of anxiety and raised doubts as to the reliability of Portland cement for marine structures. As a matter of fact, the failures in question were due to the unsuitable proportions of the concrete, and subsequent investigations have shown that although unset cement is attacked by salt water, such action only occurs at the surface, and if care is taken to prevent the access of water to the interior of the concrete there is no reason for fearing general deterioration.

The most recent investigation into the influence of sea water on Portland cement is one inaugurated in 1896 by the Scandinavian Portland cement manufacturers with the co-operation of the Norwegian Harbour Board and the Danish Harbour and Coast Protection Department. The committee then formed included four scientific chemists, three connected with cement manufactories and one with a technical institute in Gothenburg, and an engineer in the Danish Harbour and Coast Protection Department. A full account of the experiments, which so far have extended over a period of ten years, is to be found in the report recently presented to the International Association for Testing Materials, and now published in pamphlet form by Messrs. J. Jorgensen & Co., of Copenhagen.*

At the first meeting of the committee it was decided to institute comparative mortar tests with different brands of Scandinavian Portland cement, including one class from Denmark, Sweden, and Norway, including also one English variety, and the hydraulic lime which is largely used in the Mediterranean districts of France.

The trials were made partly with mortar cubes to the number of 3,500, and partly with more than 100 concrete blocks.

The mortar cubes were kept seasoned in moist air for one month after moulding, and then placed in sea water under conditions resembling as far as possible those under which cement is used for coast and harbour works. At the present time the fifteen and twenty year cubes are still in the sea, the tests so far made relating only to specimens which have been in sea water for ten years. For each quality of cement five 7-centimetre cubes were moulded in the following proportions:—

4 cubes containing	1	part cement	3	parts sand.
4	,,	,,	1	,,	,,	2	,,	,,
4	,,	,,	1	,,	,,	1	,,	,,
1 cube	,,	1	,,	,,	0	,,	,,	

The concrete blocks, of 0·6 and 1·7 cubic metres, were composed of 1 : 1 : $2\frac{7}{8}$, 1 : 2 : 4, and 1 : 3 : $5\frac{1}{2}$ mixtures. Of these three mixtures blocks were moulded with the five descriptions of cement chosen. Seven further brands of Scandinavian cement were afterwards incorporated in additional blocks, and specimens were also moulded with tras-cement, slag-cement, pozzuolan-cement, and other admixtures. Hollow reinforced concrete blocks were also made for examination after exposure to salt water.

Investigations made up to 1909 comprise all tests of mortar and concrete exposed for periods of up to ten years' duration. Crushing tests conducted at the State Laboratory show a progressive increase of strength in the Portland cement and hydraulic lime cubes, although as a rule the maximum attained within the first year was followed by a drop during the next twelve months, and then by a continued rise. Chemical analysis indicated the absence of any alteration in Portland cement of good quality, while the hydraulic lime was found to contain increased proportions of magnesia and sulphuric acid. Another point worthy of notice is that the weakest mixture of hydraulic lime mortar was completely destroyed by frost where deposited at mean tide mark. The satisfactory results obtained by French engineers in the Mediterranean with this material are no doubt explainable by the absence of frost and tide.

Investigation of the concrete blocks has consisted mainly of observations upon external appearance and the effect of blows or scraping. Some crushing tests were made, but unfortunately not in the systematic manner adopted with regard to the mortar cubes.

Speaking generally, the tests prove conclusively that sea water alone is not able to destroy or alter the constitution of Portland cement mortar, that frost and climatic influences have some destructive effect on the surface of cubes and blocks made of mixtures weaker than 1 : 2 in cement and sand, that the sand should be of assorted sizes, and that the addition of finely-ground material to the cement is advantageous.

The last-mentioned conclusion is quite in accord with the experience of Dr. Michaelis, as stated in the paper, of which an abstract is given in the *Proceedings* of the Institution of Civil Engineers.

Although the Scandinavian investigation is not yet complete, the results are satisfactory as far as they go, and it is to be hoped that they will be confirmed by the further data to be furnished in five and ten years hence.

*The Report can be obtained also from Messrs. E. & F. N. Spon: price 3s.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

A MEETING of the Institution of Municipal Engineers was held at the Caxton Hall, Westminster, on December 11. Mr. J. T. Pegge (Durham) presided.

There was a short discussion on the question of an examination for students, and the report presented in April last, and it was agreed that the Executive should nominate a committee to deal with the question and prepare a revised scheme.

Municipal Superannuation.

The President then presented a paper on "Municipal Superannuation." He said the passing of the Workmen's Compensation and Employers' Liability Acts had definitely affected the relationship between all authorities exercising powers of municipal government and their workpeople and officers alike, and accordingly most authorities had had to insure against the liabilities thrust upon them by these Acts. It seemed to him that some extension of the above Acts was necessary by simplifying them and making them the basis of a system:—

(1) Of provision against sickness whilst in employment.

(2) Of pension in cases of incapacitation whilst performing duty.

(3) Of superannuation on attaining a certain age (being the completion of a life's duty, faithfully and well performed).

(4) Of bonus to dependents if life is cut short due to the performance of duty.

This might seem a tall order, but by means of deductions from pay and a slightly lower wage at commencement the cost to the rates need not be so serious as at first sight it seemed; very probably not more than the premiums paid under the Acts already in force.

Of course, in any scheme provision should be made for an employee's continuance of service from one authority to another (with a minimum of service in each case counting for pension as in the police force). This system would have to be national, with a

Digitized by Google

registrar at headquarters to allocate to the various authorities their proportions under an all-round rate. A similar system worked well with the police service, and the financial adjustments were by no means insuperable.

His suggested system was that the employee should begin at, say, twenty-one years of age and continue in municipal service until sixty-five years of age, and that all posts in the chosen branch of work should be open to the qualified and deserving, free from the trammels of trades unionism. This would ensure all employees being properly trained to their work, and as a consequence the ratepayers would gain in effectiveness, and thereby in economy of work, the little extra they might (on paper) be called upon to pay.

The following was an outline scheme, which, no doubt, needed a financial expert to revise as to rates and terms:—

(*a*) Full wage during certified illness up to sixty-five years.

(*b*) Half-wage during life after sixty-five, unless previously retired.

(*c*) Half a year's wages at death, paid to the legal dependents.

To provide this take as a basis—other wages being *pro rata:* a man starting at twenty-one years old, paying 12¾d. per week per 1*l.* of wage, would be entitled to the benefits named. Now, a deduction of 4 per cent. or 9·6d. in the pound, from the weekly wages, and a contribution from the authority of 3·2d. in the pound, or 1⅓ per cent., would be a fair allocation of the cost, and in considering this statement the increments of salary occurring at intervals nearer the time of retirement would have to be taken into account.

A system such as this would conduce to a very reasonable form of security of "tenure," because a council would only then newly appoint men of twenty-one years or under, as, if they newly-appointed a man of thirty-one years, the total contribution per 1*l.* of wage would be 1s. 6½d., or at, say, forty-one years, 2s. 5d.

Mr. E. A. Stickland (Windsor), in proposing a vote of thanks to the President for his paper, said the police and teachers were pensioned, and it seemed very hard that the one section whose work was of vital importance to the community should be ignored.

Mr. H. C. Adams (London), who seconded, thought the proposed scheme was a very fine ideal, but he feared the cost of it would be enormous.

Mr. B. Partridge (Walthamstow) and Mr. H. C. H. Shenton (London) also spoke, and the vote of thanks was carried.

Sludge Disposal.

Mr. W. C. Easdale read a paper on "Sludge Disposal." He said he proposed to deal with the problem of sewage in its limited sense of getting rid of the sludge. If they took the comprehensive and authoritative fifth report of the Royal Commission on Sewage Disposal, they found detailed descriptions of the following different methods of sludge disposal:—Conversion into marketable manure, depositing at sea, sludge pressing, shallow burial in ground, lagooning or air-drying, spreading over land, and burning. It should, however, be noted that, although practically every other matter dealt with in the report was referred to in the summary of conclusions and recommendations at the end of the report, no reference whatever was made to sludge disposal. It would seem that the Royal Commission, in spite of all the information they had obtained, did not feel justified in making any definite recommendations in connexion with this most important matter.

Taking the various methods in the order given, it might be observed that the conversion of sludge into a marketable manure was a genuine disposal, as the final result of the process was that the products were actually taken away and got rid of. If the various operations involved were carried out under properly qualified management they were usually free from nuisance.

The next method of depositing at sea was also a real disposal, as the sludge was actually got rid of, but it could only be economically carried out when dealing with large volumes and in places where the sewage works were situated in proximity to wharves at which the sludge could be delivered direct on to the boats.

Although sludge pressing was mentioned in the report as a method of disposal, it was not actually correctly designated. It was in reality simply a method of preparation with a view to subsequent disposal to farmers, and it was in this respect that it so frequently failed. There were a number of places where it was readily disposed of when given away free of charge; in others it was possible to sell it; and the Royal Commission, in working out comparisons of cost, had assumed that it could be sold at 6d. per ton for the pressed cake. On the other hand, in a number of places it had been found impossible to dispose of it in any way, and huge accumulations had resulted on some sewage works. Further, it was only chemically precipitated sludge that could be successfully pressed.

Shallow burial in the ground had not been adopted so far in many places, but where the conditions were suitable it was a cheap and effective method of disposal. It necessitated a suitable light, porous soil, at the rate of from one to two acres per 1,000 tons of wet sludge.

Lagooning or air-drying was also not a real method of disposal, but rather a preparation for disposal by spreading on land either at the works or by the neighbouring farmers. The Royal Commission had a very poor opinion of this method, but he thought this must be due to a misconception which was indicated by the use of the two words "lagooning" and "air-drying" as alternative descriptions of the same thing. Personally, he considered this method one of the most satisfactory when the drying beds were suitably constructed, of a large area, and provided with ample means of drainage, and properly managed. By drawing off the sludge frequently it did not become so foul, and when properly dried, it could be utilised by farmers or spread over the ground of the works without creating a nuisance.

The next method mentioned by the Royal Commission, spreading the wet sludge over land, was not in very general use, and it was pointed out that sludge which gives rise to little or no smell was very exceptional, so that this method could only be adopted where the land used for the purpose was far removed from houses or public roads, or the sludge was first deodorised by the addition of lime or some other suitable substance.

Burning of sludge could only be resorted to where refuse destructors were in use, and even then involved the pressing of the sludge before it was mixed with the house refuse. The cost of the process was high, but there was a by-product in the form of clinker, and the sludge was, at any rate, entirely got rid of.

In addition to these methods there was another, not mentioned by the Royal Commission, of mixing the sludge with house refuse. The mixture dried at a fairly rapid rate, there was very little, if any, nuisance from smell, and the result was a good manure, easily handled, and suitable for sale to farmers.

Mr. Whyand (Secretary) read a letter from Mr. R. H. Jeffs, of New Maldon, in which he said:—"As a practical engineer having charge of sewage works, I may be allowed to say briefly that I regard the operation of burial of sludge in the ground as perhaps the most efficient where suitable land is obtainable. I know of a district where such a method has been in operation for some years with the greatest success, and although the area of land is very limited, yet after the lapse of about two years they are able to use over again the land where the sewage had been buried, and there remains scarcely a trace of the sludge which had been previously deposited there. Personally, I am trying the method of drying off the sludge in lagoons, and although I have started this method only for a short time it has proved very successful, and a great saving in respect of team labour, which was previously employed in disposing of the sludge, has resulted. I see no reason why I should not be able to continue this method for a long time. Although the foreman's cottage is within 150 ft. of the sludge lagoon, yet no nuisance whatever has been felt."

Mr. C. H. Adams (London), in proposing a vote of thanks to Mr. Easdale, said he would like to have some further particulars from Mr. Easdale of the method for the conversion of sludge into a marketable manure. He tried the air-drying of sludge some years ago. With the beds under-drained the result was very satisfactory, but when the beds were not under-drained the result was practically negligible, and the stuff was there for a long time. He had tried the spreading of wet sludge over land, but its manurial value was small. He was not at all satisfied with it, and abandoned it in favour of other methods.

Mr. A. Lionel Dibdin (London) seconded the vote of thanks. He said the question of the disposal of sludge was one which was puzzling a great number of people throughout the country, and on which enormous sums of money were being constantly spent. He could quite understand and appreciate the Royal Commission's difficulty in recommending any special means of getting rid of sludge, especially when they could not be quite sure that it was necessary to get rid of sludge, because it had got to be definitely proved first that they were bound to have sludge. That the formation of sludge could be avoided was being proved in numbers of instances throughout the country. If that could be done without creating nuisance at a low cost, he thought they ought to look a little further ahead than gather together sludge and then provide means of disposing of it. He was applying this method of disposal to some sixty or seventy sewage schemes, large and small, at the present time, and he found it was possible to apply the method with efficiency and economy.

Mr. J. E. Farmer (Croydon) said as a practical man having to dispose of 33,000 tons of sludge a year, he found the cheapest and best methods of disposal was to spread it over the land. The cost per ton of 94 per cent. of sludge, including ploughing in, was 3d.

Mr. Shenton (London) said he had been on a good many sewage works, and it was no exaggeration to say he had not seen any place where the sludge was treated in a satisfactory manner. It was generally treated in the most elementary manner possible; the attempts were absolutely crude; in fact, it seemed a matter beneath the consideration of the engineer or the chemist. Generally the liquid which was being treated had been deprived of the solid matters, and could easily have been purified on land or filters of much more simple construction, and if they left the party which was being conducted round and looked about for themselves, they would generally find there was a most disgusting mess in some corner of the works. As to putting the sludge on the land, so much depended on the character of the soil.

Mr. E. E. Ryder (Bushey) said the method which he adopted was of putting the sludge in trenches in layers of about 3 in. and covering it with a little dry earth. The pressing of sludge had been adopted in his district, but owing to the cost, the nuisance, and the time it took to do it that was abandoned, and they went back to shallow trenches.

The President remarked that, with land treatment everything depended on the nature of the land. If the soil was sandy loam it would be successful; if the land was a heavy clay it would soon become clogged and be a failure.

The vote of thanks having been passed,

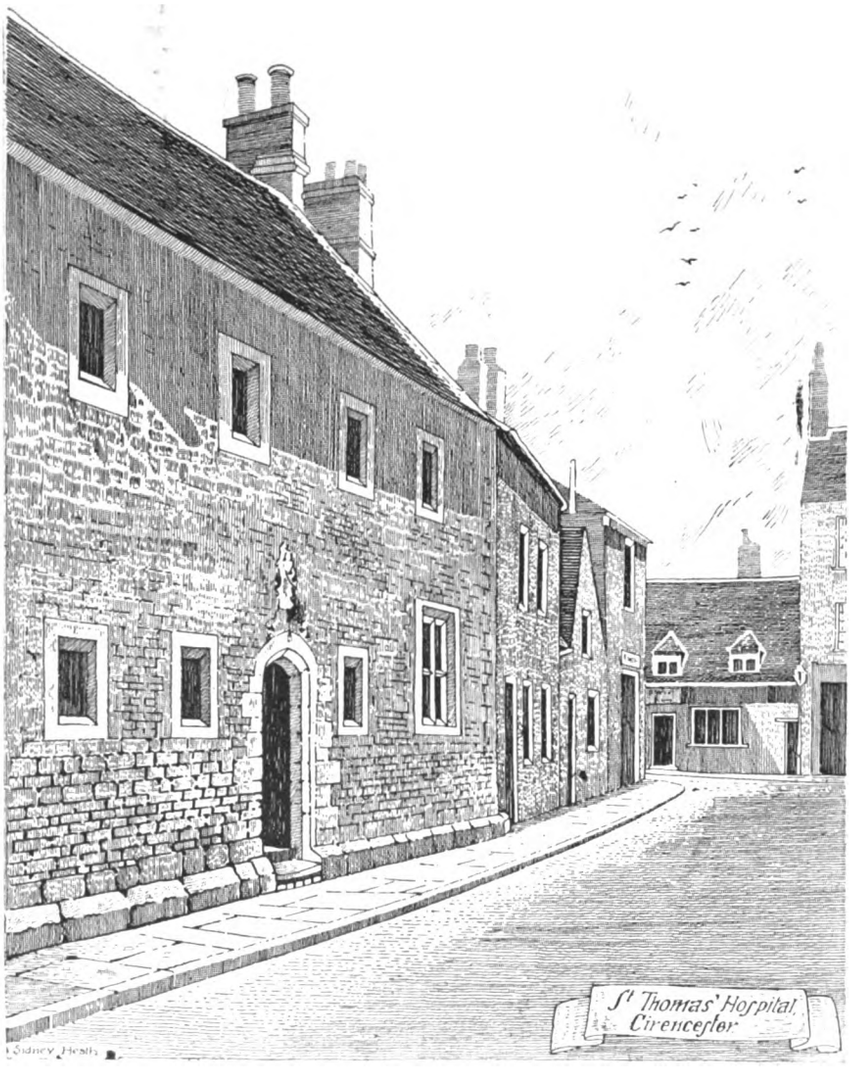
Digitized by Google

Mr. Easdale, in reply, said the town where the sludge was converted into a marketable manure was Kingston. With regard to the effluent, it always complied with the requirements as to suspended matter. It was always under 3 parts per 100,000. He was pleased to have his ideas as to air-drying confirmed. He recommended that the sludge should be put on frequently at short intervals, before it had become foul.

ST. THOMAS'S HOSPITAL, CIRENCESTER.

THE old hospital of St. Thomas at Cirencester, situated in the street of that name, is an interesting and ancient charity, founded during the first half of the XVth century by Sir William Nottingham for the relief of poor weavers. The building now forms two almshouses, but its interesting architectural features have been well preserved by the Weavers' Company in whom the management was vested by the founder. This company is the solitary survivor of the many Guilds that once formed so important a feature of the mediæval life of the town. The funds that maintain the charity are still obtained from a rent-charge on land bequeathed to it in the will of Sir William Nottingham. The upper portion of the front wall has been heavily covered with stucco, as also has the fragment of a figure, possibly that of the patron saint or founder, over the doorway.

With this example the series of illustrations of old English houses of alms (begun in the *Builder* of July 4, 1908) comes to a close. The illustrations that have appeared, although by no means exhaustive, may be taken as fairly representative of almshouse and hospital exterior architecture, from the founding of St. John's Hospital, Canterbury, about the year 1084, to the building of the new wing at SS. John's Hospital, Sherborne, from designs by Mr. Slater, in 1866, a period of over 800 years. SIDNEY HEATH.



LONDON MASTER BUILDERS' ASSOCIATION:

REPORT FOR DECEMBER, 1909.

THE Council met on December 9 and 16, 1909, when the President (Mr. F. C. Rice) occupied the chair.

Matters of an important character were discussed and instructions given concerning them. The firms recommended by the Organisation Committee for election were adopted, and the Council felt that something should be done in connexion with subcontractors who wished to join the Association as associate members. With those who are purely builders' merchants there is no difficulty, but it was felt necessary to do something to enlist the cohesion of subcontractors in case of labour troubles. A declaration to be given was adopted, and a motion to amend the rules will be accordingly made at the next annual general meeting to meet these cases.

The quarterly financial statement was submitted and considered, together with the investment account. Among other items cheques were drawn for the Association's subscription for 1909 to the National Federation and contribution for the same period to the National Federation Reserve Fund. It was decided to eliminate from the list of members those whose subscription were more than two years in arrear, and from whom no satisfactory reply had been received to a recent communication. The firm of Messrs. Minton, Robertson, & Co. (chartered accountants) were invited to audit the accounts for the current year.

The Council gave further consideration to the case of a builder who is contesting the decision of an arbitrator, and gave instructions accordingly.

The President reported that he accepted an invitation to attend the Conference on the apprenticeship question at the Mansion House on December 3, and reported the proceedings to the Council. It was regretted that no employer representing the building trade had an opportunity to speak at this meeting. A gentleman who, apparently, was not present was announced to speak on behalf of the building trade, but he was in no way connected with the London Master Builders' Association nor the National Federation of Building Trade Employers, nor even is he known as an employer. It would certainly be most desirable to enlist the sympathies and co-operation of the employers of the building trade if the movement is to be successful in the trade.

As a result of the Conference with the Quantity Surveyors' Association the Council decided to send a copy of the following resolution, agreed to at the time, to every member of the Association:—

"That this Conference disapproves of the practice of asking for tenders in competition for works of a substantial value without quantities, prepared by a fully qualified Surveyor, being applied, and is of opinion that such quantities should be supplied in all cases when competitive estimates are invited for works expected to cost 500*l.* and upwards."

A deputation, consisting of the President (Mr. F. G. Rice), Mr. W. Shepherd, Mr. J. Randall, and Mr. G. Bird Godson, together with representatives of the National Federation, were received by the President and officers of the Royal Institute of British Architects on Monday, December 13, when the question was discussed of Bills of Quantities being supplied. After a very pleasant and courteous interview the deputation left with the assurance that the matter would be laid before the Royal Institute of British Architects' Council. Mr. F. G. Rice and Mr. Wm. Shepherd spoke for the London Master Builders' Association, and Mr. Ernest J. Brown for the National Federation.

A communication from the London Association of Master Decorators was received, and it was decided to appoint the President and officers of the Association to meet the Master Decorators.

Several questions of interest regarding trade practices were considered, such as demarcation of work, and the Leicester Arbitrator's decision as to plumbers' work.

The arrangements for the annual dinner in February next were left to the President.

Mr. L. Horner and Mr. G. Bird Godson were deputed to act with Mr. J. Carmichael in matters relating to the ventilation, etc., of the new offices in Kingsway.

The following Committee was elected to consider alterations necessary in the rules of the Association:—

The President, Mr. L. Horner, Mr. G. Bird Godson, Mr. J. S. Holliday, Mr. W. Shepherd, Mr. Frank May, J.P., Mr. F. Higgs, and Mr. F. L. Dove, L.C.C.

The following members were elected to represent the London Master Builders' Association on the National Federation Council and Administrative Committee:—

Council.—The President, Mr. J. Carmichael, J.P., Mr. S. B. Depree, Mr. F. L. Dove, L.C.C., Mr. G. Bird Godson, Mr. L. Horner, Mr. J. S. Holliday, Mr. J. F. Parker, Mr. F. M. May, and Mr. A. W. Turnbull.

Administrative Committee.—Mr. B. I. Greenwood and Mr. W. Shepherd.

It was decided to inform the members of the London Master Builders' Association that the rules relating to measurement of slating and tiling issued recently by the Master Slaters' Association had not been considered or approved of by this Council.

The meeting then terminated.

OPEN SPACES.—In addition to a bequest of 20,000*l.* to the Corporation of Ipswich for the purpose of purchasing and housing works of art, the late Mr. Felix T. Cobbold, M.P. for Ipswich, has left to the burgesses Gyppeswick Park, covering about 45 acres, which he recently acquired from Lord Gwydyr.—The Wood Green District Council will apply for statutory powers to enable them to sell a public garden, of 3 r. 14 p. in extent, to a music-hall syndicate for 8,000*l.*

Digitized by Google

THE LONDON COUNTY COUNCIL.

THE last weekly meeting of the London County Council before the Christmas recess was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—It was agreed to lend Lewisham Borough Council 950*l.* for sewers and retaining wall, and Poplar Borough Council 6,822*l.* for paving works. Sanction was also given to Poplar Borough Council to borrowing 2,068*l.* and loan of 2,929*l.* for repayment of balance of a loan for a depôt site and erection of mortuary and post-mortem room. Sanction was given to Southwark Borough Council to the borrowing of 750*l.* for contribution towards an open space, and 2,030*l.* for electric lighting and repayment of balance of loan.

The Works Department.—The General Purposes Committee submitted a statement of works completed by the Works Department subsequent to September 30, 1908. The last statement of completed works was presented by the Works Committee on March 30, 1909, and comprised works completed up to September 30, 1908. The works in the statements appended to this report are those completed subsequent to that date, and include all those which have been referred to the department for execution, with the exception of certain jobbing works carried out by the department, the accounts for which will be rendered on the actual cost basis, in accordance with the arrangement reported by the Committee on October 12, 1909. The statements now presented complete the comparative record of works executed by the department.

The accounts of the twenty estimated works (with two supplementary accounts) in Statement I. show in the net result a considerable balance of cost below final certificate, but on the majority of architectural works there is an excess. Statement II. includes four works carried out without any schedule for purposes of comparison. Statement III. shows the results of the execution of jobbing works during 1908-9, the cost being, for works not previously reported, 655*l.* 6s. 6d. below schedule value. The statement also contains particulars of jobbing works, the accounts for which have been rendered on the basis of actual cost.

The consideration of the Report was adjourned.

Contracts, Rates of Wages, etc., Standing Orders as to.—The General Purposes Committee brought up a long Report on this matter, and they recommended as follows:—

"(*a*) That each of paragraphs (1) and (2) of standing order No. 244 be a standing order of the Council.

(*b*) That the word "obtaining" be substituted for the word "obtained" in line 13, in line 22, and in line 25 of standing order No. 244 (1), and in line 38 of standing order No. 247.

(*c*) That the words "Stores and Contracts" be substituted for the word "Establishment" in standing order No. 244 (1).

(*d*) That the following be a standing order of the Council:—

(1) In contracts for the supply of goods or materials (except clothing, boots, and hats and caps) a clause shall whenever practicable be inserted that with respect to all goods or materials manufactured, supplied, or produced by the contractor, he will in the manufacture, production, or supply thereof, as the case may be, pay and observe the undermentioned rates of wages and hours of labour, viz.:—

(i.) Where the manufacture, production, or supply thereof is carried on within a radius of twenty miles aforesaid from Charing Cross, the rates of wages and hours of labour appearing in the Council's list, and if the contractor employ any workman or workmen in any trade not included in the Council's list, the rates of pay shall not be less, nor the hours of labour more, than those recognised by associations of employers and trade unions and in practice obtaining in London.

(ii.) Where the manufacture, production, or supply thereof is carried on beyond a radius of twenty miles aforesaid from Charing Cross, the rates of wages and hours of labour recognised by associations of employers and trade unions and in practice obtaining in the district where the manufacture, production, or supply is carried on.

(2) In the case of contracts for the supply of goods or materials (except clothing, boots, and hats and caps), if it is not practicable to insert the clause above specified, the contractor shall be required to declare that he pays such rates of wages and observes such hours of labour as are recognised by associations of employers and trade unions or are generally accepted as fair and in practice obtain in the districts in which the contractor carries on work.

(3) In all contracts for the supply of clothing, boots, and hats and caps clauses shall be inserted to secure—

(i.) A minimum scale to be fixed by the Council of wages for workers and work of every description, and a penalty of 25*l.* in respect of every breach of contract as to wages; and

(ii.) The execution of the whole of the work in the contractor's own factories, and a penalty of 100*l.* for breach of this condition.

(4) In all contracts for the supply of clothing clauses shall be inserted to provide—

(i.) That the rate of wages for every class of work done in any workroom shall be posted up in some conspicuous place in that room;

(ii.) That any person authorised by the Council shall have at all reasonable times free access to every part of the factory;

(iii.) That any person authorised as above may see any worker apart; and

(iv.) That the wages book shall at all times be open to inspection by any person thereto authorised by the Council.

(*e*) That standing orders Nos. 225, 226, 228, 229, and 246 be rescinded.

(*f*) That words as follows be inserted after the word "manufacture" in line 2 of standing order No. 244 (2):—"(which for the purposes of these orders shall be deemed to include printing, stationery, and bookbinding)."

(*g*) That standing order No. 250 be rescinded.

(*h*) That standing order No. 247 be amended by the omission from line 4 of the words "the following," by the insertion of the words "as follows" after the word "clauses" in line 5, and the words "statements as follows shall be included" after the word "tender" in line 6, and by the substitution for the words "In the form of contract" (line 3, p. 70) of the words "The form of contract shall contain clauses as follows:—"

(*i*) That the tabular statement, and the headlines and preamble thereto, with respect to Part I. of the schedule, be omitted from standing order No. 247, and that the following be substituted therefor:—

"The schedule of rates of wages and hours of labour shall be divided into two parts. Part I. shall be in respect of all work done at the site mentioned in the specification in the first schedule, or within a radius of twenty miles measured in a straight line from Charing Cross in the county of London.

Part I. shall contain a tabular statement in which shall be specified the trades which the contractor may require to employ in the execution of the contract; the rate of pay per hour, the hours of labour per week, distinguishing between summer and winter (the twelve weeks after the second Monday in November), and in the latter case distinguishing between the hours during the three weeks at the beginning and end, and the six middle weeks of the period; the rate of pay for overtime when worked at the request of the employer, specifying in respect of weekdays other than Saturdays the rate of pay until 8 p.m., from 8 p.m. until 10 p.m., and after 10 p.m., and specifying in respect of Saturdays the rate of pay (1) until 4 p.m. and (2) after 4 p.m., and Sundays and Christmas Day.

Part I. shall include a clause as follows:—"

(*j*) That the tabular statement and the preamble and headline thereto, with respect to Part II. of the schedule, be omitted from standing order No. 247, and that the following be substituted therefor:—

"Part II. of the schedule shall be in respect of all work done outside the site aforesaid, and a radius of twenty miles measured in a straight line from Charing Cross and on a site to be specified, where all work not done on the site or within the radius first mentioned is intended to be done.

Part II. shall contain a tabular statement similar to that to be contained in Part I. as regards trades, rates of pay, hours of labour, and payment for overtime.

Part II. shall include a clause as follows:—"

(*k*) That the following be a standing order of the Council:—

In contracts for the supply of clothing, boots, and hats and caps a clause is to be inserted to provide that if the contractor fails to deliver any articles within seven days after the time allowed under the contract for delivery, he shall pay to the Council, or the Council may deduct from moneys due to him, at the rate of 1 per cent. on the contract price of such articles, and an additional 1 per cent. for every subsequent week until delivery, such payments or deductions to be considered as liquidated damages.

(*l*) That standing order No. 227 be rescinded.

(*m*) That standing order No. 223 be amended by the omission of the words "The solicitor is to insert" and the substitution therefor of the words "There shall be inserted," and by the omission of the word "said" in line 5.

(*n*) That standing order No. 240 be amended by the insertion of the word "chief" before the word "engineer's" in line 1."

The recommendations were all agreed to.

Mr. Dew said that some firms in taking the Council's work under the standing orders agreed to the Council's requirements in regard to its work, but they were not fair employers of labour in other cases. Generally speaking, the Council's standing orders were very satisfactory, but some other municipalities went one better in reference to this question, for they stipulated that firms who worked for them must pay the recognised rates of wages in doing work for other people.

Mr. H. P. Harris said the matter was being considered by the Committee, and a report would shortly be brought up by him dealing with the question.

Boys' Wages.—On the reception of the Main Drainage Committee's report, Mr. Shepheard asked whether it was a fact that under a County Council contract for main drainage workmen were employed for sixteen hours a day at 4d. per hour.

Mr. G. G. Easton (Chairman of the Main Drainage Committee) replied that the persons referred to were boys under the age of 21. They earned between 20s. and 30s. per week. The Engineer was to report upon the matter.

The Rev. W. Hastings: Boys working under ground for ninety hours a week?

Mr. Easton: Yes.

Mr. Shepheard strongly protested against the rate of pay and length of the working day, and moved the adjournment of the Council to express its views on the matter.

Mr. Gordon seconded.

Mr. Easton: The matter has been referred to the Chief Engineer. We shall report later.

The motion for the Council's adjournment was lost, only seventeen voting for it.

Roads, Sewers, etc., Old Oak Estate.—The Housing of the Working Classes Committee recommended:—

"(*a*) That the estimate of expenditure on capital account of 20,550*l.* submitted by the Finance Committee in respect of the construction of roads and sewers and works of general development on the western section of the Old Oak Estate, and the widening and extension of Duncane-road along the southern boundary of the estate, and of all incidental expenses in connexion therewith, be approved.

(*b*) That the estimate of expenditure on capital account of 74,511*l.* submitted by the Finance Committee in respect of the erection of shops, cottages, and cottage flats on the western section of the Old Oak Estate, and of all incidental expenses in connexion therewith, be approved.

(*d*) That the scheme submitted by the Housing of the Working Classes Committee for the laying out of the western section of the Old Oak Estate, and for the erection thereon of shops, cottages, and cottage flats, and the approximate position of the church site on the eastern section of the estate, be approved."

(*e*) That, in pursuance of sect. 11 of the Housing of the Working Classes Act, 1903, application be made to the Local Government Board for its consent to the provision of five shops on the western section of the Old Oak estate.

Mr. F. Smith contended that the whole of the estate should be developed quicker. Ten years was too long. Moreover, he did not like the idea of the suggested one-roomed tenements.

Mr. Easton said it would be a mistake to develop the whole of the estate, as the result then would be to injure the existing property.

The scheme was passed.

Mr. Smith proposed that there should be no one-roomed tenements. His contention was that the time was gone for such places. The working classes should be educated up to something better than one-roomed tenements. Already there were 100,000 in London, and the County Council should not add to the number.

Mr. Dew seconded, declaring that it was "playing housing very low down" to build one-roomed tenements. It was a miserable ideal. The real standard housing should be four rooms per family. The provision of one-roomed tenements was a miserable way of solving the housing problem.

Mr. Collins spoke against the provision of one-roomed tenements.

Mr. Hunter said this was the best scheme ever put before the Council. They were going

Digitized by Google

to build well and cheaply for the workers. He was rather proud of this scheme. He liked the idea of the one-roomed tenements because they afforded excellent accommodation at 3s. 6d. a week to a widow or an old couple. The one-roomed tenement was a very large room, 10 ft. 6 in. by 18 ft. 3 in., and had scullery, 7 ft. by 6 ft., open lobby, lavatory, and other conveniences.

Dr. Beaton spoke against the one-roomed tenements, which were not ideal, even though the rooms were large.

Mr. Raymond Greene (Chairman of the Committee) said the principal point was as to the need for the one-roomed tenements. There was a demand. Already the Council had 188 one-roomed lettings, and there was a big demand for such accommodation. Therefore it was desirable for the Council to provide such accommodation, which, by the way, was being now provided at the Hampstead Garden City. The need for such accommodation was realised. The proposed one-roomed tenements at Oak Common were ideal from the point of view of sanitation. Each room had a cubic area of 1,400 ft., and there were two windows and two doors.

The amendment with respect to the one-roomed tenements was rejected.

Schools.—It was agreed that the estimate of expenditure on capital account of 2,062*l.*, and the estimate of expenditure on maintenance account of 4,286*l.* for the financial year 1910-11, under standing order No. 359, submitted by the Finance Committee in respect of the structural improvement of the Great College-street school (St. Pancras, E.), be approved.

Poplar Coroner's Court.—It was agreed that the estimate of expenditure on capital account of 3,500*l.*, submitted by the Finance Committee, in respect of the erection of a coroner's court at Poplar, including incidental expenses, be approved.

Limehouse — Farrance-street — Improvements.—The Education Committee recommended, and it was agreed:—

"That the estimate of expenditure on capital account of 7,487*l.* and the estimate of expenditure on maintenance account of 3,851*l.* for the financial year 1910-11, under standing order No. 359, submitted by the Finance Committee in respect of the execution of structural improvements at the Farrane-street school (Limehouse) be approved.

That, subject to the Board of Education approving the finished plans, the improvements referred to be executed to T. D. Leng, the contractor engaged on work at the school, in accordance with his contract schedule of prices."

St. Pancras, E.—Great College-street.—It was agreed that the estimate of expenditure on capital account of 2,062*l.* and the estimate of expenditure on maintenance account of 4,286*l.* in respect of the structural improvement of the Great College-street school (St. Pancras, E.) be approved.

Applications to the Theatres and Music Halls Committee.—Applications relating to the following were agreed to:—

Drawings, submitted by Mr. F. S. Hammond, showing an additional dressing-room, a gymnasium, a miniature rifle range, and other additions proposed to be constructed at the Cripplegate Institute, Golden-lane, E.C.

A drawing, submitted by Mr. W. G. R. Sprague, showing a proposal to convert the Grosvenor Restaurant, Wilton-road, Pimlico, into a cinematograph hall.

A drawing, submitted by Mr. G. F. Ward, showing how it is proposed to comply with the Council's requirements for the provision of slopes in the exits leading into Lorne-gardens from the Holland Park skating rink, Holland Park-avenue.

A drawing, submitted by Mr. A. O. Collard, showing alterations proposed to be made to the exits from the Empress Rink at the London Exhibitions Buildings, Earl's Court, in order to comply with requirements made by the Council.

A drawing, submitted by Mr. F. H. Payne, showing the proposed arrangement of the main hall at Olympia, Hammersmith, as a skating rink, and the arrangement of a portion of the annexe in connexion with the "Tiny Town" exhibition.

A drawing, submitted by Messrs. Fair & Myer, showing a proposal to provide an additional exit leading into Goulton-road from the south side of the Premier Rink, Lower Clapton-road, in order to comply with a requirement made by the Council.

Drawings, submitted by Messrs. Hayward & Maynard, showing amendments proposed to be made in the scheme for the adaptation of premises in John-street and Durham House-street, Adelphi, for use as a concert-hall and theatre.

A drawing, submitted by Mr. H. S. Rogers, showing the proposed arrangement of the seating at the Trevelyan Hall, St. Anne's-lane, Westminster.

A drawing, submitted by Mr. B. Crewe, showing the cinematograph-box proposed to be constructed at the rear of the pit at the Variety Theatre, Pitfield-street, Hoxton.

South-east London Technical Institute.—The Building Acts Committee reported as follows:—

"We have had under consideration the plans of the South-east London Technical Institute at the corner of Lewisham High-road and Breakspears-road. As proposed to be erected the main front of the building to Breakspears-road would be 2 ft. behind the line of buildings southward, and 31 ft. from the road, with two bays, each 27 ft. wide, projecting 8 ft. The northern bay would stand on land previously occupied by a building actually abutting upon the road. The front of the building to Lewisham High-road would be about 25 ft. in advance of the houses now standing on the site. These houses are separated from the roadway by forecourts about 19 ft. in depth, a private road about 26 ft. wide, and a garden 40 ft. in depth. The Deptford Metropolitan Borough Council objects to the proposals on the grounds (i.) that the bays in Breakspears-road would be in advance of the line of houses in this road, and (ii.) that the Lewisham High-road frontage would encroach on the private road and would prejudice the interests of the residents of the property in Lewisham High-road on the western side of Breakspears-road, and asks that the latter frontage may be set back to the line of buildings westward.

With regard to the first objection, the proposed bays would be more than 20 ft. back from Breakspears-road, and, as previously stated, one of them would be erected upon a part of the site of a building actually abutting upon the road, which building will be demolished. We are therefore of opinion that the Council's approval of the proposal under sect. 22 of the London Building Act, 1894, cannot reasonably be withheld.

With regard to the frontage to Lewisham High-road, it should be noted that the whole of the site, including the private road (a *cul-de-sac*) and shrubbery in front, is the freehold property of the Council, and, as the building would be more than 50 ft. back from the highway, no consent is necessary under sect. 22 of the Act of 1894. It should also be noted that, though the building as proposed to be erected would be in advance of the line of buildings westward, it would be 25 ft. back from the line of the adjoining buildings eastward. Having regard to this and to the fact that it is proposed to preserve the trees and shrubs on the land abutting upon the Lewisham High-road, it would appear that the amenities of the road would be in no way disturbed by the erection of the building as proposed. In the circumstances we are of opinion that the plans cannot reasonably be objected to under the London Building Act, 1894, and we have so informed the Deptford Metropolitan Borough Council and the Education Committee."

Work at Fire-stations.—The following recommendations were agreed to:—

That the work of providing a new hot-water system, a separate entrance, and sliding poles, repaving, etc., the stables, and executing certain other alterations at the Manchester-square fire-station, at an estimated cost not exceeding 1,470*l.*, be proceeded with; and that the work be executed by Messrs. Gladding & Co. under the jobbing schedule.

That the work of rearranging certain quarters at the Bishopsgate fire-station, providing a bathroom and lavatory, etc., for the single men, extending the hot-water service, and providing sliding poles from all the floors at the station, at an estimated cost not exceeding 800*l.*, be proceeded with; and that the work be executed by Messrs. Gladding & Co. under the jobbing schedule.

That the work of extending the appliance-room, repaving the appliance-room floor, providing sliding poles, and executing certain alterations to the hose hoist and the electric lighting arrangements at the Redcross-street fire-station, at an estimated cost not exceeding 1,080*l.*, be proceeded with; and that the work be done by Messrs. Gladding & Co. under the jobbing schedule.

Removal of Sludge.—It was agreed that the seal of the Council be affixed to the contract with Mr. H. Crane for the removal by him during the year commencing January 22, 1910, of the sludge from the conduits, depôts, etc., of the Council's tramways north of the Thames.

Subways at "Elephant and Castle."—The Improvements Committee recommended, and it was agreed, that the estimate of expenditure on capital account of 3,000*l.* submitted by the Finance Committee in respect of the construction of subways at the "Elephant and Castle," Southwark, as authorised by the London County Council (General Powers) Act, 1909, be approved.

COURT OF COMMON COUNCIL.

A MEETING of the Corporation was held at the Guildhall last week, the Lord Mayor presiding.

Widening of Tudor-street.—The Improvements and Finance Committee submitted the award of the arbitrator (Mr. E. B. I'Anson) appointed to certify the amount to be paid for acquiring the freehold interest in the ground needed to widen the public way in front of Nos. 1 and 3, Tudor-street, in accordance with plan. Amount, 6,100*l.*

Painting Work.—The same Committee recommended, and it was agreed, that certain painting work required at the artisans' dwellings in Stoney-lane should be carried out, at an estimated cost of about 150*l.*, to provide work for the unemployed.

Hornchurch Wharf.—The Streets Committee, reporting on the erosion of the foreshore at Hornchurch Wharf, submitted for adoption the following arrangement with the Essex Sewers Commissioners, viz.:—(1) The Essex Sewers Commissioners to extend the apron southward from the new sluice for a distance of about 35 ft., including the filling in of the whole of the bay to a level to be agreed; (2) The Corporation to contribute one-half of the cost, estimated at 500*l.*, subject to the Corporation's contribution being limited to 250*l.*

Proposed Subway, Cannon-street. — Mr. Deputy Morton, M.P., moved that it be referred to the Streets Committee to consider and report as to the desirability of constructing a subway for pedestrians across Cannon-street by the Mansion House Station, with authority to confer with the Metropolitan District Railway Company, and to take expert advice thereupon, if necessary.—Mr. Deputy Wallace seconded the motion, and suggested that the matter should also be referred to the Improvements and Finance Committee to consider the desirability of having the street widened at this point, so as to make the width of the thoroughfare 70 ft. throughout.—The motion, with this addition, was agreed to.

The Blackfriars Gas Explosion.—Mr. Stopher, the Chairman of the Streets Committee, in answer to a question on the subject of the recent explosion at Blackfriars, stated that it had nothing whatever to do with the Corporation so far as the construction of the subway was concerned. When the subway was built the Gas Light and Coke Company altered one of their mains, diverting it in a vertical manner, and there was no doubt a defective joint in the main, and through it the gas had escaped, passing through it into the Post Office subway chamber. Unfortunately, an employee entered the place with a naked light, and as a result a serious explosion followed.

Shelters and Traffic Congestion.—The Streets Committee reported on an application from the Metropolitan District Railway Company for permission to erect iron and glass shelters over the footways of Byward-street (Mark-lane Station) and Fish-street-hill and King William-street (Monument Station). The Committee recommended that the application should be complied.—Mr. Green expressed the fear that these structures would lead to even greater congestion at the places mentioned.—Mr. Stopher, Chairman of the Committee, said that while they were anxious to give full facilities to the public they at the same time desired to assist the railway companies in the City.—The matter was adjourned.

Proposed Picture Exhibition.—Mr. Deputy Morton, M.P., moved that a loan exhibition of pictures be held in the Art Gallery in the ensuing spring, at a cost not exceeding 500*l.*, exclusive of insurance; and that it be referred to the Library Committee to take the necessary steps accordingly.—After a discussion, the motion was lost.

COTTAGE HOSPITAL, ABERBARGOED. — The Aberbargoed Cottage Hospital, erected by the Powell Duffryn Company for the use of their workmen, is now open. The building has been planned to accommodate fourteen beds; two large wards with five beds in each, and two double-bedded wards. Besides these wards upon the ground floor there is a surgeon's-room, with receiving-room adjoining, entered from the vestibule, operating-room, matron's-room, nurses' room, and staff dining-room, with kitchen and offices. Upon the first floor are six bedrooms, with bathroom, etc. In the basement is provided an ambulance-room, X-rays-room, and heating chamber, and upon the far side of the site is the laundry, mortuary, and post-mortem rooms. Above the main entrance archway, set in the wall, is a carved Portland stone panel of Charity healing the sick, executed by Mr. T. A. Jones, sculptor. The cost of the building, furniture, and fittings is 6,000*l.* The contractor is Mr. John Lloyd, Ystradmynach, and Mr. George Kenshole, Bargoed, is the architect.

Digitized by Google

THE BUILDER

DECEMBER 25, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 18s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 15s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

Fifty Years Ago.

FROM THE *Builder* OF DECEMBER 24, 1859.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

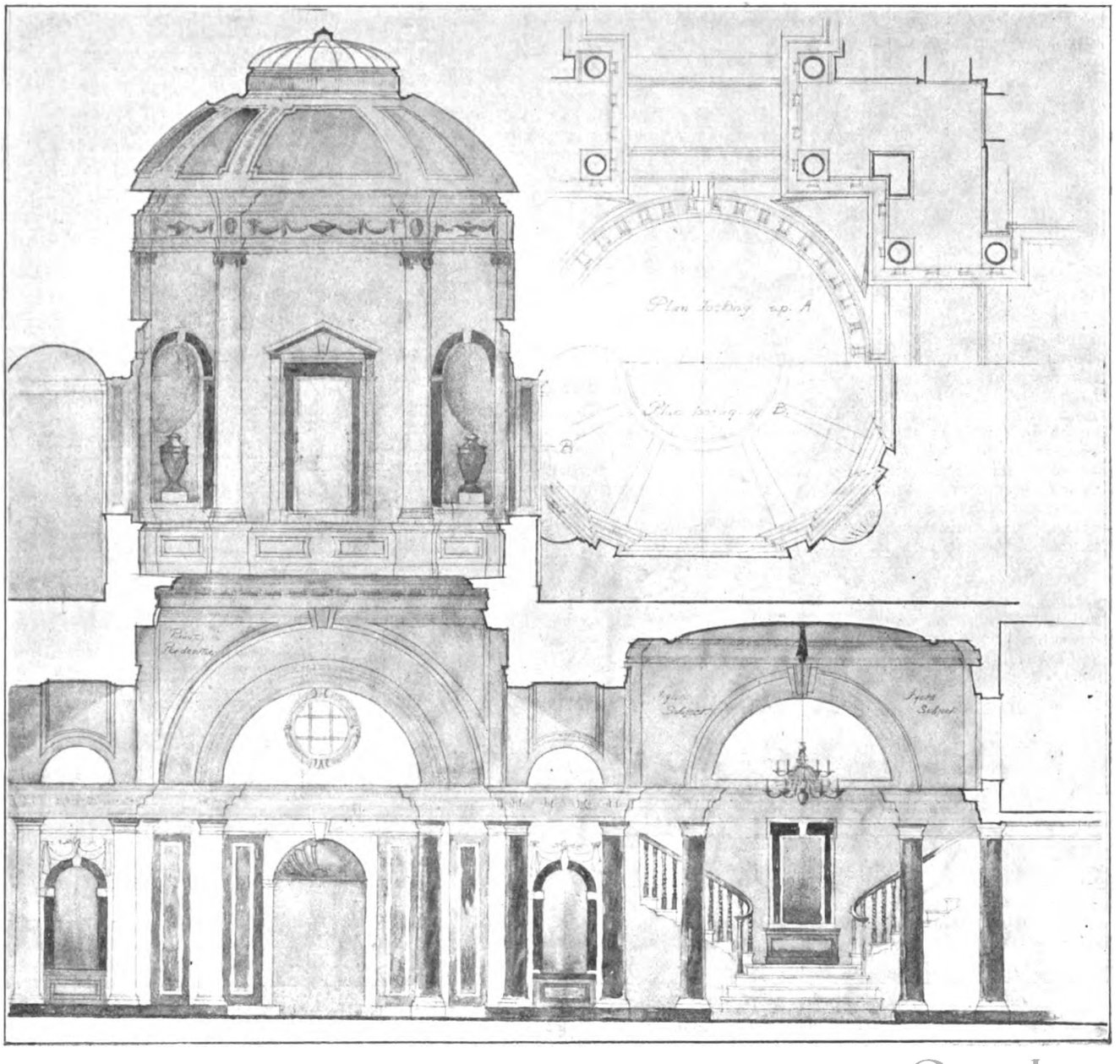
MR. GODWIN observed that, although time might not permit any lengthened discussion upon the elaborate and admirable account of Westminster Abbey delivered by Mr. Scott, still there was one point which he thought ought not to be passed over without some expression on the part of the meeting, which might have the effect of strengthening Mr. Scott's hands: he meant with respect to the restoration of the Chapter-house. No one could see the casts of its exquisite ornamentation, and the view on the wall showing the present condition of that beautiful apartment, even if he did not know the building itself,—no one could reflect on its present condition, chopped about and destroyed,—its pavement hidden,—its proportions obscured with presses and enclosures, without expressing a hope that speedy means would be taken to restore a work of so much interest and beauty. The water-colour drawings exhibited in the room showed the Chapter-house in all its beauty and magnificence of colour and carving; and the mere act of restoring it would in itself be the means of strengthening that school of decorative art which they were all so glad to see again springing up in England. Under these circumstances he thought it would be advisable that they should pass a resolution, at some proper time, calling upon the Government to assist the Abbey authorities in restoring it to its original shape.

*** We have a pardonable satisfaction in reprinting the protest of the former Editor of this journal, fifty years ago, in favour of restoring the Westminster Chapter-house into the condition in which we now see it.—ED.

Illustrations.

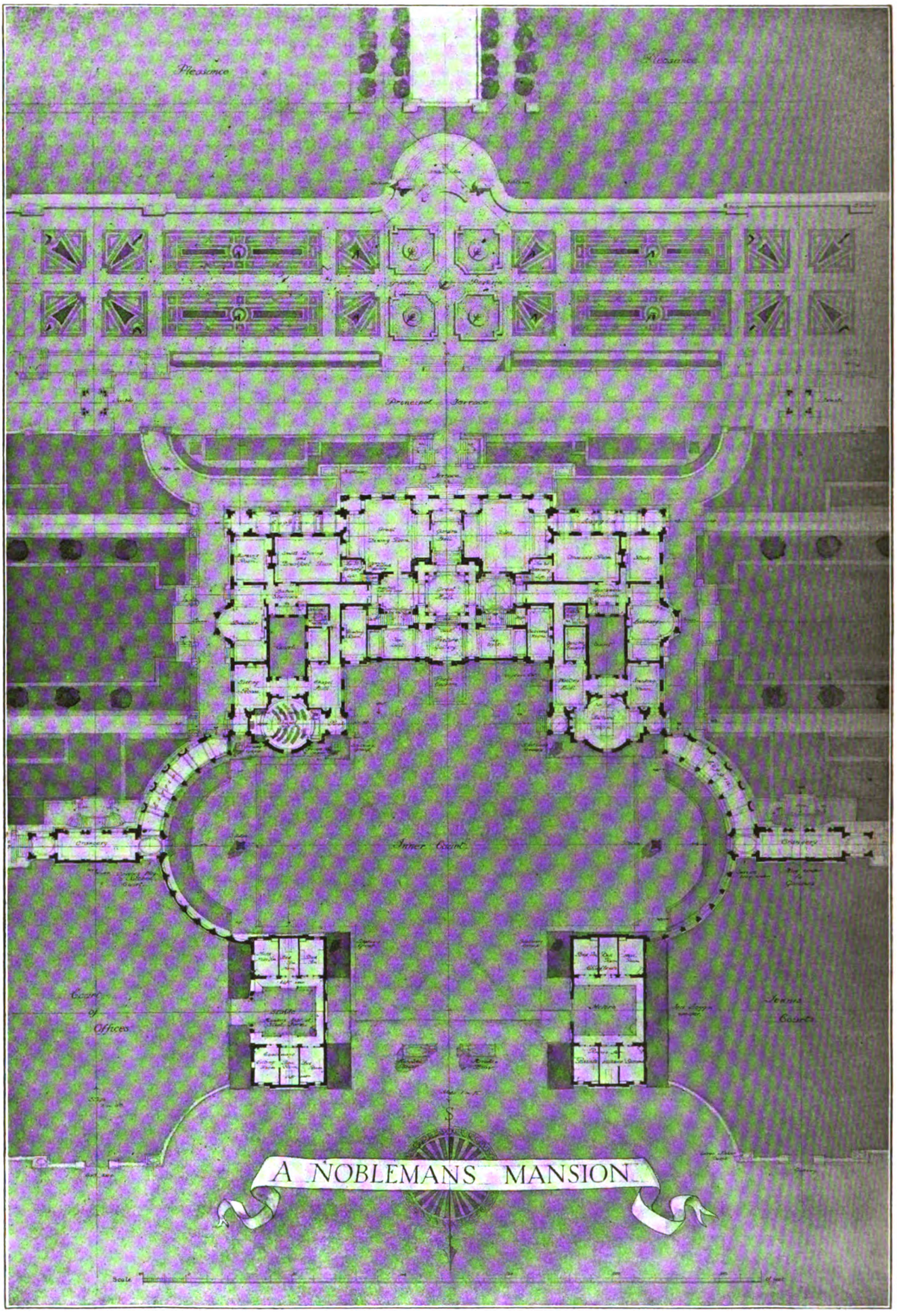
ROYAL ACADEMY GOLD MEDAL DESIGN IN ARCHITECTURE.

WE publish this week, on as large a scale as we can find space for, the design for a nobleman's mansion, by Mr. Harry H. Jewell, for which the Royal Academy Gold Medal and Travelling Studentship of 200*l.* have been awarded.



Royal Academy Gold Medal Design: A Nobleman's Mansion. Section through Great Hall.

Digitized by Google



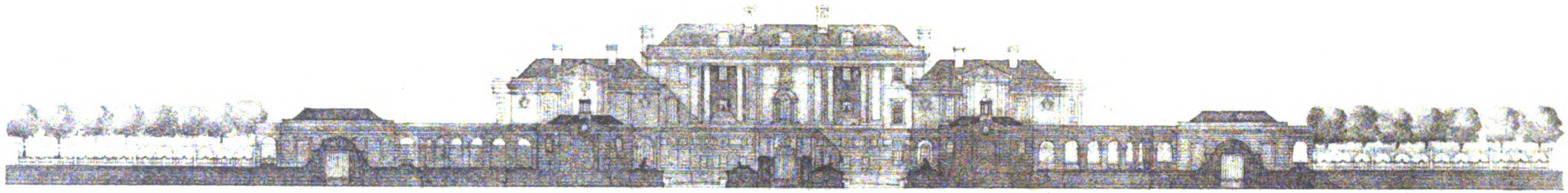
Royal Academy Gold Medal Design: Principal Plan.

Digitized by Google

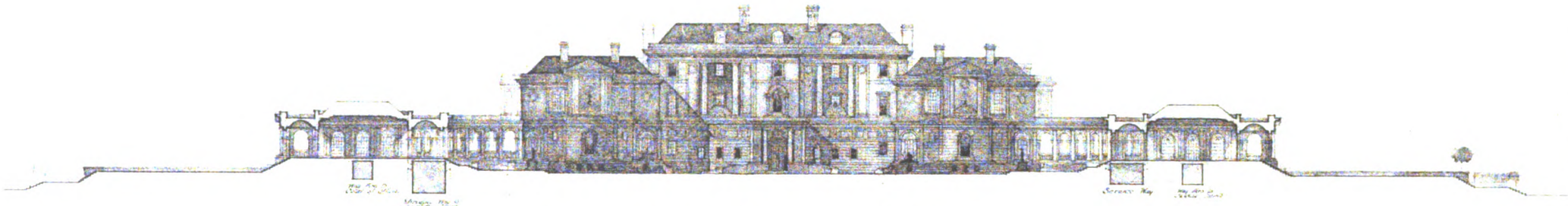
Digitized by Google

A NOBLEMANS MANSION.

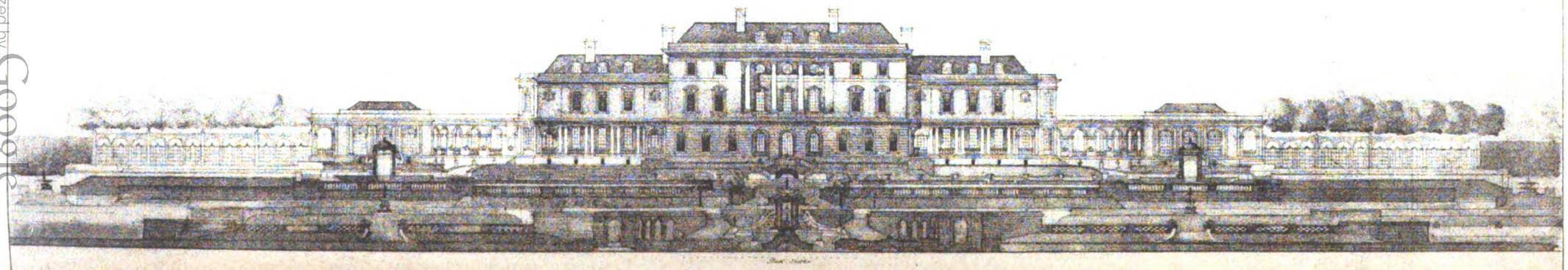
Scale



Elevation from eastside of Inner Courtyard

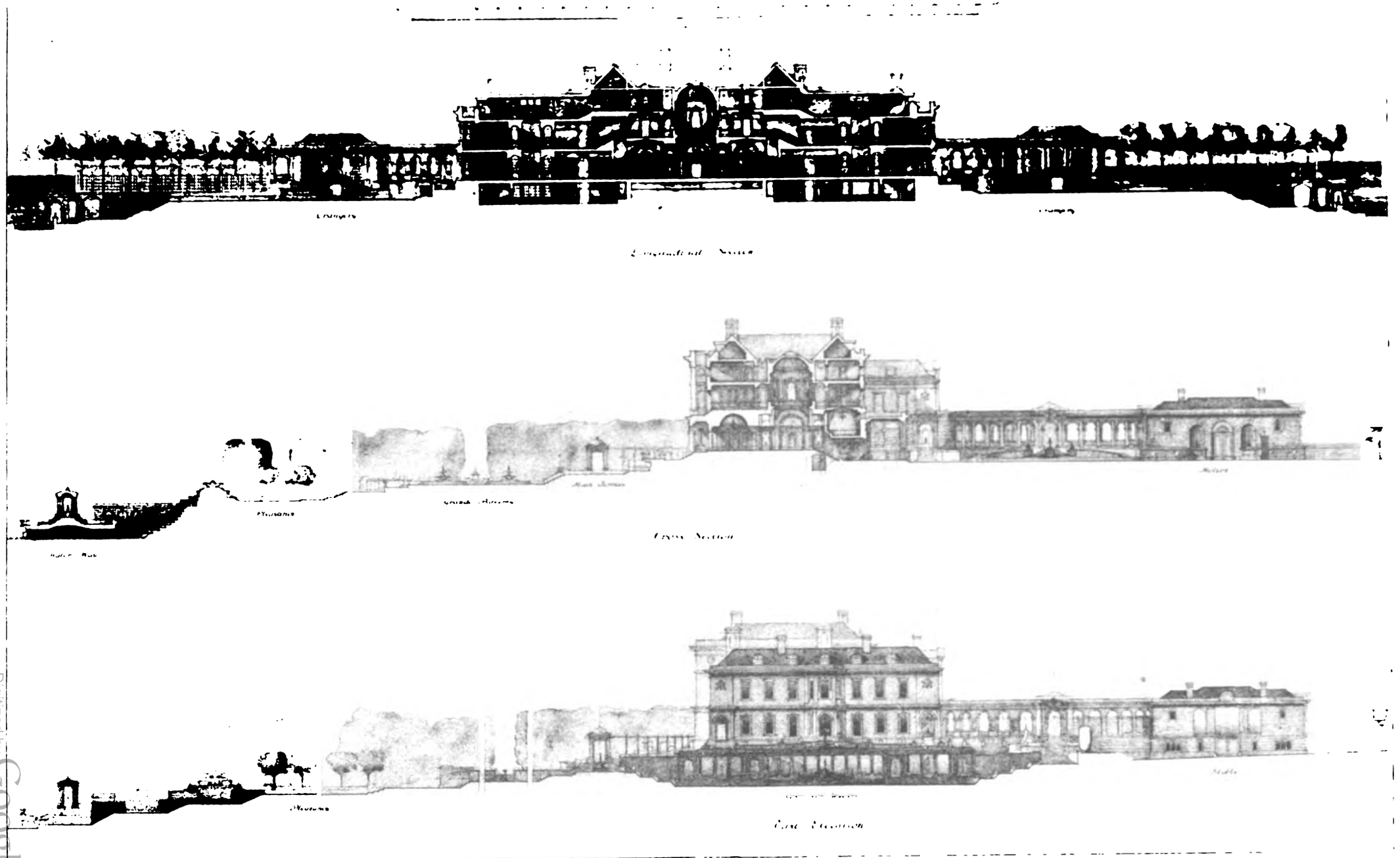


Elevation from South of Inner Court showing Sections of Offices.



River Front.

Digitized by Google

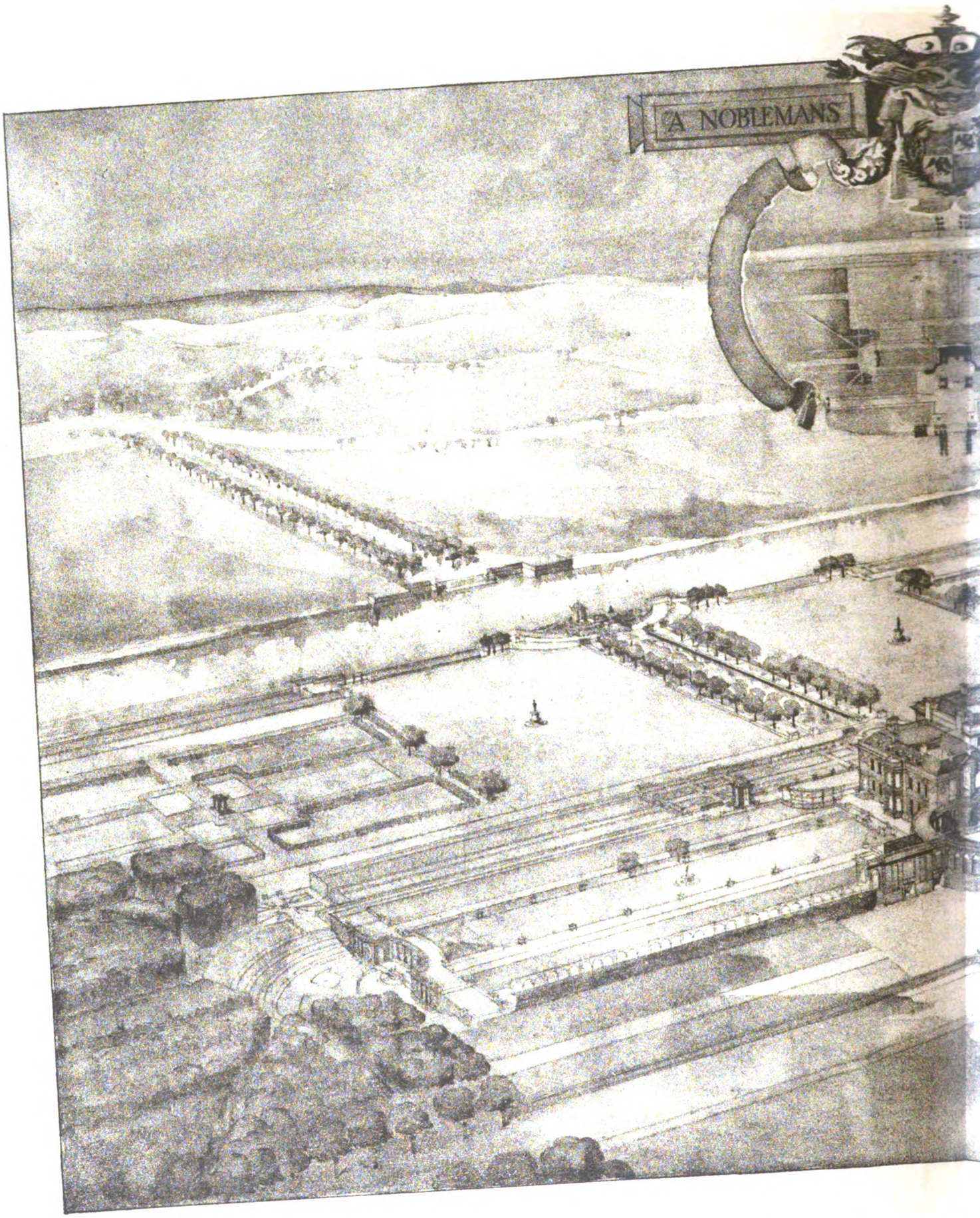


GOLD MEDAL DESIGN IN ARCHITECTURE, ROYAL ACADEMY, 1911.—BY MR HARRY H. JEWELL

Digitized by Google

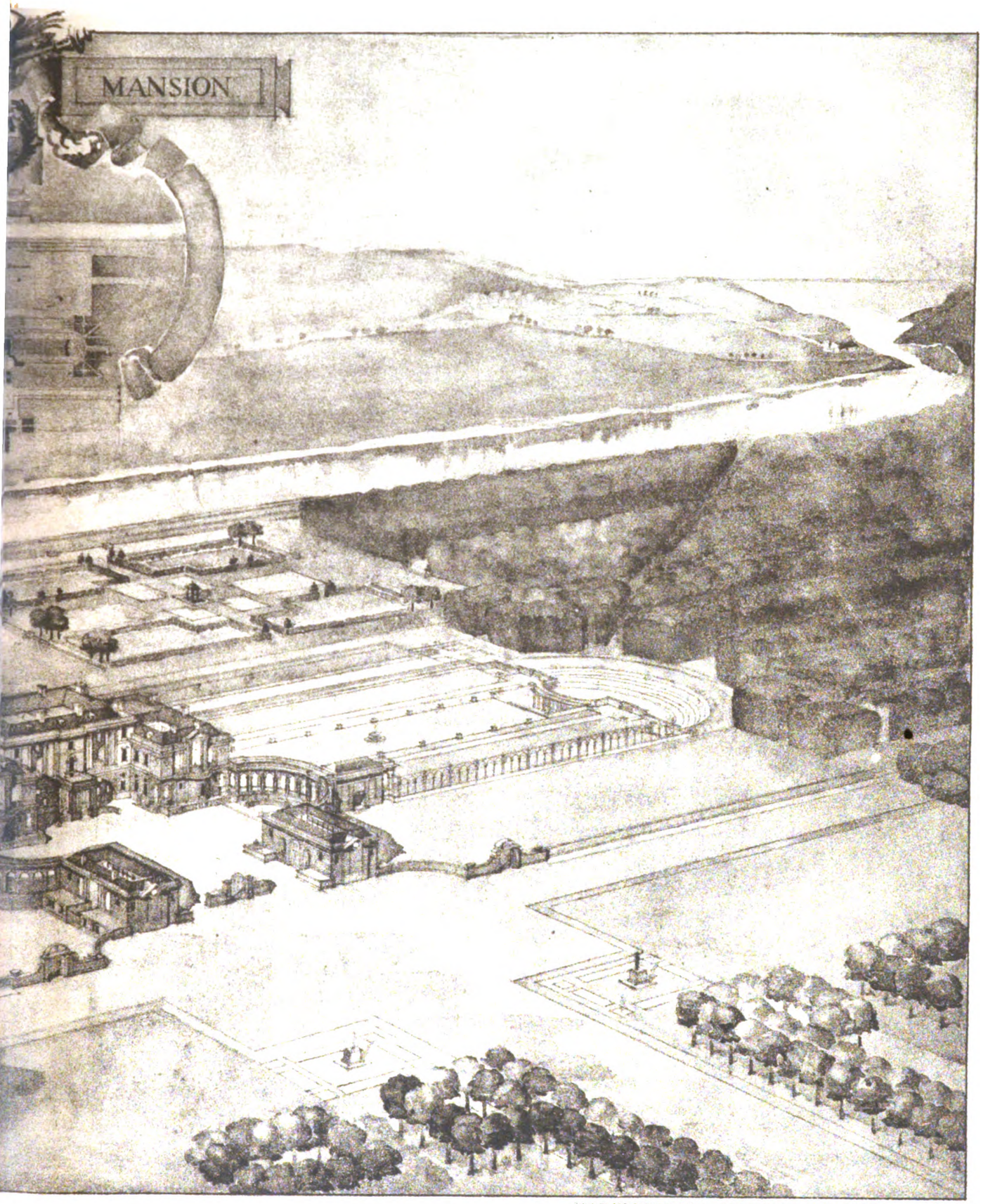
Digitized by Google

Digitized by Google



GOLD MEDAL DESIGN IN ARCHITECTURE; ROY

Digitized by Google



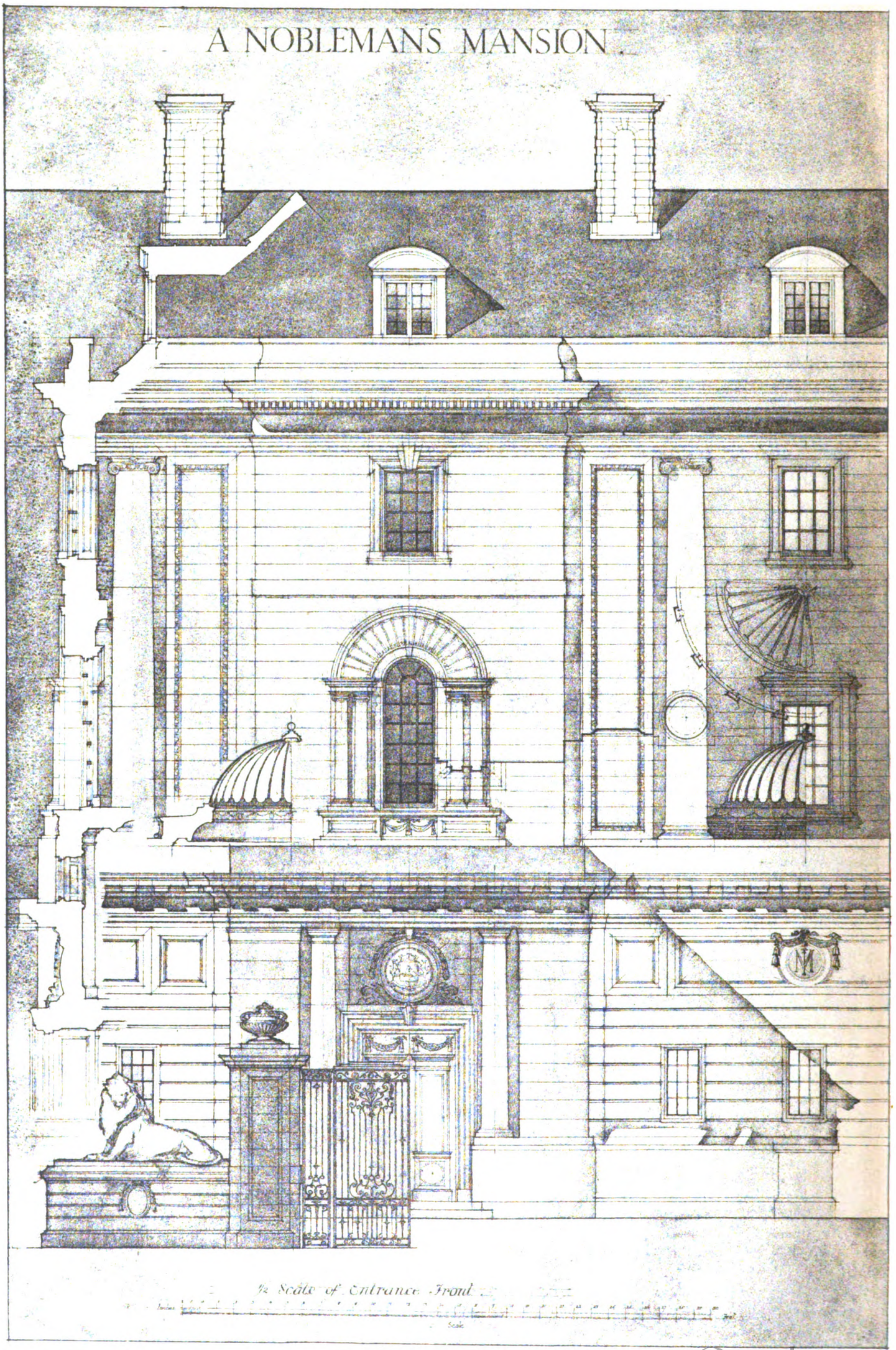
INK PHOTO SPRAGUE & C° L. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

YAL ACADEMY, 1909.—By Mr. Harry H. Jewell.

Digitized by Google

Digitized by Google

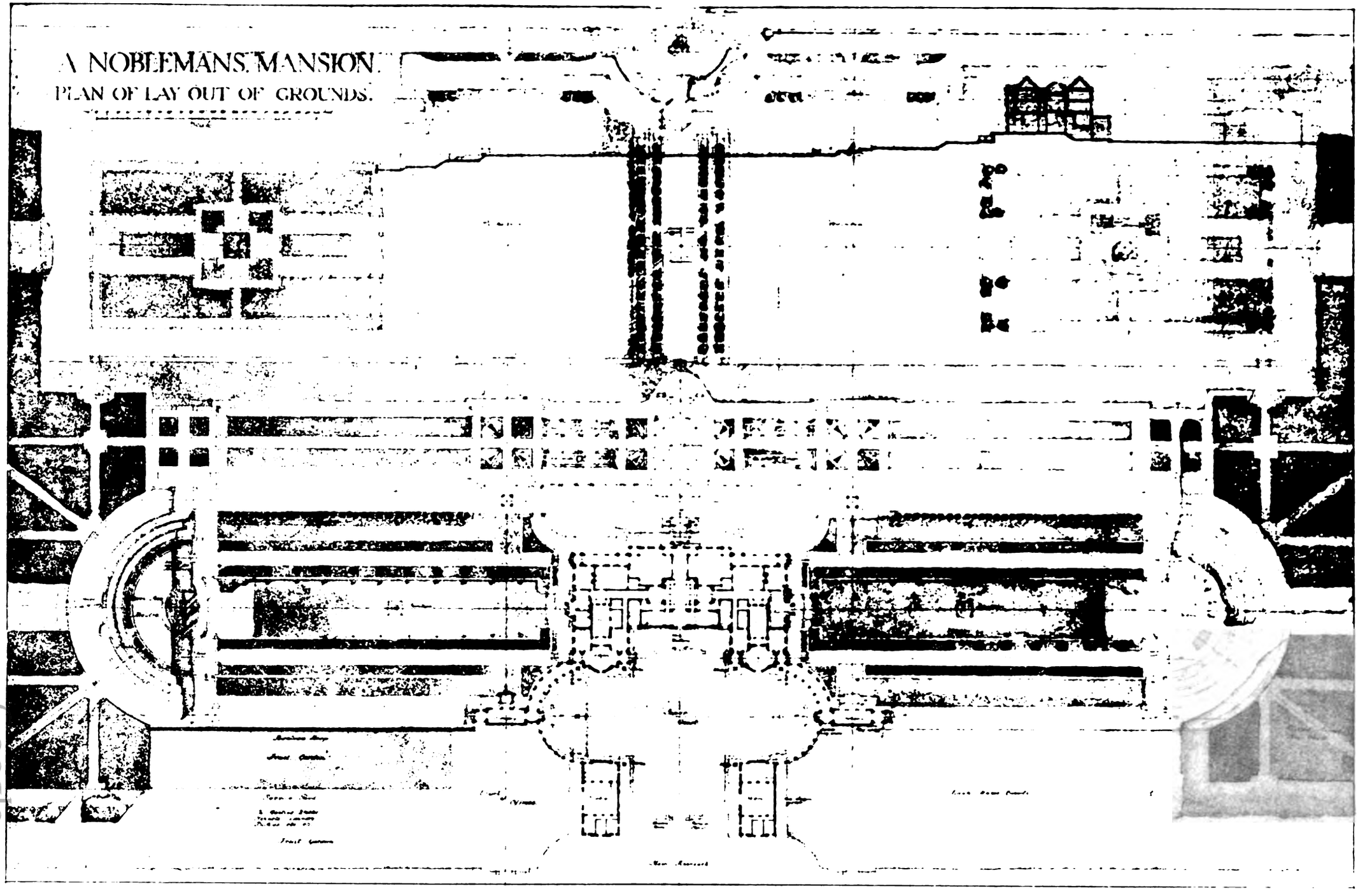
Digitized by Google



INK PHOTO SPRAGUE & C° L. 4 & 5 EAST HARDING STREET FETTER LANE E.C.

GOLD MEDAL DESIGN IN ARCHITECTURE; ROYAL ACADEMY, 1909.—By Mr. Harry H. Jewell.

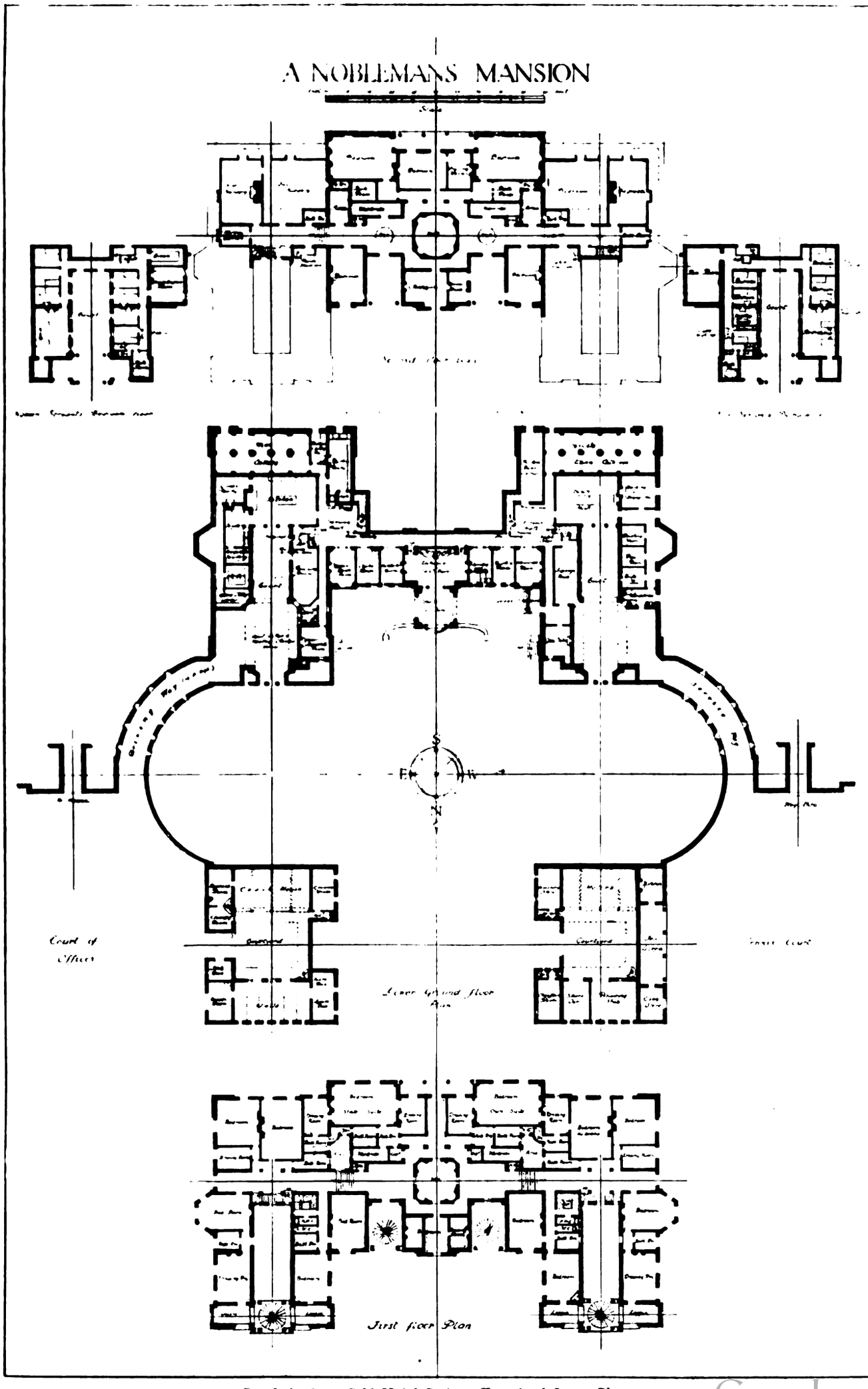
Digitized by Google



GOLD MEDAL DESIGN IN ARCHITECTURE: ROYAL ACADEMY, 1909.—BY MR HARRY H. JEWELL.

Digitized by Google

Digitized by Google



Royal Academy Gold Medal Design: Upper and Lower Plans.

Digitized by Google

We have already remarked on the design, and on some of the excellent points in the plan especially, in the general review of the Royal Academy students' work in our issue of December 18.

We have on some former occasions had the feeling that the Academy Gold Medal in architecture had been rather easily earned. In this case there need be no such feeling. The design shown here is a large and fine architectural conception, both in regard to the house itself and the stately arrangement of the grounds in connexion with it; and the author may be congratulated on having worthily obtained the highest reward which the Academy offers to its architectural students.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1909.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1909. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Chelsea.—A verandah in front of No. 15, Chelsea-embankment, Chelsea (Mr. C. E. Barry for Sir John Wolfe Barry).—Consent.

Dulwich.—A house on the southern side of Half Moon-lane, Dulwich (Mr. E. W. Banfield for the Herne Hill Baptist Church).—Consent.

Hackney, Central.—Buildings on the western side of Lower Clapton-road, Hackney, northward of the Windsor Castle public-house (Messrs. Fair & Myer).—Consent.

Marylebone, East.—The retention of projecting wooden reflectors at the premises of Messrs. Waring & Gillow, Ltd., Winsley-street, Oxford-street, St. Marylebone (Mr. R. F. Atkinson).—Consent.

Strand.†—An illuminated sign in front of the Alhambra Theatre, Leicester-square, at the first floor level (Mr. W. M. Brutton for the Alhambra Company).—Consent.

Strand.—The retention of two illuminated signs over the public way of Carting-lane, Strand (Mr. G. A. Richardson).—Consent.

Strand.—The re-erection of Nos. 18 and 20, Regent-street (Mr. G. Hornblower for Messrs. Elkington & Co., Ltd.).—Consent.

Wandsworth.—That the application of Mr. A. L. Guy for an extension of the period within which the erection of buildings on the Norfolk House estate, on the western side of Streatham High-road, Wandsworth, southward of Mount Ephraim-road, was required to be completed, be granted.—Consent.

Wandsworth.—One-story bay windows and porches in front of Nos. 22 to 54 (even numbers only) inclusive, Heybridge-avenue, Wandsworth (Mr. P. C. Davies for Messrs. Roberts & Tilbury).—Consent.

Wandsworth.—An iron and glass shelter in front of a stable building on the northern side of Cambalt-road, Putney (Mr. W. J. Renshaw).—Refused.

Westminster.—A projecting one-story shop in front of No. 163, Victoria-street, and a porch in front of No. 167, Victoria-street, Westminster (Messrs. Z. King & Son for Messrs. Raikes & Hiscox and Mrs. Lean).—Consent.

Width of Way.

City of London.—A building on the southern side of Byward-street, City, at less than the prescribed distance from the centres of the roadways of Barking-alley and Barking Churchyard (Mr. G. Sherrin for the Metropolitan and District Railway Companies).—Consent.

Southwark, West.—A building on the northern side of Friar-street, Southwark, to abut also upon the south-western side of Green-street, at less than the prescribed distance from the centres of the roadways of the said streets (Mr. H. Nicholls-Smith for Mr. B. Durston).—Consent.

Westminster.—Retention of an illuminated sign on the southern flank of Caxton House, Palmer-street, Westminster (Mr. H. W. Ford for the Metropolitan District Railway Company).—Consent.

Width of Way, Lines of Frontage, and Projections.

Hackney, Central.—An addition to a building at the rear of No. 223, Lansdowne-road, Hackney, to abut upon the northern side of Shrubland-road (Mr. F. Barrett for Messrs. P. J. Dixon & Sons).—Refused.

Hampstead.—A motor garage and greenhouse in front of Manor Cottage, on the southern side of Frognal-lane, Hampstead (Mr. D. J. Campkin for Mr. P. Brooks).—Refused.

Hampstead.—Porch at "Bayford House," Lyndhurst-road and Windsor-terrace, Hampstead (Mr. A. Graham for Mr. J. F. Gems).—Consent.

Hampstead.—A one-story kitchen addition at "Bayford House," Lyndhurst-road and Windsor-terrace, Hampstead, to abut upon the northern side of Lyndhurst-road (Mr. A. Graham for Mr. J. F. Gems).—Refused.

Kensington, South.—An external iron staircase at No. 3, Bolton Gardens-mews, Kensington (Mr. J. W. Jones).—Consent.

Peckham.—Additions at the eastern and western ends of St. Mary Magdalene's Church, Peckham (Mr. A. H. Ryan-Tenison for the Vicar and Wardens of the Church).—Consent.

Width of Way and Construction.

Bow and Bromley.—Retention of a wood and iron porch of a temporary character in front of the clergy-house, Red House Schools, Love-lane, Bromley (Messrs. Holman & Goodrham for the Rev. E. Sinker).—Consent.

Width of Way and Space at Rear.

Woolwich.—That the application of Mr. E. H. Wright for an extension of the periods within which the erection of four houses on the western side of Sandyhill-road, Woolwich, was required to be commenced and completed, be granted.—Consent.

Width of Way and Deviation from Certified Plans.

Whitechapel.—A deviation from the plan approved for the erection of a building on the site of No. 7, Fort-street, Stepney, so far as relates to the bringing forward of the building at the first and second floor levels (Mr. F. Fox).—Refused.

Line of Frontage and Space at Rear.

Wandsworth.—Seven houses on the north-western side of Allfarthing-lane, Wandsworth, to the line and with an irregular open space at the rear of the south-westernmost house (Mr. G. P. Pratt).—Consent.

Deviation from Certified Plan.

Whitechapel.—Deviations from the plan certified by the District Surveyor under sect. 43 of the Act, so far as relates to the proposed rebuilding of Nos. 39 and 41, Brushfield-street, Spitalfields (Messrs. Pooley & Follett).—Consent.

Buildings for the Supply of Electricity.

Strand.—Alterations at the Carnaby-street central electric light station of the St. James's and Pall Mall Electric Light Company, Ltd., Strand (Mr. C. Stanley Peach for the St. James's and Pall Mall Electric Light Company, Ltd.).—Consent.

First Schedule.

Westminster.—The omission of footings under certain walls at No. 10, Smith-square, Westminster (Messrs. Blow & Billerey).—Consent.

Uniting of Buildings.

City of London.—Use of iron doors to openings between two factory buildings abutting upon Great Tower-hill and Barking Churchyard, City (Mr. H. Chatfeild Clarke).—Consent.

Kensington, North.—The uniting of No. 21, Ladbroke-gardens, Notting Hill, with Nos. 22 and 23, Ladbroke-gardens, at the ground, first, second, third, and fourth floor levels (Messrs. Norton, Trist, & Gilbert).—Consent.

Low-lying Land.

Greenwich.—That the Council do consent to the application of Mr. F. W. Saunders for an extension of the time within which the erection of seventeen dwelling-houses on low-lying land situated on the western side of West-street, Charlton, was to have been completed.—Consent.

The recommendation marked † is contrary to the views of the local authority concerned.

Architectural Societies.

ARCHITECTURAL ASSOCIATION DEBATING SOCIETY.

A joint meeting was held with the junior members of the Surveyors' Institution on December 17, at 18, Tufton-street, Mr. A H. Belcher in the chair. The following motion was debated:—

"That the planning of towns and estates should be designed by an architect assisted by a surveyor."

Mr. Raymond Unwin, in supporting the motion, said that the first essential to the town planner was a complete knowledge of all the factors, existing conditions and tendencies in the town and traffic, water supply, sewage disposal, and particularly a complete knowledge of the site, and it was the work of the surveyor to bring together all this information. Every new condition made the problem more complex, but every new condition was an indication to its solution. In planning a town one had not to consider about lines so much as building masses; one was not conscious of the curbing. What was important was the frontage of the buildings; the buildingstwere, in fact, the town. The problem was, therefore, architectural. Close co-operation was, no doubt, necessary between the architect and the surveyor, but the man most fitted to make the plan was the man whose imagination had been trained to realise from drawings the effect of buildings and groups of buildings when built; that is to say, a trained architect. The surveyor's function was to discover and present the facts, the architect's function to weld them into an artistic whole with the assistance of the surveyor as critic from the practical standpoint.

Mr. E. Howard, P.A.S.I., in opposing the motion, suggested that the positions should be reversed; it was the architect who should assist the surveyor. He had looked up in an encyclopædia the definition of an architect, which was: "An architect is an artist whose materials are not pigments, but wood, bricks, stone, and iron." A surveyor, on the other hand, was "skilled in the development of estates." He considered these definitions true. If estate development was part of an architect's practice, why was the subject not included in the Royal Institute of British Architects' examinations? The Surveyors' Institution examinations were full of it. Mr. Unwin had admitted that a complete plan of the site was the first necessity. Was not this surveyors' work? Of the first importance was drainage. Were not surveyors trained from their pupilage in the best matters of drainage? Water supply did not come within an architect's province, and the laying out of roads was certainly not done by a surveyor. The architect would work up the plan to form vistas and picturesque settings; this is where he would assist the surveyor.

A long and spirited debate ensued. In support of the motion it was contended that all great historical examples of fine town plans were designed by architects, while the surveyors were responsible for the modern suburbs. In opposition it was urged that the practical man should be the predominant partner. On a show of hands the motion was lost by a majority of three.

The next meeting will be held at 18, Tufton-street on Friday, January 7, at 7.15, when Mr. L. G. Detmar will support, and Mr. Alick Horsnell will oppose, the following resolution:—

"That a commission should be appointed to control the designs of the exterior of buildings in towns and cities."

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

The annual general meeting of this Institute was held at 31, South Frederick-street, Dublin, on the 16th inst., the Priesdent, Mr. Fredk. Batchelor in the chair. The Hon. Secretary read the minutes of the last annual general meeting, which were confirmed and signed; and read also the Report of the Council for 1909, from which we make the following extracts:—

"*Incorporation.*—In presenting the annual Report for the year 1909, your Council takes the opportunity of congratulating the members of the Institute on the fact that it is now an incorporated body, the Certificate of Incorporation having recently been received from the Board of Trade. As a matter of form, and in order to comply with the requirements of the Board, members will shortly be invited to signify their desire to become members of the newly-incorporated Institute. Apart from the incorporation, your Council ventures to think that the past session will be noteworthy in the annals of the Institute on account of other important matters which have occupied its attention. The consideration of these matters has necessitated many special meetings, no less

Digitized by Google

than ten having been held, in addition to the nine regular meetings. At all of these meetings the attendances have been well maintained.

School of Architecture.—Perhaps the most important event of recent years in connexion with our profession in Ireland has been the establishment of a school of architecture in the National University. The Council, early in the year, took active steps to press the claims of architectural education on the Commissioners. A carefully-prepared statement embodying the Council's views was prepared and forwarded to the authorities. Your Council sent a deputation, consisting of the President, Mr. Ashlin, and Mr. Orpen, which attended before the Commission. It is gratifying to record that, as we venture to conclude, the result of your Council's action has been the recognition, for the first time in Ireland, of the art of architecture by a University.

The Chair of Professor of Architecture has not yet been filled. Your Council earnestly hopes that, when the appointment has been made and the school established, the cause of architectural education will have received a stimulus and incentive such as has been lacking in the past. The recognition of our art by a University is a memorable event, and the profession in Ireland will heartily welcome this recognition.

Representation on R.I.B.A. Council.—During the past year the R.I.B.A. have made some very radical changes in their by-laws, one of which materially affects the representation of the allied societies on the Council of that body. It is now enacted that of the nine seats on the Council filled by the representatives of allied societies, three shall be allotted to the societies having the largest number of Fellows and Associates of the R.I.B.A. on their membership roll, and the other six shall be filled in rotation by the remaining fifteen societies located in the United Kingdom in the order of their size and importance. The effect of this rule will be that for the present this Institute will be able to send its President (provided he be an F.R.I.B.A.) one year in every three to the R.I.B.A., but as other societies become affiliated the interval will become greater. Your Council, both by correspondence and through the personal representations of your President, made a very strong case to the R.I.B.A. for exceptional treatment for the Irish Institute, both on the ground of its seniority over all the other allied societies, and also because of its geographical position and representative character, but unfortunately all its efforts in this matter were unavailing. . . .

Institute Journal.—The *Journal* of the Institute has, under the able editorship of Mr. R. Caulfield Orpen, Fellow, proved a great success, and it is hoped that circumstances may warrant its publication at more frequent intervals in the future, in which case it might be utilised by provincial members to give expression to their view on matters of interest connected with the profession generally, and with the Institute in particular."

Mr. A. E. Murray proposed the adoption of the Report, and Mr. G. W. Crowe seconded, and it was agreed. The President declared the following elected to serve on Council for 1910:—Messrs. J. A. Webb, R. Cooper, C. H. Ashworth, G. P. Sheridan, F. G. Hicks, A. E. Murray, H. Allberry, A. G. C. Millar, and L. O. Callaghan. Messrs. F. Shaw and J. Holloway were appointed auditors for 1910. The Treasurer read his financial statement and submitted a statement of accounts which was exceedingly satisfactory. Mr. G. C. Ashlen proposed the adoption of the Hon. Treasurer's Report, and Mr. Holloway seconded, which was passed unanimously. The President then read his address.*

The proceedings then terminated.

GUILD OF ARCHITECTS' ASSISTANTS.

The South Wales Branch of this Guild held the first of a series of meetings, in Cardiff, on Friday evening, December 17. The Cardiff, South Wales, and Monmouthshire Society of Architects kindly lent their room for the purpose. A paper was read by Mr. S. Bowen Williams on "Llandaff Cathedral," and was followed by a very interesting discussion. Votes of thanks to the speaker and the Society, for the use of the room, were then passed. The meeting was well attended.

* We should have been glad to print Mr. Batchelor's short address, but unfortunately the typewritten copy furnished to us was in many places quite illegible.

Correspondence.

THE CONCRETE INSTITUTE:

STANDARD NOTATION FOR FORMULÆ.

SIR,—I am desired by the Council of the Concrete Institute to forward you copies of a proposed standard notation for formulæ employed in reinforced concrete work.

In 1909 the Council, having regard to the confusion arising from the many various symbols used for the same quantity by scientific writers and the advantages of an agreement on a standard notation, referred the matter to its Science Committee. This Committee was later requested to consider the proposal for a standard notation received from the International Commission on Reinforced Concrete (founded by the International Association for Testing Materials).

The Science Committee resolved:—

"1. That the "three-alphabet" system adopted by the International Commission, consisting of capital Roman letters, small Roman letters, and small Greek letters, be approved.

2. That the principle of the initial letter, *i.e.*, the use of initials or distinctive self-explanatory letters of the governing words that were employed as a general rule for abbreviations, should be adopted.

3. That the desired uniform mathematical notation for the most important magnitudes occurring in the specifications and statical computations should be drawn up, so as to be in harmony as far as possible with the language in which such specifications were written or made."

A Subcommittee consisting of Professor Adams, Mr. W. Dunn, Mr. E. F. Etchells, Mr. Franck, and Mr. C. F. Marsh, was then appointed to prepare a draft report, which was considered by the whole Committee, and, after some modification, was eventually adopted.

Copies of this draft Report were sent to Professor Melan, and were considered by a Committee of the International Commission on Reinforced Concrete at Copenhagen in September of this year.

It was found that the principle of the initial letter formed an obstacle to agreement with Continental nations. For instance, in England and America *d* would be used as a contraction for depth, and *b* as a contraction for breadth, but the contractions of the French words "hauteur" and "largeur" would give us *h* and *l*. Again, on the Continent, Greek smalls are used for intensity of stresses.

The American and English delegates to Copenhagen (Professor Talbot, of Illinois, U.S.A., and Mr. William Dunn, Chairman of the Science Committee of the Concrete Institute) were of the opinion set out in the Report, viz.:—That it would be difficult to induce the English-speaking peoples to adopt the Continental practice in respect of the use of Greek letters for tensile, compressive, and shearing stresses.

It was felt that such a general agreement as is embodied in the resolutions of the Science Committee previously drafted is all which could be hoped for at present, and that the English-speaking peoples should endeavour to agree on a standard notation for their own use, based on the abbreviation of English words.

Copies of these proposals of the Concrete Institute have been sent to the British and American Societies concerned.

You will, I am sure, realise that if such a list could be adopted by the American and English nations it would be an immense boon to both.

I enclose two copies of the list for your use.

ARTHUR E. COLLINS,
Hon. Secretary.

[*** We may have something further about the list in another issue.—ED.]

BAPTIST CHURCH, BELLSHILL, GLASGOW.—The memorial-stones of the new Bellshill Baptist Church were recently laid. The church is seated for 550 persons, has open timber roof, and the windows will be filled with leaded glass. The walls are of red sandstone, and the roofs will be slated with green slates and red tile ridging. Messrs. Miller & Black, Glasgow, have been the architects.

BOOKS RECEIVED.

BARONIAL AND ECCLESIASTICAL ANTIQUITIES OF SCOTLAND. By R. W. Billings. Parts XIX. and XX. (Edinburgh: E. Saunders & Co. 1s. per part.)

HOW TO PLAN A HOUSE. By G. Gordon Samson, architect. Pp. 133. (Crosby Lockwood & Son.)

THE PRACTICAL ENGINEER POCKET-BOOK AND DIARY. Pp. 684. (The Technical Publishing Company. 1s. 6d. and 1s.)

EIGHT HUNDRED YEARS OF DARLINGTON PARISH CHURCH. By the Rev. Herbert Wilson. Pp. 77. (Uxbridge; Lucy & Birch. 3s.)

Master Builders' Associations, etc.

SUNDERLAND BUILDERS' ASSOCIATION.

The annual dinner in connexion with the Sunderland and District Building Trades' Association was held in the Palatine Hotel, Borough-road, on the 16th inst. Mr. J. Morice Wright (President of the Sunderland Association) presided, and among those supporting him were the Mayor (Councillor Young), Councillor Hope (Secretary), Messrs. Ernest J. Brown (President of the National Federation of Building Trade Employers), John W. White (Vice-President), W. T. Weir (President of the Tyne and Blyth District Federation), G. T. Brown (President of the Northern Architectural Association), Alex. Ross, South Shields (President of the Northern Counties Federation); F. W. Ranken (Vice-President), W. Masters (President of the Middlesbrough Association), J. T. Scott (President of the North Shields Association), W. Foster (President of the Newcastle Association), John Emmerson (Vice-President of the Sunderland Association), W. M. Thompson (President of the Hartlepools Association), Councillor J. T. Armstrong (President of the South Shields Association), Mr. J. W. Moncur (Borough Surveyor), and others, the company numbering over a hundred.

Mr. F. W. Ranken proposed "The National Federation and the Northern Counties Federation of Building Trades Employers." In doing so he said the National Federation had been in existence thirty-three years, and it had been most progressive during the past five or six years. The national as well as the county organisations was doing a great deal of good, and they deserved the hearty support of all connected with the trade.

Mr. E. J. Brown replied, and thanked the members for their invitation to visit the North. The greatest aim of the Federation was to improve the organisation of the building trade throughout the country, and in that respect the South had already taken a leaf out of the book of the North. They had recently admitted builders' merchants into the Federation, and, although only two meetings had been held, 153 new members were enrolled.

Mr. A. Ross also responded.

Mr. W. T. Weir next submitted "The Sunderland Association," and said that they, like others in the district, had suffered greatly through the depression, but he hoped that the good times would not be long in coming.

Mr. J. M. Wright acknowledged the toast, and said there were still lots of things to be done to benefit the building trade of the country.

Mr. J. W. White proposed "The Mayor and Corporation of Sunderland and Other Governing Authorities."

The Mayor, in reply, said he believed he was one of the oldest members of the Association, it being now some thirty or thirty-five years since he went to his first meeting. He urged the young men of the town to take greater interest in the technical colleges, as if they did not do so other nations would before very long outstrip us.

Councillor G. Swan submitted "The Architects, Surveyors, and Engineers," and to this Mr. G. T. Brown suitably replied.

On the proposition of Mr. R. J. Huntley, the health of the Chairman was cordially drunk, and this concluded the toast list.

The annual general meeting of the Board of Representatives of the Northern Counties' Federation of Building Trade Employers was held on the 16th inst. in the Palatine Hotel, Sunderland. Mr. J. Davison, Stockton-on-Tees (the President), was in the chair.

Councillor W. H. Hope, Secretary, presented the annual report, which stated that the local Associations had maintained and strengthened their position and increased their membership. A canvass of the members of the sub-trades and merchants had been most successful, a good many having joined. Many improvement in conditions of contracting

Digitized by Google

had been effected. An agitation was proceeding for fair conditions of tendering, and steps had been taken by the Federation to approach the engineers and surveyors on the matter. The report concluded by alluding to the proposed visit of the National Federation to Newcastle in 1911.

The election of officers resulted:—President, Mr. Alex. Ross (South Shields); Vice-President, Mr. F. W. Ranken (Sunderland); Hon. Treasurer, Mr. J. W. White (Sunderland); Hon. Auditors, Messrs. Percy Bray and J. C. Hope. An Executive Committee was also elected.

It was decided to hold the March quarterly meeting at North Shields.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDEEN.—Theatre; Mr. H. C. Cavanagh, managing director, Aberdeen. Refuse destructor; Surveyor, Town Hall, Aberdeen.

Ashington.—One hundred houses, Woodburn-road; manager, Newbiggin Colliery Company, Ashington.

Ayr.—Restaurant, Alloway-street (5,000*l.*); Mr. B. Houston, Ayr.

Bexhill-on-Sea.—Parish hall; Vicar, St. Barnabas Church.

Birmingham.—Electric theatre, High-street; Mr. L. H. Findlay, architect, 29A, Charing Cross-road, W.C.

Buxton.—Cottage hospital; the Governors, New Cottage Hospital, Buxton.

Chatterden.—School; Mr. W. H. Robinson, architect, Caxton House, S.W.

Childreley Gate.—School; Mr. E. Dunn, architect, Sydney-chambers, Cambridge.

Cradley Heath.—Converting schools into warehouses, for Messrs. Holt & Willetts.

Dumfermline.—Dwellings, Townhill-road; Mr. J. Anderson, architect, Dumfermline.

Glasgow.—Engine works, Dobbie's Loan, for Mr. W. MacDonald, Bergins.

Havant.—Extensions to infirmary; the Guardians, Havant.

Isle of Wight.—Hospital; Mr. S. R. Cocks, architect, Newport, Isle of Wight.

Isleworth.—School, Twickenham-road (640 places); Mr. J. G. Carey, architect, Heston and Isleworth Education Committee.

Lanark—Skating-rink; Messrs. W. & J. Lewis, rink proprietors, Glasgow.

Langley Park (Durham).—Houses; Messrs. J. Robson & Sons, Lanchester.

Linsdale.—School; Mr. W. H. Leete, County Hall, Bedford.

Lisnakea.—Twenty-seven houses; Mr. J. Bloomfield, builder, Lisnakea.

Lowestoft.—The Town Council has passed the following plans:—Four cottages, Morton-road, for Mr. George Forster; six houses, Worthing-road, for Messrs. J. & B. Swatman; new store, Rant Score, for Messrs. Youngman, Preston, & Co.; six houses, St. Aubyn's-road, for Mrs. E. M. Lambert; three houses, Royal-avenue, for Messrs. R. C. Mason and G. B. Chadd; eleven houses, London-road South, for Mr. V. Grayson.

Maidstone.—Church and school; Trustees, Unitarian Church, Maidstone.

Marlborough. — Additions, Marlborough College (15,000*l.*); Mr. C. E. Ponting, architect, Marlborough.

New Brighton (Merthyr).—School; Mr. Thackeray, Town Hall, Merthyr.

Newhaven.—Girls' school; Messrs. Peskett & Co., builders, Newhaven.

North Bierley.—Additions to workhouse; the Guardians, North Bierley.

Northover.—Factory, for Messrs. Clark, Son, & Morland, Glastonbury.

Pinner.—The Rural District Council has passed a plan lodged by Mr. S. Elkington for eight houses, Eastcote-road.

Rowley Regis (Worcs.).—Restoration of parish church; the Vicar, Rowley Regis, Worcs.

Selkirk.—Mission church; the Vicar, St. Boswells, Selkirk.

Staplegrove (near Taunton).—Additions, church; Mr. E. Sedding, architect, Queen Anne-terrace, Plymouth.

Stenalees.—Wesleyan church (1,500*l.*); the Trustees.

Stoke-upon-Trent.—The Town Council has passed the following plans:—Alteration to premises, London-road and Commercial-street, for Mr. A. Eyres; alterations to premises, Wolfe-street, for Messrs. Robinson & Leadbeter; five houses, Princes-road, for Mr. B. James.

Surbiton.—Dust destructor; Mr. H. T. Mather, Surveyor, Surbiton District Council.

Swansea.—Buildings, Cambrian-place, for Mr. T. W. James. Skating-rink, Alexandra-road, for Messrs. Owen Harris, W. Hasquen-court, S. Crawcour, and W. Jacobs. Adaptation of ragged school for extension of central police and fire station; Swansea Town Council. New ragged school (2,000*l.*), for the Trustees. Proposed sanitorium, also fifty houses, Cwm-road; Mr. M. Hoskins, estate agent, Swansea Town Council. Rebuilding Nos. 24, 25, and 26, Waterloo-street, for Mr. Ernest Leader. The Town Council has passed the following plans:—Five houses, Penmaen-terrace, for Mr. A. J. Marles; five houses, Monterey-street, Manselton, for Mr. James Taylor; nine houses, Pantygwydr-road, for Mr. Griff. Davies; extension, motor garage, St. Helen's-road, Messrs. Geo. Ace, Ltd.; five houses, Alice-street, Cwmdu, for Mr. Charles Gustavus; motor garage, Clase-road, Morriston, for Mr. P. T. Davies; four houses, Waterloo-place, Brynmill, for Mr. T. F. Williams; eight houses, Monterey-street, Manselton, for Mr. G. Davies; four houses, Pantgwydr-road, for Mr. E. L. Tucker; three houses, Pantygwydr-road, for Mr. John Davies; four houses, Springfield-street, Morriston, for Messrs. Walters & John; three houses and one shop, Danygraig-terrace, for Mr. David Austin; six houses, Eversley-road, for Coedsaeson Estate Company, Ltd.; four houses, Park-view, Uplands, for Mr. Charles Williams; eight houses off Eaton-crescent, for Mr. Ben Lewis.

Swindon.—Electric theatre, Regent-street; Mr. P. Aulton, architect, Swindon.

Torquay.—Proposed fire-station, St. Mary-Church; Mr. H. A. Garrett, Borough Surveyor. The Town Council has passed the following plans:—Shop, Albert-road, for the Torquay Co-operative Society; three houses, Windsor-road, for Messrs. Collard and Bailey.

Whiting Bay. — Police-station; Mr. McKinlay, architect, Rothesay, N.B.

Worksop.—School: Mr. Hooley, architect, Shire Hall, Nottingham.

NATIONAL AND ANCIENT MONUMENTS OF IRELAND.

THE Commissioners of Public Works, Ireland, in their seventy-seventh annual report, just issued, make lengthy references to the monuments vested in them or brought to their notice in accordance with the provisions of the Irish Church Act, 1869, and the Ancient Monuments Protection Acts of 1882 and 1892. Under the provisions of the Irish Land Act, 1903, sect. 14, the Land Commissioners may, with the consent of the Board, vest in them any ancient monument possessing historic, traditional, or artistic interest situated on lands sold under the Act, and if the Board decline to accept the custody of the monument it may, with the consent of the Council of the county in which the monument is situated, be vested in that body. During the past year the cases named below have been brought to the Board's notice by the Land Commissioners, viz.:—Clougscregg Castle, co. Kilkenny; Arboe Church and Celtic Cross, co. Tyrone; Stone Cross, Comeen, co. Roscommon; Cloghanecarhan Ogham Stone, co. Kerry; Rathkenny Castle, co. Meath; Athlumney Castle, co. Meath; Piggott's Castle, Queen's County; Ballyallinan Castle, co. Limerick; Danganbrack Castle, co. Clare; Mornin Castle, co. Longford; Town Walls, Athenry, co. Galway; and Fleming's Folly, co. Cavan. Of these, Arboe Church and Cross, Cloghanecarhan Ogham Stone, and Athlumney Castle have been accepted for guardianship. The remainder, it is understood, have been offered to the county councils, and several of them have been accepted. The following five structures have been offered by private individuals for vesting, viz.:—Mongavlin Castle, co. Donegal; Dunhill Castle, co. Waterford; Holed Stone, co. Antrim; Abbeydorney Abbey, co. Kerry; and Fore Abbey, co. Westmeath. The first three, though of considerable local interest and well worthy of preservation, were not considered of sufficient importance to warrant their acceptance by the Board. In the case of Dunhill Castle the Board have acceded to a request that when the necessary funds are raised locally they will undertake the expenditure of the money under the control of their Inspector. The ruined abbey at Abbeydorney is now practically a graveyard, and as the site is entirely occupied by graves and tombs no useful work could be done without more or less interference with graves; and as the District Council is the sanitary authority in charge of the graveyard it was found necessary to leave the custody of the ruin also in the hands of the Council. The Board decided to accept the guardianship of Fore Abbey. The title is complicated, and the vesting deed cannot be completed until the consent of one of the reversionary owners has been obtained.

Works of repair have been carried out during the year to the following groups of ruins vested in the Board, viz.:—Ruins on the Rock of Cashel, co. Tipperary; Devenish Church and Tower, co. Fermanagh; Ardmore Cathedral, co. Waterford; ruins at Glendalough, co. Wicklow; ruins at Monasterboice, co. Louth; Gallarus Oratory, co. Kerry; Howth Church and Abbey, co. Dublin; Loughinisland Churches, co. Down; Maghera Church and Tower, co. Down; St. John's Church, Killough, co. Down; Hore Abbey, co. Tipperary; Skreen Church, co. Meath; Dingle Church, co. Kerry; Newtown Trim Abbey, co. Meath; Rattoo Church, Tower, etc., co. Kerry; Quin Abbey, co. Clare; Fenagh Abbey, co. Leitrim; Ratass Church, co. Kerry; Holycross Abbey, co. Tipperary; ruins at Inchcleraun, co. Longford; Bovevagh Church, co. Londonderry; Cranfield Church and Cross, co. Antrim; St. Finian's Church, co. Kerry; Clonca Church, co. Donegal; North Aran ruins, co. Galway; Clones Tower and Cross, co. Monaghan; Aghalurcher Church, co. Fermanagh; Illauntannig, co. Kerry; St. Flannan's Church, co. Down; Inismacsaint Church, co. Fermanagh; Creevelea Abbey, co. Leitrim; ancient remains on Dingle Promontory, co. Kerry; Dunbeg Fort, co. Kerry; Dunbrody Abbey, co. Wexford; ancient remains at Glenfahan, co. Kerry; Grey Abbey, co. Down; Grianan of Aileach, co. Donegal; Kilcrea Abbey, co. Cork; Lusk Round Tower, co. Dublin; Mellifont Abbey, co. Louth; Murrisk Abbey, co. Mayo; New Grange and Dowth Moat, co. Meath; St. Dominick's Abbey, co. Tipperary; Sligo Abbey, co. Sligo; Staigue Fort, co. Kerry; and Termonfechin Castle, co. Louth.

The report deals especially this year with some of the buildings in the Board's charge in the county of Cork. That county, the largest in Ireland, has remains of a great number of antiquities both of the Christian and pre-Christian periods. There were originally seven round towers, of which Cloyne and Kinneigh are still standing. Of religious foundations there were nine Augustinian Houses, two of the Benedictine Order, two Carmelites, six or probably seven Cistercian Abbeys, three Dominican Houses, and eight Franciscan. There were six preceptories, and seven early churches known as "Abbeys." Of the minor churches of a parochial character there was probably one in each of the 349 parishes or divisions of parishes in the county. The remains of fourteen ancient crosses are known. About fifty Ogham inscribed stones have been recorded, and seventy-four Cromlechs. The list of castles numbers 314. The earthworks and forts have not been fully enumerated, but there appear to be upwards of 6,000. The monuments in the Board's charge in the county are as follows:—

(*a*) The ruins of Church of St. Finbar, on an island, in the parish of Inchigeelah or Eveleary.

(*b*) Ruins of St. Kieran's Church, and stone with inscribed cross, etc., in the parish of Clear Island.

(*c*) Skerkin Island Abbey, in the parish of Rath, on Sherkin Island, near Baltimore.

(*d*) Ruins of churches, Cashel, St. Molaga's Bed, etc., in the parish of Templemolaga.

(*e*) The ruins of church and abbey in the town and parish of Timoleague.

(*f*) Ruins of church, and stone with carving of Crucifixion, in the parish of Titeskin, Barony of Imokelly.

(*g*) Kilcrea Abbey, parish of Desertmore, in Muskerry East.

(*h*) The "Old Abbey" of Buttevant, in the town and parish of Buttevant.

Of these structures, five, those lettered *a*, *b*, *d*, *e*, and *f*, were vested in the Board under the Irish Church Act, and the remaining three are monuments of which the Board have consented to become guardians under sect. 1 of the Ancient Monuments Protection Act of 1892. In two cases, *a* and *f*, out of these the vesting in the Board has not become operative. The original structure of St. Finbar's Church had disappeared before the date of vesting, and the site was in private hands, and was then, and still is, used for religious services. The ruins of the church in the parish of Titeskin consist only of two walls, formerly the side walls of a church of comparatively recent date. The carved stone is also recent (dated 1731) and the space between the walls is used for purposes of burial over which the Board can exercise no control.

The report goes on to describe in detail, with illustrations, the remaining structures—*b*, *c*, *d*, *e*, *g*, and *h*.

METROPOLITAN ASYLUMS BOARD.

AT the fortnight sitting of the Metropolitan Asylums Board on Saturday last week, it was agreed to take the necessary steps for converting the upholsterers' shop at Leavesden Asylum for the accommodation of male tubercular patients. —The following tenders for various works were also accepted:—Mr. L. Karah, Belvedere, 216*l.*, for additional lavatory accommodation at the Northern Hospital; Messrs. J. Holt & Sons, Plumstead, 131*l.* 10s., for cleaning and painting works at North Wharf; Messrs. H. King & Son, Peckham, 184*l.*, for providing motor accommodation at the Eastern Ambulance-station; Messrs. W. H. Wheeler & Co., Blackfriars-road, 268*l.*, for repairs to roads at North-Eastern Hospital.

Digitized by Google

THE TRIBUNAL OF APPEAL:

BUILDING LINE OF EUSTON-ROAD.

ON Friday last week the Tribunal of Appeal under the London Building Acts sat at the Surveyors' Institution to give their decision in the appeals by the Metropolitan Railway Company and others against the certificate of the Superintending Architect of Metropolitan Buildings defining the general line of buildings on the northern side of Euston-road, St. Pancras, between Hampstead-road and Osnaburgh-street. The previous proceedings, which occupied several days, were reported in the *Builder* of November 20 and 27.

Mr. A. A. Hudson (Chairman), in the course of a lengthy judgment, referred to the importance of the issues involved, and, having described the various interests of the different appellants, said the duty of the Tribunal was to consider whether the general line defined by the Superintending Architect was correct at the date when the certificate was given. By clause 183 of the London Building Act of 1894 they had power to confirm, reverse, or vary such certificate, and to make such order as they might think fit. They had decided to confirm the certificate in part, and to reverse it in part. They confirmed the certificate as regarded the line defined by the Architect between the limits marked C C and D D on the plan annexed to their judgment, and they reversed it as regarded the line defined by him between the limits A A and C C and between the limits D D and E E. As between the limits A A and C C on such plan, they found there was no general line of buildings. The plan annexed to their judgment was a copy of the plan annexed to the Superintending Architect's certificate, with the addition of certain coloured lines and lettering.

[NOTE.—The part of Euston-road for which the building line was laid down is that portion between Hampstead road and Osnaburgh-street, a distance of approximately 380 yds. The portion referred to as the limits between C C and D D is the larger portion of the distance, and includes the premises numbered from 292 to 404. The portion A A to C C is the property running from 408, Euston-road, to Osnaburgh-street, and the limits between D D and E E is the property at the Hampstead-road end, on which the Adam and Eve public-house stands. In other words, the Tribunal confirmed the Architect's certificate in respect of the central portion of the road, and held that there was no general line of buildings with regard to either end.]

The Chairman, continuing, said they had visited the premises and found there was now, and had been for many years, a more or less continuous line of buildings situated, most of them, 48 ft. to 50 ft. from the pavement, and some to a slightly greater distance between the limits of C C and D D. There was also at the present time a row of buildings of considerable age abutting on the inner edge of the C C pavement, between the limits of A A and C C, for the whole length of the frontage. These were regular to the frontage, but irregular in height. Many of the buildings at the back were separated from the front buildings by yards, and there were vacant spaces intervening. In other cases the front buildings had the appearance of having been built out from the back buildings, although they were so completely joined that they showed no dividing line. Had their duty consisted in merely defining the general line of building between by merely taking into consideration the whole of the buildings which now existed, they could have come to no other decision than that the general line of buildings was the inner edge of the pavement. Having regard, however, to the case of Scott *v.* Carrick, and the London County Council *v.* the Metropolitan Railway Company, they had to treat as non-existent buildings which were unlawfully there, but which were erected by the consent of the proper authority, and, secondly, those which were not lawfully there. These second class consisted of (*a*) buildings for which consent was necessary, but for which no consent was obtained: and (*b*) buildings erected in defiance of the law, and to the erection of which no authority had appeared to consent. The respondents argued that with the exception of the Adam and Eve public-house practically all the buildings brought up to the inner edge of the pavement fell into one or other of these classes, and must be disregarded by the Tribunal, and it therefore became necessary to consider the history of the street and the buildings in it. By the Act of 1756 it was laid down that no building could be erected within 52 ft. of the street on any new foundation, and by the operation of the Acts of 1808 and 1826 any building erected within 50 ft. of the street was a common nuisance if on new foundations. By the Metropolis Management Act of 1855, followed by the Act of 1862, it was enacted that no new building should be erected without the consent in writing of the Metropolitan Board of Works beyond the general line of buildings in any street, place, or row of houses in which the same were specified. The subsequent London Building Act did not materially modify the Act, and the case of Scott *v.* Carrick decided in fact that buildings which were common nuisances under the earlier Acts remained common nuisances in spite of the repeal of such Acts. It followed, therefore, that buildings, except those erected on old foundations, which came up to the edge of the pavement were common nuisances. It followed also that buildings erected after the Act of 1855 in front of any then existing general line of buildings, and within the prescribed distance, must be there either by consent or unlawfully. The chairman proceeded to comment on the evidence given as to the history of the various buildings. In some cases it had been shown that applications had been made and granted for building up to the edge of the pavement since 1856. A map, dated 1793, showed that buildings existed from No. 292 to Hampstead-road, abutting on the pavement. The same map, and also another one dated 1819, showed the Adam and Eve public-house at the corner of Hampstead-road, and it had never been contended that this building was not there even in 1756. The earlier map showed buildings abutting on the pavement of the street on the sites of 288, 290, and 294, and a building on the site of No. 292, standing back about 23 ft. Having regard to the maps the Tribunal considered there was no evidence on which they ought to disregard the Adam and Eve public-house, and the buildings now abutting on the pavement, viz., Nos. 288, 290, and 294, and those buildings were, in their opinion, sufficient to form a line of buildings between the limits D D and E E at the inner edge of the pavement. They also found that certain buildings marked on the plan were in the Hampstead-road and not the Euston-road. Dealing next with the documentary evidence which was put in regarding the buildings in the limits between C C and D D, the Chairman said the case really depended on whether they considered as non-existent the bulk of the buildings abutting on the pavement, as to which there was no direct evidence of consent. They found from the maps put in that no material number of the buildings abutting on the pavement were in existence in 1793, and if these buildings were erected on new foundations between that date and the Act of 1855 they were a common nuisance, as was settled in the case of Scott *v.* Carrick. They found there was a general line of buildings in 1855, and afterwards between the limits A A and D D, and that all the buildings abutting on the pavement were in front of such general line. This general line of building between the limits A A and C C ceased to exist when the buildings indicated by a green dotted line on the plan annexed to the judgment were pulled down. It followed that such of the buildings under consideration as were erected after the Act of 1855 must be presumed to have been erected by consent unless again they were erected on old foundations. The buildings on old foundations were so few and occupied such a small frontage that they did not affect the general line of building, and could in that respect be disregarded, and substantially, therefore, all the buildings abutting on the pavement must be disregarded by them. There remained the buildings forming what Mr. Vulliamy called the line of main frontage, and they found from the documents and from the view of the buildings as they now stood that the general line of buildings as existing at the date of the Superintending Architect's certificate on September 30, 1909, between the limits C C and D D was as shown on the plan, and they confirmed the certificate of the Superintending Architect in this respect. Dealing lastly with the part between the limits of A A and C C, they had given their reasons for disregarding the buildings abutting on the pavement, and as there were now no buildings at the back from which the general line of buildings in Euston-road could be continued, they found there was no general line of buildings in Euston-road between those limits. They also found that the buildings marked specially in the plan were not situated in Euston-road, but in Osnaburgh-street.

Mr. Bethune, on behalf of the Metropolitan Railway, said that as the Tribunal had reversed the decision of the Superintending Architect with respect to the limits between A A and C C, he had succeeded, and therefore asked for costs. He did not admit that the Tribunal had jurisdiction to say there was no general line of buildings, but for the present circumstances he had succeeded.

Mr. H. Avory, K.C., on behalf of the London County Council, said he had never met with a case before where the Tribunal had said there was no building line, and Mr. Bethune seemed to be in the same difficulty of not knowing quite what the effect would be. He suggested that the appellants had appealed against the whole line of buildings, and therefore their appeal has failed. Had the Metropolitan Railway Company only contended that there was no building line between A A and C C, then they would have succeeded.

Mr. Bethune argued that it was impossible for the company to appeal against a part of the line laid down.

After further legal arguments, the Tribunal decided to deal with each section separately, and awarded costs to the Metropolitan Railway Company.

Mr. C. A. Russell, for the other appellants, contended that the London County Council, in the performance of what they considered to be their duty, had raised this serious question of the building line, and it was a question which could not be decided without careful investigation. He therefore suggested it was reasonable that the London County Council should bear the expense.

Mr. Dennis also addressed the Tribunal as the representative of the owner of No. 318, Euston-road, and pointed out that the map of 1793 showed there was a building on that site, and it would be hard if the owner now had to pay costs.

Mr. Avory replied that it seemed to be the contention that the County Council was to pay the costs whether they won or lost.

The Tribunal decided to allow the County Council costs against the appellants other than the Metropolitan Railway Company.

Mr. Dennis asked for costs on behalf of people interested who did not appear as appellants. These included the owners of 3 and 5, Hampstead-road, which the Tribunal had decided was not in the Euston-road.

The Chairman announced that the Tribunal would make no order as to costs in respect of parties interested.

Considerable discussion took place on the question of the allocation of costs, and eventually it was decided that each of the parties should lodge their costs, and that the Tribunal should meet after the vacation and apportion the amounts.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnes.—The following plans have been passed:—Mr. W. J. Parker, additions at the Jolly Gardeners, Lower Richmond-road; Mr. C. Barwell, nine houses, Sheen-lane and Christ Church-road; Messrs. J. Harrison & Co., additions to club premises, Alder-road; Mr. G. Hunt, seven shops, Upper Richmond-road; Mr. E. Seaber, additions to laundry premises, Sheen-lane; Mr. W. Brenton, eleven houses, Clavering-avenue.

Battersea.—Sumburgh-road is to be made up and paved, the estimate being 620*l.* The Borough Council has agreed to pay the London County Council one-third of 7,800*l.*, the cost of widening Falcon-road as proposed. Altenburg-gardens is to be repaved with macadam, at an approximate cost of 304*l.* Building plans have been passed as follows:—Messrs. J. Thompson & Co., All Saints' Mission Hall, Arthur-street; Mr. J. Smith, four houses, Spencer-road, and four houses in North-side, Wandsworth Common.

Bermondsey.—The unpaved portion of the land occupying the site of the Old Mill Pond, Southwark Park-road, is to be paved with the Council's flags, at an estimated cost of 430*l.* Application is to be made to the London County Council for a loan of 4,620*l.* for the electricity undertaking, to be divided as follows:—2,120*l.* for feeders, 2,000*l.* for mains and services, and 500*l.* for meters.

Chelsea.—The Council has passed, plans submitted by Messrs. Higgs & Hill, Ltd., for an addition to the Nurses' Home, Cancer Hospital, Fulham-road.

Croydon.—The Town Council has passed the following plans:—Mr. C. Crampton, four houses, Melfort-road; Messrs. Chown & Sheffield, six houses, Pollards-hill South; Messrs. E. Evans & Sons, four houses, South Norwood-hill. The Rural District Council has passed plans as follows:—Trustees, Kenley Wesleyan Church, Classrooms, Sylverdale-road, Coulson; Mr. A. A. Secrett, four houses, Montagu-gardens, and Sandy-lane, Beddington; Mr. E. Cooksey, six houses, Cowper-gardens, Beddington; Mr. L. Cook, ten houses, Olden-lane, Purley, Coulson; Mr. Edwards, twelve shops, London-road, Wallington; Messrs. T. W. Palmer & Co., iron building, Merton Abbey Ironworks, Mitcham; Mr. W. Dallman, four houses, Montagu-gardens, Wallington; Mr. E. Sarney, seven houses, Devonshire-road and Cavendish-road, Mitcham; Mr. F. Johnson, nine houses, Brighton-road, Coulson.

Deptford.—The London County Council is to erect one or more suitable shelters for the public on Hilly Fields. Plans have been passed for Mr. C. G. Miller for the erection of

Digitized by Google

a building upon the site at present occupied by the London and South-Western Bank at New Cross Gate, and a triangular site adjoining.

East Ham.—Road-making and drainage works are to be carried out at the hospital, at an estimated cost of 1,671*l.* The Engineer is to prepare plans for the paving of Elizabeth-street. Plans and estimates have been approved for the making-up of Caulfield-road, at a cost of 726*l.*, and for the improvement and widening of a portion of Station-road, at a cost of 1,350*l.* Plans have been passed as follows:—The Trustees of the United Methodist Free Church, Tennyson-avenue, extensions to hall; Mr. G. Harber, twelve houses, Frinton-street; Mr. H. S. Ungless, four houses, Hubert-road; Mr. A. H. Middleton, twelve houses, Frinton-road; Mr. W. Lowe, six houses, Barking-road; Mr. J. W. Jerram, forty-one houses, Pulleyns-avenue and Sandford-road; Mr. R. L. Curtis, school between Storey-street and Robert-street, Woolwich; Mr. W. G. Watson, six houses, Lichfield-road; Mr. J. Clark, seven houses, Bedford-road.

Finsbury.—The Mayor reported at the meeting of the Council on December 16 that as one of a Committee of the Metropolitan Water Board, he had that day inspected a proposed site in Rosebery-avenue for the erection of offices for the Board. All the members of the Committee seemed favourably impressed with the site. If it was chosen, the estimated cost would be 80,000*l.* instead of 200,000*l.* if the Kingsway site had been selected. A scheme was now under consideration for the supply of water to Greater London, and if this was carried out he believed that in five or six years the whole of the 7½ acres occupied by the Water Board Works in Clerkenwell would be developed and covered with valuable property. The council gave their formal approval to the construction of tramway lines along Farringdon-road, from Clerkenwell-road to the City boundary in Charterhouse-street, subject to the whole of the tramway area being paved with wood instead of granite, as proposed.

Hackney.—The following plans have been lodged:—Messrs. Edmondsons, Ltd., nine shops, with residential flats over same, Upper Clapton-road, between Stamford Hill and Lewestone-place; Mr. S. H. Barclay, eight houses, Craven-walk, between Lingwood-road and Ashstead-road; Mr. F. Barrett, addition to factory, Shrubland-road, rear of 124, Lansdowne-road.

Hampstead.—Belsize-road is to be paved with lithofalt blocks by direct labour, at an estimated cost of 1,911*l.*; 1,650*l.* is to be laid out in wood paving in West End-lane.

Hornsey.—Plans have been passed as follows:—Mr. George Lethbridge, Throgmorten-avenue, E.C., three blocks of residential flats, Tottenham-lane; Messrs. George Smith & Son, Muswell-hill, hall and classrooms at St. Martin's School, Page's-lane, Muswell-hill; Messrs. John Harrison & Co., Camberwell, fifty-one loose boxes, Alexandra Park Race-course, Muswell-hill.

Ilford.—The Council has passed plans as follows:—Messrs. W. Fletcher, Ltd., workshop, Roden-street; Mr. F. George, alterations to Ilford Paper Mills; Mr. W. Hancock (for Biograph Theatres, Ltd.), cinematograph theatre; Mr. E. T. Dunn (for Messrs. A. Stearn & Son), business premises, Cranbrook-road; Mr. H. E. Richards, new front to skating-rink, High-road.

Marylebone.—The macadam carriageway in Upper Marylebone-street is to be recoated, at an estimated cost of 138*l.*

Poplar.—The Borough Surveyor is to make up Wrexham-road.

Richmond-on-Thames.—The Council has passed plans for Mr. J. Mason for flats on the Ancaster House Estate.

Wandsworth.—Paving works are to be carried out by the following, the figures showing the contract price and the figure in parentheses the Borough Engineer's estimates: — Ockley-road, Streatham, Messrs. Harringdon & Co., Ltd., 651*l.* (597*l.* 6s. 8d.); Kenlor-road, Tooting, Messrs. S. Lane & Co., Ltd., 1,276*l.* (1,341*l.* 15s. 7d.); road between Blackshaw-road and the level crossing, Tooting, Messrs. S. Lane & Co., 436*l.* (443*l.* 12s.); way, leading from Blackshaw-road to Kenlor-road, Tooting, Messrs. S. Lane & Co., 98*l.* (105*l.* 3s.); way, leading from Kenlor-road to the level crossing, Tooting, Messrs. S. Lane & Co., 43*l.* (50*l.* 16s. 4d.); Akehurst-street, Putney, Messrs. E. Parry & Co., 486*l.* (470*l.* 14s. 11d.); Nepean-street, Putney, Messrs. J. Mowlem & Co., Ltd., 455*l.* (446*l.* 16s. 3d.); Umbria-street, Putney, Mr. R. Dykes, 250*l.* (254*l.* 2s. 8d.). The following plans have been passed:—Messrs. Searle & Searle, erection of machine and camera shops at the premises of Messrs. Ross, Ltd., 3, Clapham-common, North Side; Temperance Billiard Halls, Ltd., four shops, temperance hall, etc., Wandsworth-road, Clapham North, corner of Brewery-street; Mr. J. Soper, nine houses, Geraldine-road, Fairfield.

West Ham.—The Council has accepted an offer from Messrs. G. Wigley & Sons, representing the Enterprise Developments, Ltd., to rent two plots of land in the High-street, Stratford, for the purpose of erecting thereon a picture palace. The following plans have been passed:—Messrs. Leeds & Elwes, clubroom, St. Gabriel's Church, Stephenson-street, Canning Town; Messrs. G. Baines & Son, alterations, etc., at Mr. Hay's and Messrs. William & Thomas's premises, 42, Broadway, Stratford; Mr. W. Stewart, rebuilding Angel public-house, Church-street and Gift-lane.

Westminster.—370*l.* is to be spent in providing manholes, etc., to facilitate the removal of snow. A plan, lodged by Messrs. Barlow & Roberts, for a building on the east side of Wilfred-street, has been passed.

General Building News.

SCHOOL, LEVEN.

Mr. J. C. Smith, H.M. Chief Inspector of Schools for Fife, formally opened, a few days ago, the new school at Parkhill. Mr. Walker, of Messrs. Haxton & Walker, architects, presented Mr. Smith with a souvenir casket, subscribed for by the contractors and architects. The new school has accommodation for 480 pupils, and the cost is about 8,400*l.*

DUNDEE BUILDING TRADE.

The building trade in Dundee during 1909 has been in a particularly bad state. Both contractors and workers have suffered, the former in particular, because of the large amount of Corporation work which was wont to be given out having been undertaken by the Works Department itself. This fact has possibly operated to the advantage of the workers, who, it was pointed out at a recent meeting of the Council, were kept longer employed on the jobs than would have been the case had the work been contracted for. Admitting this, which means that the city has had to pay more, the authorities declare they have got a better class of work, but a resolution has been passed which will have the effect of curtailing the amount to be done by men employed directly by the Corporation. There has been an entire absence of friction in the building trades throughout the year. Wages were maintained at the old rate despite the surplus labour in existence, and this has had the effect of sustaining peaceful relations between employers and employed. The erection of public buildings has bulked largely in the year's work—in fact, but for these the position would have been serious indeed. The amount of work represented by plans approved of during the year, with the exception of those for public buildings already enumerated, has been of the most unimportant character. They consist mainly of jute warehouses, cottages, and alterations upon buildings, the number of tenement properties being considerably less than during previous years. It is to be regretted that the outlook for the coming year is anything but bright. There is no indication of any move on the part of private enterprise to indulge in building operations of any magnitude, and there is no appearance at the moment of public work to any extent being undertaken.—*Dundee Advertiser.*

HOSPITAL, BANGOR, NEAR BELFAST.

The foundation-stone was recently laid of a new hospital in Castle-street, Bangor. All the medical and surgical wards of the new hospital are placed on the ground floor connected with the central hall by corridors. Adjoining the front entrance is the matron's room, entered from front of the fireproof stairs which lead to the first-floor rooms. These afford accommodation for the nursing staff, including writing-room, baths, etc. An operating theatre, with two dressing-rooms attached, is arranged at the back of the hall, and lighted by special windows of plate-glass. At the rear of the central building is placed a large kitchen, with scullery, pantries, and washhouse. The sanitary blocks in connexion with the wards are fitted with the modern type of baths, etc. Terrazzo floors will be laid in the hall and operating-room, and the latter will be lined with tiles. Asphalt is placed under all wood floors, which are pitch-pine polished. The contractors for the works are Messrs. J. & R. Thompson, and the architects Messrs. Young & Mackenzie, Belfast.

ASYLUM EXTENSION, CHESTER.

Mr. E. A. Sandford-Fawcett, Local Government Board Inspector, held an inquiry at Chester on the 16th inst. regarding an application made by the Cheshire County Council for sanction to borrow 82,000*l.* for the extension of Upton Lunatic Asylum. Mr. Reginald Potts (Clerk to the County Council) said that the scheme would provide accommodation for 500 additional patients. It was intended to build a new annexe for 440 patients, and an epileptic ward for sixty female patients. Extensions were also required to the laundry and chapel. The estimated cost of the annexe was 65,891*l.*, and the female epileptic ward 5,328*l.* The County Architect, Mr. Harry Beswick, was present at the inquiry.

NEW BUILDINGS IN LONDON.

Additions to Middlesex Hospital, Mortimer-street, W.; Mr. E. T. Hall, architect, 53, Bedford-square, W.C. Insurance offices, Finsbury-square, E.C.; Messrs. Gilbert & Constanduros, architects, 41, Finsbury-square, E.C. Premises, Harley-street, W.; Mr. C. W. Ferrier, architect, 11, Waterloo-place, S.W. Presbyterian Church of England, Finchley-road, Golder's Green, N.W.; Rev. E. B. H. Macpherson, 17, Exeter-road, Brondesbury, N.W. Proposed Court-house, Hendon, N.W.; Mr. H. T. Wakelam, Surveyor, Middlesex County Council, Guildhall, Westminster. Parish hall, Clerkenwell, E.C.; churchwardens, Holy Redeemer Church, Exmouth-street, E.C. Conversion of Nos. 54-55, Blackfriars-road, S.E., into a cinematograph theatre, for the Cinematograph Picture Theatre Company. Rink, Harrow-road, N.W.; Mr. S. Jacoby, Secretary, 104, High Holborn, W.C. Rink, Lower Clapton; Mr. S. Hardy, architect, King's House, Kingstreet, E.C. Electric theatre, East Ham, E.; Mr. W. le Lauer, architect, 24, Queen Victoria-street, E.C. Electric theatre, Ilford, E.; Mr. T. Hooke, architect, King's House, Kingstreet, E.C.

WANDSWORTH UNION.

The Board of Guardians some time ago appointed Mr. E. R. Dolby (Dolby & Williamson), of Westminster, as consulting engineer for the installation of the heating and hot-water service, and boiler-house plant in their new Poor Law Infirmary. The engineering scheme was submitted to the Local Government Board, and approved by them. Tenders were obtained from seven firms of contractors, and the lowest tender, that of Messrs. Moorwood, Sons, & Co., Ltd., of Sheffield and London, was accepted. The contract has just been signed, and work has begun in the new buildings erected in St. James's-road, Wandsworth-common, from the designs of Mr. J. S. Gibson.

Appointment.

LABOUR AND COMMERCIAL DEPARTMENTS, BOARD OF TRADE.

The President of the Board of Trade, having regard to the great increase of the work on the labour and commercial side of the Board, has appointed Mr. G. R. Askwith, C.B., K.C., the Comptroller-General, and Mr. G. J. Stanley, the Deputy-Controller, of the former Commercial, Labour, and Statistical Department, as Comptroller-General and Assistant-Secretary, respectively, of the two new and separate Labour and Commercial Departments.

Sanitary and Engineering News.

THE JAPANESE EXHIBITION AND SANITATION.

A meeting was held last week at the Administration Offices of the Japan-British Exhibition, when the first gathering of the Public Health and Sanitation Committee took place, under the Presidency of Mr. H. D. Searles-Wood. The Committee itself consists of Messrs. H. Adams, T. W. Aldwinckle, H. P. Boulnois, Professor H. R. Kenwood, M.B., Colonel J. Lane Notter, Dr. Samuel Rideal, Messrs. H. Saxon Snell, W. C. Tyndale, J. E. Wilcox, and J. E. Wroth, of the London County Council, and (*ex officio*) Sir John Cockburn. The effect of the meeting is that special efforts are to be made to ensure that the Public Health and Sanitation Section shall be one of the most important at next year's undertaking, and shall bear a favourable comparison to the great demonstration to be made by our Japanese allies, who, in peace and war, have proved themselves to be distinguished sanitarians. A classification for the section was agreed to, which embraces schools, prisons, barracks, camps, building material, dairy appliances, apparatus for water supply, heating apparatus, lighting and ventilation, clothing, domestic appliances, means for the development of the physique, and so on. In order to carry out the amount of work which this represents, it was decided to appoint provincial subcommittees for Leeds, Birmingham, Newcastle, Glasgow, Edinburgh, Cardiff, Liverpool, Manchester, Bristol, Dublin, and all the great industrial and mercantile centres.

Digitized by Google

NEW BRIDGE, NORWICH.

A new arched bridge over the river and a steel-girder bridge over the railway have been constructed at Norwich. The bridges have connecting pathways communicating with Heigham-street on the one hand, and Drayton-road on the other; but the accommodation provided is for foot passengers only. The works have necessitated the construction of a viaduct, and this has been carried out in ferro-concrete. The total length of the river bridge is 110 ft., that of the bridge over the railway 32 ft., and of the two viaducts 310 ft. The high embankments are 160 ft. long. The whole of the work, including the river bridge, but excepting the reinforced concrete viaduct and the steel bridge across the M. & G.N.R. have been carried out by the Corporation direct. The railway bridge and reinforced concrete viaduct were carried out by Messrs. D. G. Somerville & Co., of 116, Victoria-street, London. The iron fencing was supplied and erected by Messrs. Barnards, Norwich.

DUNDEE WATER UNDERTAKING.

Mr. G. S. Baxter, water engineer, Dundee, has issued a report to the Town Council with a view to improving and safeguarding the supply of water, particularly in dry seasons. He submits a scheme for impounding an additional 574 million gallons in the basin of Lintrathen by heightening the embankment, waste weir, sluice shafts, roads, etc. This will cost 15,000*l.*, and with the supply from Monikie Loch would balance an average daily consumption 14½ per cent. in excess of that which obtains at present. Mr. Baxter also reports on the better distribution of the supply with a view to giving more efficient pressure on the higher levels of Dundee, and he recommends that a beginning should be made by the extension of Lawton Reservoir by increasing the storage from 390,000 to 1,500,000 gallons. This work would cost 4,900*l.* He also suggests a scheme for rearranging the city water zones, the total cost of which is estimated at 6,330*l.*, and he recommends that the first section of this be gone on with forthwith, at an expenditure of 1,980*l.* In the event of the new distributing mains scheme not being adopted Mr. Baxter proposes an alternative scheme, the cost of which will be 9,765*l.*

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Mr. Oscar Langbein, jun., architect and surveyor, has changed his address from 207, Clapham-road to 161, Clapham-road, S.W. Telephone, Brixton 1577.——The Limmer Asphalte Paving Company have removed their offices from 2, Moorgate-street to Caxton House, Westminster, S.W. Telephone number —Gerrard 9630 (two lines); telegraphic address as before.

STREET WIDENING, LONDON.

In terms of the award of Mr. E. B. I'Anson, arbitrator by appointment of the Lord Mayor, a sum of 6,100*l.* will be paid out of the consolidated rate of the City to the Governors of Bethlehem and Bridewell Hospitals for the freehold interest of ground which will be taken for the widening of Tudor-street, Whitefriars. A measure will be introduced in the course of next session of Parliament for the proposed widening of Church-street, Kensington, to the south of Clarence-mews, at an estimated cost of 66,300*l.*, towards the net cost of which the Kensington Royal Borough Council will contribute one-half, not exceeding 25,000*l.*

FIRST GARDEN CITY, LETCHWORTH.

Mr. A. Williams presided at the annual general meeting held on December 16 at the Inns of Court Hotel. The report, which was adopted, sets forth that Letchworth had made great progress during the year, seventy houses, representing an increased population of 350 persons, having been added. Additional capital is required to the extent of 10,000*l.*, which the shareholders would be enabled to take in 4 per cent. debentures.

INCORPORATED CHURCH BUILDING SOCIETY.

This Society held its usual monthly meeting on Thursday, the 16th inst., at 7, Dean's-yard, the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Cottenham Park, St. Matthew, Wimbledon, Surrey, 140*l.*; and Summertown, St. Stephen, near Oxford, 220*l.*; and towards enlarging or otherwise inproving the accommodation in the churches at Chesham Bois, St. Leonard, Bucks, 35*l.*; Cosby, St. Michael and All Angels, near Leicester, 20*l.*; Great Saughall, All Saints, near Chester, 45*l.*; Robeston West, near Haverfordwest, 40*l.*; and Slade Green, St. Augustine, near Crayford, Kent, 60*l.* Grants were also also made from the Special Mission Buildings Fund towards building mission churches at North Sheen, St. Peter, Mortlake, Surrey, 40*l.*; and Yelverton, St. Paul, Devon, 50*l.* The following grants were also paid for works completed:—Miskin, St. John the Baptist, near Mountain Ash, Glam, 100*l.*; West Dereham, St. Andrew, Norfolk, 5*l.*, balance of 20*l.*; West Bromwich, The Good Shepherd, 135*l.*; Ile Abbotts, St. Mary the Virgin, near Taunton, 50*l.*; Pwllheli, St. Peter, North Wales, 50*l.*; Rowley Regis, St. Giles, near Birmingham, 45*l.*, on account of a grant of 135*l.*; New Brighton, Emmanuel, Cheshire, 80*l.*, making in all 200*l.*; Palmer's Green, St. John, Middlesex, 120*l.*; Norton, St. Nicholas, Herts, 35*l.*; Whinney Hill, near Rotherham, Yorks, 35*l.*, on account of a grant of 50*l.*; Bulford, St. Leonard, near Amesbury, Wilts, 25*l.*; and Danebridge, St. Paul, Cheshire, 20*l.* In addition to this the sum of 35*l.* was paid towards the repairs of four churches from trust funds held by the Society.

THE CARPENTERS' COMPANY AND TECHNICAL TRAINING.

On the 14th inst. the Duke of Argyll presented the prizes to the successful students of the Trades Training School conducted by the Carpenters' Company and allied guilds. Mr. H. Phillips Fletcher, Director of the Schools, presented the sixteenth annual Report, showing an increase of students. His Grace, having presented the prizes, congratulated the Company and the guilds on the extent and success of the work of the school. He was glad to learn that there was an increase of students, in spite of the depression in the building trade. Craftsmen need not look in England only for work. There were other countries, equally British, where building was going on apace. He could think of no trade in which more good taste and more strenuous muscle were required than in carpentry. Instances had come to his notice of the immense durability of oak stairs and carving, and he recalled that a Scotch laburnum he had had cut down furnished the wood for two wardrobes and four tables. These and several other kinds of wood were well worth planting and cultivating in this country. He was glad to note that there were no amateurs at the school, but that students were turned out perfected artisans. The guilds of London were stretching their educational operations over the country. The work of the school was practically to make the useful house, but the beautiful house was also a desirable object. In this connexion he considered that ironwork was insufficiently appreciated in this country. There was an immense scope for this beautiful work in railings, gates, etc., and he commended it to the Company. He had seen specimens and photographs of the work executed at the school, and he intended to take an opportunity of seeing the students at work.

ARCHITECTS AND ST. PAUL'S BRIDGE.

A deputation representative of the Royal Institute of British Architects waited recently upon the Bridge House Estates Committee, and urged that, following the procedure customary in Paris, Berlin, Vienna, and other great centres, leading architects, as well as engineers, should be consulted before the scheme for the construction of St. Paul's Bridge was definitely decided upon. As Chairman of the Committee, Mr. Deputy Algar promised that the suggestions of the deputation should receive full consideration.—*City Press.*

THE FOUNDERS' COMPANY.

This City Guild announces an exhibition of foundry work in aluminium, bronze, gold, iron, and silver, when British subjects residing in England engaged in foundry business or allied trades can compete. The competitions are for castings and models as well as of designs, and it is open to founders, designers, craftsmen, apprentices, and improvers. The prizes vary in value from 20*l.* to 2*l.* 10s., together with the Company's certificate and silver and bronze medals. The Freedom of the Company may be conferred in cases of special merit.

Capital and Labour.

CONDITION OF EMPLOYMENT IN THE BUILDING TRADES.

According to the *Board of Trade Labour Gazette*, employment in November showed some improvement, and was better than a year ago. The percentage of trade union carpenters and joiners unemployed at the end of November was 10·6, as compared with 11·2 a month ago and 13·5 a year ago; and for plumbers, at the same dates, the percentages were 10·6, 12·8, and 12·0 respectively. These percentages were usually exceeded in London, the northern counties, Scotland, and Ireland. Returns received from painters' unions show a decline compared with a month ago, while returns from masons' unions show some improvement, and those from unions of bricklayers, plasterers, and labourers show little general change. For London the trade union returns show that 12·1 per cent. of carpenters and joiners were unemployed at the end of November, as compared with 14·2 a month ago and 13·6 a year ago. The corresponding percentages for plumbers were 14·5, 17·0, and 16·6 respectively. Returns received from 689 firms employing 41,131 workpeople at the end of November show that compared with both a month ago and a year ago there was a decrease in the number of workpeople employed by them in Scotland, the northern counties, Yorkshire, Lancashire, and Cheshire. In the rest of the kingdom there was an increase in the number employed. The total effect of the changes in the numbers employed by these firms in all districts was equal to a decrease of 1·7 per cent. compared with a month ago, and a decrease of 0·8 per cent. compared with a year ago.

Law Reports.

ARCHITECT'S ACTION FOR FEES.

THE case of T. Dawson *v.* Hibburn Colliery and Hibburn, etc., Society, Ltd., came before the Court of Appeal, consisting of the Master of the Rolls and Lords Justices Moulton and Farwell, last week, upon the defendants' application for judgment or new trial in the action which was tried before Mr. Justice Grantham and a special jury at Newcastle-on-Tyne.

It appeared from the statement of Mr. Simon, K.C., in support of the appeal, that the plaintiff, an architect, brought the action against the defendant society—an industrial society—to recover 160*l.*, his fees for preparing certain plans required for a proposed building to be erected upon a plot of ground which the Society had leased. He said that there was no dispute that the plaintiff was entitled to be paid for certain of the plans he had prepared, and he had been paid for those plans; but the defendants declined to pay for the two plans in question upon the ground that the plaintiff had not been instructed to prepare them. At the trial the jury returned a verdict in favour of the plaintiff. He (counsel) contended that there was no evidence to support the verdict.

Without calling upon counsel for the respondent (plaintiff) their lordships dismissed the appeal with costs, holding that it was impossible to say there was no evidence to support the verdict.

DISPUTE AS TO OWNERSHIP OF WALL.

THE case of Rice *v.* the Swansea United Breweries, Ltd., came before a Divisional Court of King's Bench, consisting of Justices Darling and Phillimore, on the 18th inst., upon the plaintiff's appeal from a judgment of Judge Bryn Roberts at the Swansea County Court.

Mr. Sankey, K.C., and Mr. Beasley appeared for the appellant; and Mr. Cave, K.C., and Mr. Meager for the respondents.

Mr. Sankey said that the case raised the short point as to whether a wall which in fact divided the plaintiff's premises from the defendants' was a party wall, or whether it belonged entirely to the plaintiff? Defendants began interfering with the wall, and the plaintiff brought an action for an injunction and for damages against them, contending that the wall belonged to him. The County Court judge decided that the wall was a party wall, and refused to grant the injunction. Whether the wall was a party wall or whether it belonged entirely to the plaintiff depended upon the terms of the conveyance, dated October 6, 1882, by which the plaintiff acquired the property. If the wall belonged entirely to the plaintiff he submitted he was right. If it was a party wall, then he was wrong, and could not succeed upon the appeal. Plaintiff's premises consisted of a bakehouse at Skelly, near Swansea, and the defendants' premises were the Bush Inn. Defendants, in altering their premises, interfered with the wall, and plaintiff wrote to the defendants complaining of the alleged trespass, and saying the wall belonged to him. Defendants replied that the wall was theirs, and that they should do as they liked with it. Plaintiff then started the proceedings in the County Court on March 1. The County Court judge decided that the wall was a party wall. He (counsel) contended that it was clear that by the plaintiff's conveyance the wall belonged to the plaintiff, and that the only thing that the defendants had was the right of support from it.

Mr. Meager, on behalf of the defendants, submitted that the wall was a party wall, and their lordships, being of this opinion, dismissed the appeal with costs.

Digitized by Google

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, —.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

DECEMBER 31.—**Cwmgorse.**—CHAPEL.—Plans, specification, and quantities for the erection of a new chapel at Cwmgorse, to seat about 600, not to exceed 3,000*l.* in value. Also for superintending the erection of the same. For further particulars apply to Mr. Owen Williams, Baily Glas Cottage, Cwmgorse, Gwaun-cae-Gurwen.

JANUARY 1.—**Hetton.**—CLUB.—The Committee of the Hetton Working Men's Club invite plans for the erection of a new club. Plans, with estimates, to be sent to Mr. Jas. Widdowfield, Secretary, Hetton Working Men's Club, Pemberton-street, Hetton-le-Hole.

JANUARY 1.—**Larne.**—TECHNICAL SCHOOL.—The Larne Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Victoria-street. A premium of 21*l.* will be paid for the approved design. Further particulars may be obtained from Mr. Thomas Clearkin, Secretary.

JANUARY 1-MARCH 1. — **Leeds.** — PREMISES. — The Directors of the Leeds Industrial Co-operative Society, Ltd., invite architects to submit competitive drawings and estimates for new business premises and offices, to be erected on the site of the old "Mercury" office, Albion-street, Leeds. Premiums of 100*l.*, 50*l.*, and 25*l.* respectively are offered, and will be awarded to the authors of the designs and plans placed first, second, and third by the assessor appointed by the directors. Conditions of competition, etc., will be forwarded on application to the Secretary, on receipt of stamped addressed foolscap envelope, accompanied with a deposit of 2*l.* 2s.

JANUARY 27.—**Southampton.**—PAVILION ON THE COMMON.—The Corporation invite designs from inhabitants of the Borough for the erection of a pavilion on the Common at a cost of not exceeding 500*l.* Particulars and conditions may be obtained upon application at the Town Clerk's Office. A premium of 10*l.* will be awarded to the architect whose design shall be chosen by the Public Lands and Market Committee of the Council, and a second premium of 5*l.* will be awarded.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—**The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.**

FEBRUARY 1.—**Oldham.**—PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same.

Three prizes—100 guineas, 50 guineas, and 25 guineas respectively—are offered. See advertisement in this issue for further particulars.

* MAY 31.—**Karachi.**—MUNICIPAL OFFICE. — The Municipality of Karachi invite elevation designs and detailed plans and estimates for a new Municipal Office. See advertisement in this issue for further particulars.

NO DATE.—**Trondhjem, Norway.**—PROPOSED HARBOUR EXTENSION.—Competitive designs for proposed harbour extension are invited by the Harbour Commissioners. Programmes may be obtained free, and description and plans at a charge of 3*l.* 3s. per set, on application to the Consulting Engineer to the City, Mr. L. S. Zachariasen, M.Inst.C.E., 12, Dayles-ford-avenue, Putney, London, S.W.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 28.—**Steeton.**—ALTERATIONS.—The West Riding Education Committee invite whole or separate tenders for alterations (builder, joiner, plasterer, plumber, painter), Steeton provided school. Plans may be seen, and specifications, etc., obtained, on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

DECEMBER 29.—**Elgin.**—HOUSES.—Mason, carpenter, slater, plumber, plaster, and painter works of houses to be erected in Masondieu-place. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

DECEMBER 29.—**Kirbymoorside.**—SCHOOL WORKS.—North Riding of Yorkshire C.C. Education Committee invite tenders for the work in connexion with the execution of proposed extensive alterations and additions at Kirbymoorside Council School. For quantities apply to Mr. J. C. Wrigley, Secretary, County Hall, Northallerton.

DECEMBER 31.—**Blackwood.**—COTTAGES.—Erection of fifteen or more cottages at Blackwood (Mon.), for the Pretoria Building Club. Plans, etc., may be seen at the office of Mr. William Dowdeswell, architect, Treharris.

DECEMBER 31.—**Otley.**—PRINTING WORKS.—Works required in the erection of printing works at Otley. Applications to Messrs. Empsall & Clarkson, architects and surveyors, 7, Exchange, Bradford.

DECEMBER 31.—**Pontycymmer.**—SKATING RINK.—Erection of a roller skating rink at Pontycymmer. Plans may be seen at the office of Mr. Pilgrim Morris, solicitor, Pontycymmer, and at office of Messrs. Cook & Edwards, M.M.I.A., architects, Masonic-buildings, Bridgend, where also bills of quantities may be obtained on payment of a deposit of 1*l.* 1s.

JANUARY 1.—**Banbury.**—REPAIRS.—The Education Committee invite tenders for new lead roof gutters, building repairs, and reinstatements at Dashwood-road Council School. The specifications may be seen, and all particulars obtained, upon application to Mr. J. Timms, architect and surveyor, 48, Parson's-street, Banbury.

JANUARY 1. — **Hengoed.** — EXTENSION OF COUNCIL OFFICES.—Gellygaer U.D.C. invite tenders for the extension of their Council Chamber and the erection of a new wing, consisting of three offices and a Committee-room, at the Council Offices, Hengoed. Plans, etc., can be seen, and bills of quantities, etc., can be obtained, on application to the Council's Surveyor, Mr. James P. Jones, F.I.S.E., Council Offices, Hengoed, *viâ* Cardiff, on payment of a deposit of 2*l.* 2s.

JANUARY 1.—**Larne.**—CHURCH.—Erection of a new church building on the Glenarm-road, Larne, Co. Antrim, for the committee of Larne Congregational Church. Copy of plans, etc., may be had from Mr. John Seeds, architect, 7, Donegall-square West, Belfast.

JANUARY 1-17.—**West Ham.**—SCHOOL WORKS.—The Education Committee invite tenders for the extension of the existing West Silvertown schools and the erection of the boys' new department. Written application to be made to Mr. William Jacques, A.R.I.B.A., Architect to the Education Committee, 2, Fen-court, Fenchurch-street, E.C., for copy of quantities, etc. Each application must be accompanied by a deposit of a 5*l.* Bank of England note (cheques will not be accepted). Plans and particulars may be seen at the Architect's office.

JANUARY 4. — **Tylers Green, Aylesbury.** — SCHOOL WORKS. — Bucks County Education Committee invite tenders for the enlargement of Tylers Green Council School. Builders selected by the Works Sub-Committee will be required to deposit 1*l.* 1s. for bill of quantities. Mr. C. G. Watkins, Secretary, Education Office, Aylesbury.

JANUARY 5.—**Great Chart.**—CLOAK-ROOM.—Kent Education Committee invite tenders for the erection of a new cloak-room at the Council school. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. J. M. Poncia, 17, Bank-street, Ashford, Kent.

JANUARY 6.—**Belfast.**—PREMISES.—New premises in York-street and York-lane, Belfast, for Messrs. Belfast Co-operative Society, Ltd. Drawings, etc., may be seen, and copy of quantities can be obtained, at the office of Messrs. M'Carthy & Brookes, quantity surveyors, Scottish Provident-buildings, on payment of 3*l.* 3s.

JANUARY 6. — **Jarrow.** — PUBLIC BATHS.—For the erection of Public Baths in Walter-street, Jarrow-on-Tyne. Form of tender, together with a copy of the bills of quantities, on application to the architect, Mr. J. H. Morton, F.R.I.B.A., of 50, King-street, South Shields, and 57, Wesgate-road, Newcastle-on-Tyne, upon deposit of 2*l.* 2s. Plans and detail drawings can be inspected at the South Shields office of the architect.

* JANUARY 7.—**Chigwell.**—DINING-HALL, ETC.—The Governors of Chigwell School invite tenders for a new dining-hall, workshop, etc., and for alterations to existing buildings. See advertisement in this issue for further particulars.

JANUARY 7.—**West Felton.**—COTTAGE AND FARM BUILDINGS.—Salop C.C. invite tenders for the erection of a cottage and farm buildings and alterations and additions to certain existing houses and buildings for small holdings at West Felton, about two and a quarter miles from Rednal Station. Plans, etc., may be seen, and form of tender may be obtained, at the office of the agent, Mr. Wm. T. Hall, College Hill, Shrewsbury.

JANUARY 8.—**Llanwrtyd Wells.**—BOARDING-HOUSE.—For boarding-house for Mrs Jobs. Mr. W. D. Jenkins, architect, George-street, Llandilo.

JANUARY 10.—**Garforth.**—PROPOSED NEW BLOCK, GARFORTH HOSPITAL.—Tadcaster R.D.C. invite tenders for the complete construction of a new corrugated-iron covered diphtheria block at their Infectious Diseases Hospital, Garforth. Specifications, etc., may be obtained from Mr. H. M. Driver, Sanitary Inspector, Garforth, near Leeds.

JANUARY 10.—**Stamford Bridge and Burton Pidsea.**—SCHOOL, ETC.—East Riding of Yorkshire C.C. Education Committee invite tenders for (*a*) the erection of a Council school to accommodate 133 children, and teachers' house, at Stamford Bridge; (*b*) for alterations and additions to the Council school at Burton Pidsea. Plans, etc., may be seen, and forms of tender obtained, on application to the Building Surveyor, County Hall, Beverley.

JANUARY 11. — **Ryhope.** — SCHOOL.—The C.C. of Durham invite sole tenders for a secondary school at Ryhope. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. W. Rushworth, Shire Hall, Durham.

* JANUARY 12.—**Devonport.**—SOLDIERS' QUARTERS.—The Secretary of State for War invites tenders for 20*a* and 20*b* married soldiers' quarters in flats and cottages in three blocks at Old Granby Barracks, Devonport. See advertisement in this issue for further particulars.

* JANUARY 12.—**Halifax.**—ENLARGEMENT OF POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for enlargement of the Halifax Post-office. See advertisement in this issue for further particulars.

* JANUARY 12.—**Malton.**—POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for erection of a new post-office. See advertisement in this issue for further particulars.

JANUARY 13.—**Brighton.**—OFFICES.—The Borough invite tenders for the erection of an additional office for police purposes on a portion of the forecourt at the north-east corner of the Town Hall. The specification, etc., may be obtained on application at the office of the Borough Surveyor at the Town Hall, Brighton.

JANUARY 13.—**Tubercurry.**—ADDITIONS TO BANK.—Additions and alterations to the bank premises at Tubercurry, Co. Sligo. Plans, etc., may be seen at the Bank, Tubercurry, and at offices of Mr. Edward J. Toye, architect, Northern Gate, Londonderry.

JANUARY 14.—**Brighton.**—ALTERING LAVATORIES.—The B.C. invite tenders for the carrying out of certain alterations to the sanitary arrangements of the lavatories at the West-street Shelter Hall. The specification, etc., may be obtained on application at the office of the Borough Surveyor at the Town Hall, Brighton.

JANUARY 15.—**Northwich.**—SCHOOL.—The Administrative Sub-Committee for the Northwich District of Chester invite tenders for the erection of Northwich (Darwin-street) Council School, to accommodate 350 children. Plans, etc., can be seen at the Education Office, Verdin Technical School, Northwich, and quantities obtained, on deposit of 1*l.* 1s.

* JANUARY 17.—**Chelmsford.**—SCHOOL.—The Chelmsford Education Committee invite tenders for school at Trinity-road, Springfield, in the Borough of Chelmsford. See advertisement in this issue for further particulars.

JANUARY 18.—**Spennymoor.**—SCHOOL.—The C.C. of Durham invite sole tenders for the erection of higher elementary school. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. W. Rushworth, Shire Hall, Durham.

NO DATE.—**Bradford.**—WAREHOUSE.—Four-story warehouse (325 yds. area) and alterations in Lister Hills-road, Bradford, for Mr. Seba Illingworth. Applications by post only. Plans on view after despatch of quantities. Mr. Edgar H. Parkinson, architect, Queensgate-chambers, Bradford.

NO DATE.—**Cardiff.**—CHURCH, ETC.—Erection of a new Welsh Methodist Church and School in Cowbridge-road, Cardiff. Plans, etc., may be seen, and copies of the bill of quantities obtained, at the office of the architects, Messrs. Habershon, Fawckner, & Co., 14, High-street, Cardiff (and Newport).

NO DATE.—**Dewsbury.**—HOUSE.—Various works required in the erection of a house, Healds-road, Dewsbury. Names to Messrs. R. Castle & Son, architects, L.C. and M. Bank-chambers, Cleckheaton.

NO DATE. — **Leeds.** — STABLES, ETC.—Erection of stables, shed, and offices, Westfield-crescent, Leeds. Forward names (stating trade) to Mr. Fred Mitchell, architect and surveyor, 9, Upper Fountaine-street, Albion-street, Leeds, at once.

NO DATE.—**Wycombe.**—VILLAS.—A pair of villas, Desborough-avenue. Application to be made at office of Mr. E. B. Hooper, Church-square, Wycombe.

Digitized by Google

ENGINEERING, IRON, AND STEEL.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 31.—**Bootles.**—ELECTRIC LIGHTING OF THE BEECH-STREET COUNCIL SCHOOL.—The Corporation invite tenders for the installation of the electric light at the Beech-street Council School, Winton, now in course of erection. Drawings may be inspected at the office of the architect, Mr. Henry Lord, 42, Deansgate, Manchester, and a copy of the conditions, etc., may be obtained from Mr. Edwin Parkes, Town Clerk, Town Hall, Eccles, on payment of 10s.

JANUARY 3.—**Glasgow.**—STEEL AND IRON WORK CONTRACT.—The Directors of the Caledonian Railway Company invite tenders for the works to be executed in the renewal of the superstructure of fourteen under-bridges on the Cleland and Mid-Calder Branch, the Edinburgh Branch, and the Camps Branch. Drawings may be seen at the office of the Company's District Engineer, Princes-street Station, Edinburgh, where copies of the specification, etc., may be obtained on payment of 2*l.* 2s.

JANUARY 5.—**Herne Bay.**—EXTENSION AND IMPROVEMENT OF HERNE BAY PIER.—The U.D.C. invite tenders for works in connexion with their pier undertaking. Plans, etc., may be obtained at the office of Mr. Ewing Matheson, M.Inst.C.E., 13, Walbrook, London, E.C., the Engineer for the Works, upon payment to the Engineer of 3*l.* 3s. as a deposit.

JANUARY 10.—**London.**—ELECTRIC LIGHTING.—The Council of the Institution of Electrical Engineers invite tenders for the interior wiring and fittings for lighting and power at the new premises, Victoria-embankment, W.C. Copies of the specification, plans, and forms of tender on application at the offices of the Consulting Engineers, Messrs. Handcock & Dykes, 1, Victoria-street, Westminster, S.W. A charge of 2*l.* 2s. will be made for each set of documents.

JANUARY 14.—**Brittas.**—ELECTRIC LIGHTING.—Dublin Joint Hospital Board invite tenders for the above works in connexion with their new sanatorium at Crooksling, Brittas, Co. Dublin. Plans, etc., prepared by Mr. M. F. Purcell, M.Inst.C.E.I., may be inspected, and full particulars obtained, at the offices of the Board, Municipal Buildings, Corkhill.

JANUARY 22.—**Ashford.**—ENGINE, ETC.—Ashford U.D.C. invite tenders for the erection of a minimum 50-B.H.P. suction gas engine and producer plant and other works at its Bybrook Sewage Works, in accordance with plan, etc., which may be obtained from Mr. William Terrill, Surveyor, at his offices, 5, North-street, Ashford, Kent, on the deposit of 1*l.* 1s.

MISCELLANEOUS.

DECEMBER 27.—**Oswestry.**—BOWLING GREEN.—The T.C. invite tenders for excavating, levelling, and forming bowling green and tennis court and other works at Cae Glas Park. Plans, etc., prepared by the Borough Surveyor, may be seen, and form of tender obtained, on application to Mr. G. William Lacey, C.E., Guildhall, Oswestry.

DECEMBER 28.—**Burslem.**—FENCING.—The Corporation invite tenders for the supply of about 360 lin. yds. of wrought-iron unclimbable fencing; also five pairs wrought-iron entrance gates. Particulars, etc., may be obtained from Mr. F. Bettany, Borough Surveyor and Engineer, Municipal Offices.

DECEMBER 28.—**Hambledon.**—SCAVENGING.—The Hambledon R.D.C. invite tenders for the collection and removal of dust, ashes, house refuse, etc., Cranleigh. Forms of tender, etc., can be obtained on application at office of Mr. Ferdinand Smallpeice, Clerk to the Council, 138, High-street, Guildford, or of Mr. H. E. Pryke, the Clerk of the Parish Council of Cranleigh.

DECEMBER 29.—**Bromley.**—FURNITURE, ETC.—Kent Education Committee invite tenders for the supply of furniture and fittings for the science room at Bromley County School. Tender forms, etc., may be obtained on application to the Stores Superintendent, Kent Education Committee, Caxton House, Westminster, S.W.

DECEMBER 29.—**Salford.**—SWEEPING BRUSHES, ETC.—The Lighting and Cleansing Committee invite tenders for the supply of new sweeping brushes and the refilling of sweeping and machine brush stocks. Samples may be seen, and all information obtained, on application to the Superintendent of the Lighting and Cleansing Department, Wilburn-street, Salford.

DECEMBER 30-JANUARY 21.—**Newcastle-on-Tyne.**—FURNITURE, ETC.—Northumberland Education Committee invite tenders for the supply of furniture and general school requisites for use in the schools in the Administrative area during three years. Name and address to Mr. C. Williams, Secretary to the Education Committee, The Moothall, Newcastle-on-Tyne, together with a deposit of 1*l.* 1s. for the schedules of requisites.

JANUARY 1.—**Merthyr Tydfil.**—CUPBOARDS.—The Education Committee invite tenders for the supply and delivery at various schools a total number of twelve cupboards. Particulars can be obtained at the Deputy-Surveyor's office, Town Hall.

JANUARY 14.—**Stafford.**—DANGER SIGNALS.—Staffordshire C.C. Main Roads and Bridges Committee invite tenders for the supply of about 1,000 motor danger signals. Further particulars, etc., may be obtained from Mr. James Moncur, A.M.Inst.C.E., Chief Surveyor of Main Roads, County Buildings, Stafford.

NO DATE.—**Birmingham.**—PULLING DOWN.—Pulling down and removing old buildings adjoining the Theatre Royal, New-street, for the Provincial Cinematograph Theatres Company, Ltd. Particulars may be obtained at the offices of Messrs. Nicol & Nicol, architects, 117, Colmore-row.

PAINTING, etc.

JANUARY 1.—**Purston.**—CLEANING, ETC.—Cleaning, painting, and decoration of the Purston Wesleyan Church. Specifications, etc., at offices of Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford.

✱ JANUARY 5.—**Herne Bay.**—PIER PAINTING.—The Herne Bay U.D.C. invite tenders for scraping, cleaning, and painting of portion of Herne Bay Pier. See advertisement in this issue for further particulars.

✱ JANUARY 11.—**West Ham.**—PAINTING, ETC.—The West Ham B.C. invite tenders for painting, cleaning, and other work at the Fever Hospital. See advertisement in this issue for further particulars.

ROADS, SANITARY, AND WATER WORKS.

DECEMBER 28.—**Farnham.**—ROAD WORKS.—Farnham U.D.C. invite tenders for the levelling, draining, kerbing, channelling, metalling, paving, and making good of Alfred-road. Plans, etc., may be seen, and form of tender, etc., obtained, on application to the Council's Surveyor, at his office, South-street, Farnham.

DECEMBER 28.—**Sowerby Bridge.**—MAKING-UP.—Sowerby Bridge U.D.C. invite tenders for labour required in making-up Albert-road, from Clay-street to Burnley-road. Forms of tender, etc., may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

DECEMBER 29.—**Rochdale.**—SEWERING.—Rochdale Paving, etc., Committee invite tenders for the sewering work required in Stimps-lane and Weston-avenue, Rochdale. Plans, etc., may be seen, and copies of the quantities and form of tender obtained, at the office of the Borough Surveyor.

DECEMBER 30.—**Clammerclough.**—SEWERING.—Kearsley U.D.C. invite tenders for works of sewering at Clammerclough. Plans, etc., may be seen, and forms of tender obtained, on application at the office of Mr. Herbert Nuttall, Surveyor, 20, Market-street, Bury.

DECEMBER 30.—**Longton.**—SEWER.—The T.C. invite tenders for the construction of about 890 lin. yds. of 12-in. pipe sewer, with manholes, etc., in the Star and Garter-road and Fir Tree-road. Drawings, etc., may be seen, and quantities, etc., obtained, from Mr. J. W. Wardle, C.E., Borough Surveyor, Court House, Longton.

JANUARY 1.—**Northwood.**—CONSTRUCTION OF SEWER.—Ruislip-Northwood U.D.C. invite tenders for the construction of about 162 yds. of 9-in. stoneware pipe sewer. Plans, etc., may be seen, and bills of quantities obtained, by appointment with Mr. W. Louis Carr, Surveyor, Council Offices, Northwood, Middlesex.

JANUARY 1.—**Saltash.**—WATER MAIN, ETC.—The Borough of Saltash Urban Sanitary Authority invite tenders for supplying and laying a 5-in. water main, building a meter-house, etc., across the Royal Albert Bridge. Plans, etc., may be seen at the office of the Engineer, Mr. H. Bulteel, at 31, Whimple-street, Plymouth.

JANUARY 3.—**Knutsford.**—ROAD WORKS.—Knutsford U.D.C. invite tenders for the levelling, paving, metalling, channelling, and making good of St. John's-road, Knutsford. General conditions, etc., may be seen, and form of tender obtained, on application to Mr. W. J. Downes, Surveyor, Council Offices, Knutsford.

JANUARY 3.—**Southwick.**—MAKING-UP OF PRIVATE STREETS.—The U.D.C. invite tenders for sewering, levelling, paving, metalling, flagging, channelling, making good, and lighting a certain portion of Cross-road. Plans, etc., may be seen, and the specification, etc., obtained of Mr. Geo. W. Warr, Surveyor to the Council, Town Hall, Southwick. The sum of 1*l.* 1s. will be required as a deposit.

JANUARY 4.—**Bedale and Aiskew.**—WATERWORKS.—Bedale R.D.C. invite tenders for 7,219 lin. yds. of cast-iron water mains, with valves, etc.; the construction of spring collection works and ram house, and of hydraulic rams and stand pipes, a covered storage reservoir, etc. The drawings, etc., may be seen at office of Mr. Edwd. D. Swarbreck, Clerk to the Bedale R.D.C., Bedale. Copies of specification, etc., may be obtained from the engineers, Messrs. Fairbank & Son, C.E., of Lendal-chambers, York, on deposit of 3*l.* 3s.

JANUARY 4.—**Nuneaton.**—SEWERS.—Construction of about 260 yds. of 9-in. and 322 yds. of 12-in. earthenware pipe sewers in Tomkinson-road. Plans may be seen, and copies of specification, etc., obtained, on application at office of Mr. F. C. Cook, A.M.Inst.C.E., Borough Engineer and Surveyor, Municipal Offices, Nuneaton, and on deposit of the sum of 1*l.* 1s.

JANUARY 7.—**Bodmin.**—WORKHOUSE DRAINAGE.—Tenders are invited for carrying out new drainage works and certain alterations in connexion therewith. Further particulars, etc., may be obtained of the surveyor, Mr. William J. Jenkins, St. Nicholas Gate, Bodmin.

JANUARY 8.—**Llandebie.**—WATER MAINS.—Llandilo-Fawr R.D.C. invite tenders for extensions of water mains. Plans may be seen with, and full particulars obtained from, the Council's Engineer, Mr. H. Herbert, of Brynmarlais, Ammanford.

JANUARY 8.—**Lower Halstow.**—SANITARY WORKS.—The Kent Education Committee invite tenders for the execution of sanitary improvements required to be carried out at the Council school. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. Harry Greensted, 90, High-street, Sittingbourne.

JANUARY 8.—**Stretford.**—FLAGGING, DRAINING, ETC.—Stretford U.D.C. invite tenders for works of flagging and drainage in passage adjoining Nos. 144-168, Clifton-street, and 2-4, Ayres-road. The drawings, etc., may be seen, and forms of tender, etc., obtained, on application to Mr. Ernest Worrall, the Council's Surveyor, by cheque of 2*l.* 2s.

JANUARY 10.—**Wootton Bassett.**—WATER SUPPLY.—The Cricklade and Wootton Bassett R.D.C. invite tenders for a brickwork tower, 44 ft. by 24 ft. and 20 ft. high, and laying, etc., short lengths of 6-in. and 4-in. cast-iron mains, with valves and fittings, etc., at Coxstalls, Wootton Bassett. Plans, etc., to be seen, and a copy of the schedule of quantities, etc., to be obtained, upon application to the Engineer, Mr. F. Redman, 34, Wood-street, Swindon, Wilts, and upon the deposit of the sum of 2*l.* 2s.

✱ JANUARY 11.—**West Ham.**—ROADS.—The West Ham B.C. invite tenders for making-up with granite and wood-paving certain roads. See advertisement in this issue for further particulars.

JANUARY 14.—**Brittas.**—SEWERAGE AND OUTFALL WORKS.—The Dublin Joint Hospital Board invite tenders for the above works in connexion with their new sanatorium at Crooksling, Brittas, Co. Dublin. Plans, etc., may be inspected, and full information obtained from Board's Architect, Mr. George T. Moore, M.Inst.C.E.I., Nos. 1 and 2, Foster-place.

JANUARY 15.—**Carshalton.**—SEWAGE WORKS.—The U.D.C. of Carshalton invite tenders for the construction of four quiescent settlement tanks and roof over existing tanks, four percolating filters, seven secondary filters, distributing chamber, valve chambers, manholes, cast-iron mains, stoneware pipe sewers, drains, paths, roads, etc., at sewage farm. Plans, etc., may be seen, and specifications, etc., obtained, on application to Messrs. Strachan & Weekes, civil engineers, 9, Victoria-street, Westminster, London, on payment of a deposit of 3*l.* 3s. by cheque.

NO DATE.—**Beaudesert.**—WATER SUPPLY.—Tenders are required for the construction of a brick reservoir of 150,000 gallons capacity, and for laying 9-in. main and internal connexions for the supply and fire protection of Beaudesert, Staffordshire, for the Marquis of Anglesey. Application should be made to the engineers, Messrs. G. & F. W. Hodson, M.Inst.C.E., Loughborough.

NO DATE.—**Staple Hill, Bristol.**—PLAYGROUNDS.—The Gloucestershire Education Committee invite tenders for excavating, levelling, and forming playgrounds at Staple Hill Council School, near Bristol. Particulars may be obtained from Mr. R. S. Phillips, Architect to the Committee, Gloucester, upon depositing the sum of 2*l.* 2s.

STONES, MATERIAL, AND STORES.

DECEMBER 28.—**Sowerby Bridge.**—SETTS, ETC.—Sowerby Bridge U.D.C. invite tenders for setts, flags, and curbs (Yorkshire stone only) required in making-up Albert-road, from Clay-street to Burnley-road. Forms of tender, etc., may be obtained on application to Mr. George E. Wrigley, Engineer's Office, Sowerby Bridge.

DECEMBER 29.—**Oxford.**—MATERIALS.—The Corporation invite tenders for the supply of goods for two years. Printed schedules and forms of tender can be obtained at the City Engineer's office, Town Hall.

DECEMBER 31.—**Penzance.**—MATERIALS.—Tenders are invited for the supply of materials viz., cast and wrought iron works, granite, blue lias, lime, etc. Forms of tender may be obtained at the Borough Engineer's office, Public Buildings.

JANUARY 3.—**Bury.**—IRON CASTINGS.—The Bury and District Joint Water Board invite tenders for iron castings required during the year. Particulars, etc., may be obtained on application to the Water Works Manager, Parsons-lane, Bury.

JANUARY 3.—**Leeds.**—BOTTOM BALLAST FOR RAILWAY AT KNOSTROP SEWAGE WORKS.—The Sewerage Committee invite tenders for about 600 tons of approved hard stone or slag pitching, 9 in. deep. Further particulars can be obtained on application at the office of the Sewerage Engineer, Mr. G. A. Hart, Municipal Buildings, Leeds.

JANUARY 7.—**Manchester.**—FIRECLAY GOODS.—Manchester Corporation Gas Committee invite tenders for the supply and delivery of fireclay goods. Full particulars, etc., may be obtained from Mr. Frederick A. Price, Superintendent, at the Gas Offices, Town Hall, Manchester, on payment of a deposit of 2*l.* 2s.

JANUARY 7.—**Watford.**—SEWER PIPES.—Watford U.D.C. invite tenders for the supply of about 860 lin. yds. of 24-in. diameter earthenware or stoneware pipes of concrete tubes. Specification, etc., may be obtained from Mr. D. Waterhouse, Engineer to the Council, Council Offices, Watford.

✱ JANUARY 14.—**Chelmsford.**—BROKEN GRANITE.—The Essex C.C. invite tenders for supply of broken granite. See advertisement in this issue for further particulars.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*BUILDING INSPECTOR	Southgate U.D.C.	160*l.* per annum	Jan. 4

Digitized by Google

Patents.

APPLICATIONS PUBLISHED.*

10,903 of 1908.—Charles Waterhouse and Luke & Spencer, Ltd.: Grinding, abrasive, and like wheels.

25,349 of 1908.—William Mackenzie: Fasteners for windows, doors, and the like.

25,376 of 1908.—Thomas Clarke & Co., Ltd., and Thomas Clarke: Fastenings for sliding doors or gates, such as lift gates and the like.

26,270 of 1908.—Wilhelm Blume and Otto Schmidt: Apparatus for cleaning floors, ceilings, walls, and the like.

26,329 of 1908.—James Maxtone Thom: Water taps or cocks.

1,187 of 1909.—Moses Lowe: Chimney-tops.

3,006 of 1909.—The Cleveland Bridge and Engineering Company, Ltd., and Joah Haigh Walker: Movable bridges.

4,337 of 1909.—William Ernest Cato Liebert: Fireproof doors and like fireproof structures.

5,495 of 1909.—British Cork Asphalt, Ltd., Harold Mills Clifford, and Charles Edward Duce: Manufacture of tiles, plates, or sheets for covering floors, and for other similar purposes.

7,683 of 1909.—Samuel Harry Groves, John Arthur Anstice, and Richard Edmund Anstice: Manufacture of roofing tiles.

9,150 of 1909.—Daniel Frame: Securing toolheads and the like to wooden shafts.

16,469 of 1909.—Ludwig Gellert: Concrete building blocks and floors.

18,110 of 1909.—Robert Stickdorn: Valve-discharge flushing apparatus for water-closets.

20,279 of 1909.—Edwin Henry Cutforth: Manufacture of lavatory basins.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

December 4.—By S. MEALING MILLS (at Norwich).
Hainford, Norfolk.—Hainford Hall and 50 a. 0 r. 17 p., f. £4,800

December 8.—By BRUTON, KNOWLES, & Co. (at Hereford).
Bishops Froome, Hereford.—Woodcrofts Farm, 220 a. 2 r. 14 p., f. 4,495

December 13.—By GEO. HEAD & Co.
Marylebone.—20, New Chesterfield-st., u.t. 14 yrs., g.r. 1*l.*, w.r. 106*l.* 12s. 360
Long Ditton.—2 and 3, Brookfield-villas, u.t. 60 yrs.., g.r. 8*l.* 8s.. p. 460

December 14.—By ERNEST OWERS.
Hampstead.—7, Fitzjohn's-av., f., p. 4,100

By FREDERICK WARMAN.
Stoke Newington.—22, Brighton-rd., u.t. 51 yrs., g.r. 6*l.*, e.r. 34*l.* 220
Kingsland.—54, Balmes-rd., u.t. 21 yrs , g.r. 4*l.*, e.r. 54*l.* 12s. 130
Crouch End.—176, Park-rd., u.t. 57 yrs., g.r. 6*l.*, y.r. 32*l.* 195

By C. W. PROVIS & SONS (at Manchester).
Pendlebury, Lancaster.—Royal Oak Hotel, f. .. 7,550

December 15.—By DAVID BURNETT, SON, & BADDELEY).
Islington.—Balls Pond-rd., f.g. rents 19*l.* 10s., reversion in 42 yrs. 480
Stanley-rd., f.g. rents 18*l.* 15s., reversion in 42 yrs. 470
Canterbury-rd., f.g. rents 20*l.*, reversion in 42 yrs. 500
Kingsbury-rd., f.g. rents 24*l.*, reversion in 42 yrs. 600
Stoke Newington.—Milton-rd., f.g. rents 10*l.*, reversion in 42 yrs. 245
Milton-rd., f.g.r. 10*l.*, reversion in 72 yrs 230
Clapton.—Reighton-rd., f.g.r. 5*l.*, reversion in 72 yrs. 125
Redwald-rd., f.g. rents 11*l.*, reversion in 69 yrs. 245
Overbury-st., f.g.r. 9*l.*, reversion in 69 yrs. .. 200
Dunlace-rd., f.g.r. 6*l.*, reversion in 69 yrs..... 145
Walthamstow.—Boundary-rd., f.g. rents 12*l.*, reversion in 69 yrs. 265
Battersea.—Cambridge-rd., f.g. rents 16*l.*, reversion in 68½ yrs. 380
Foxmore-st., f.g. rents 24*l.*, reversion in 68 yrs. 580
Shepherd's Bush.—Westwick-gdns., f.g.r. 6*l.* 6s., reversion in 50 yrs. 145

By G. H. MASTERMAN & Co.
Barnes.—Cambridge-rd., f.g.r. 42*l.*, reversion in 60 yrs. 950
Cleveland-rd., f.g.r. 16*l.*, reversion in 58½ yrs.. 365
Cleveland-rd., f.g. rents 28*l.*, reversion in 57½ yrs. 605

By DOLMAN & PEARCE (at Camden Town).
Hampstead.—37, Upper Park-rd., u.t. 41 yrs., g.r. 6*l.*, e.r. 52*l.* 315

December 16.—By F. W. BALCH.
Harringay.—97, 101, and 103, Allison-rd., u.t. 80 yrs., g.r. 21*l.*, y. and e.r. 90*l.* 715

By DAVID J. CHATTELL & SONS.
Tottenham.—Seven Sisters-rd., f.g. rents 21*l.*, reversion in 70 yrs. 462
Pimlico.—1 and 2, Warwick-pl. West, u.t. 15 yrs., g.r. 12*l.*, y.r. 80*l.* 250

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Best Stocks	1 8 0	per 1000 alongside, in river.
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 6 0	" at railway depôt.
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	" " "
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Best Dipped Salt Glazed Stretchers	10 17 6	" " "
Headers	10 7 6	" " "
Quoins, Bullnose, and Flats	14 7 6	
Double Stretchers	16 7 6	" " "
Double Headers	13 7 6	" " "
One Side and two Ends	17 7 6	" " "
Two Sides and one End	18 7 6	" " "
Splays and Squints	15 17 6	" " "
Second Quality White and Dipped Salt Glazed	1 5 0	per 1000 less than best.

	s. d.	
Thames and Pit Sand	6 6	per yard, delivered.
Thames Ballast	5 0	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. dep.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
Scappled random blocks	2 0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r.d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
22×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42	0 per 1000 at rly. dep.
Hip and Valley tiles	3	7 per doz. "
Best Broseley tiles	50	0 per 1000 "
Do. Ornamental tiles	52	6 " "
Hip and Valley tiles	4	0 per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6 per 1000 "
Do. Ornamental do.	60	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	0 " "
Best Red or Mottled Staffordshire do. (Peakes)	51	9 per 1000 "
Do. Ornamental do.	54	6 " "
Hip tiles	4	1 per doz. "
Valley tiles	3	8 " "
Best "Rosemary" brand plain tiles	48	0 per 1000 "
Best Ornamental tiles	50	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	8 " "
Best "Hartshill" brand plain tiles, sand-faced	50	0 per 1000 "
Do. pressed	47	6 " "
Do. Ornamental do.	50	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	6 " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6 per 1000 "
Hand-made sand-faced	45	0 " "
Hip tiles	4	0 per doz. "
Valley tiles	3	6 " "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14 0 0	... 15 10 0
Deals: best 3 by 9	13 10 0	... 14 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	... 12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	"
2 in. by 4 in. and 2 in. by 6 in.	9 10 0	... 10 10 0
2 in. by 4½ in. and 2 in. by 5 in.	9 0 0	... 10 0 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5 0 0	... 5 10 0
Seconds	4 10 0	... 5 0 0
Small timber (8 in. to 10 in.)	3 17 6	... 4 0 0
Small timber (6 in. to 8 in.)	3 5 0	... 3 10 0
Swedish balks	2 12 6	... 3 0 0
Pitch-pine timber (30 ft. average)	4 10 0	... 5 5 0

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in.	24 10 0	... 25 10 0
3 in. by 9 in.	22 10 0	... 23 10 0
Battens 2½ in. and 3 in. by 7 in.	17 0 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	19 0 0	... 20 0 0
3 in. by 9 in.	18 0 0	... 19 10 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	... 15 0 0
Third yellow deals, 3 in. by 11 in. and 9 in.	14 0 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	... 12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 10 0	... 22 10 0
Do. 3 in. by 9 in.	18 10 0	... 19 10 0
Battens	14 0 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	... 17 10 0
Do. 3 in. by 9 in.	15 0 0	... 16 0 0
Battens	11 10 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	... 14 10 0
Do. 3 in. by 9 in.	13 0 0	... 14 0 0
Battens	10 10 0	... 11 0 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	15 0 0	... 16 0 0
" " 3 in. by 9 in.	14 0 0	... 14 10 0
Battens	11 10 0	... 12 10 0
Second white deals, 3 in. by 11 in.	14 0 0	... 15 0 0
" " 3 in. by 9 in.	13 0 0	... 14 0 0
Battens	10 10 0	... 11 0 0
Pitch-pine: deals	19 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak logs— Large, per ft. cube	0 3 0	... 0 3 9
Small " "	0 2 6	... 0 2 6
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¼ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 10	... 0 1 1
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak per load	18 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0

Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	... 0 17 0
1 in. by 7 in. yellow, planed and matched	0 14 0	... 0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	... 1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	... 0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	... 0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	... 0 16 6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0 11 0	... 0 13 6
1 in. by 7 in. " "	0 14 0	... 0 18 0
¾ in. by 7 in. white "	0 10 0	... 0 11 6
1 in. by 7 in. " "	0 12 9	... 0 15

6 in. at 6d. to 9d. per square less than 7 in.

Digitized by Google

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

The Growth of the English House. By T. ALFRED GOTCH, F.S.A., F.R.I.B.A. Pp. 312. (London: B. T. Batsford. 1909. 7s. 6d.)

THE main object of this very logically constructed book is to follow out the development of the English house plan, from the simple square erection of the Norman castle, with one room over another and a narrow corkscrew staircase to connect them, to the gradual evolution of the many-roomed house of the XVIIIth century. "It is not difficult," as Mr. Gotch says, "for any one to trace a likeness between the house of to-day and that of, let us say, the time of Elizabeth; but the resemblance between an Elizabethan manor house and a Norman castle or a Northumbrian peel-tower is not by any means so obvious; yet the descent of one from the other can be clearly established."

In the days of the Keep the dwelling was a fort as well as a habitation; it was built for a defence, but it was the ordinary home of the family. The author takes the Keep of Castle Hedingham as a typical example of the XIIth century dwelling in England; the plan showing a large room, 38 ft. by 31 ft., on each story, within very thick walls which in the upper stories are honeycombed with chambers and recesses, some of these representing the extremely crude sanitary (or one should rather say insanitary) provisions of the day. Brutal and devoid of all that we should call decency must have been the life in such a habitation.

The link between these grim and comfortless castles and the Elizabethan or Jacobean house lies in the fact that, while the castle period still survived, fortified manor houses were erected; and these were to a great extent additions of subsidiary rooms around the large hall which was the reminiscence of the Keep. The story in the Keep which was called the hall was the general living-room (and sleeping-room) of all the inmates except probably the heads of the house, who may have claimed a certain degree of privacy on another floor of the building. And in the manor house of the XIIIth century the Hall was still the centre of household life, but it was not carried up into a tower in stories; it was the hall of the Keep without the dungeons or upper stories, but still the principal room in the house, the centre round which minor and subsidiary apartments gradually conglomerated. It may have been, often was, two stories in height as compared with the other buildings, but it had only one floor. And it is this prevalence of the large Hall, as the central feature of the house plan, and the direct survival of the hall of the Keep, that Mr. Gotch traces out in his book. Instead of the attendant rooms being built over the Hall they are spread out at each end of it.

Stokesay Castle plan is an example. In the early days of planning the hall was an interpolation which prevented direct internal communication between the rooms at one end and the rooms at the other, except on the ground floor; each set of rooms, if they ran to more than one story, had to have its own staircase. In illustration of the ideas of the time as to increased comfort the author quotes from the "Liberate Rolls" of the time of Henry III., giving orders in respect of the King's various houses in different counties: windows were to be glazed; porches built to exclude draughts; passages of communiation to be made; walls to be wainscotted; *garde-robes* to be made less offensive, etc., etc.; the latter an injunction that must surely have been emphatically called for, though in the XIIth century probably no one thought anything of it, or supposed that it could be avoided. It is curious to try to picture to oneself the reality of life and the manners of the inmates, in a Norman Keep.

In the XIVth century we may take Haddon as a notable example of a house; we should not perhaps call it typical, for Haddon was a rather superior residence to most of its time. Here the hall is still the central feature, but it is between two courtyards and can do with thinner walls and more windows than would be afforded if it lay behind an outer wall. The outer walls are still very thick and the windows in them very small, but for all that the appearance of being a fortification is passing away from the dwelling-house; or if some of the appearance is left, in battlements and turrets, there is less of the reality. The plan is exceedingly irregular in its lines, with no attention whatever to right angles. In the manor house of the later period there begins to arise a certain tendency towards symmetry of plan, but the staircase is late in developing. At South Wingfield, Derbyshire, there is a fine and somewhat elaborate plan, but Mr. Gotch draws attention to the fact that there is still no better staircase than the old circular turret stair. The stair was still merely a means of communication; the idea of making it a part of the interior amenity of a house, as well as giving it spacious and convenient dimensions, had not yet arisen.

The reversion to the plan and general aspect of the Keep, in the Tattershall Castle, in the middle of the XVth century, is a very curious instance of the apparently capricious adoption of a type of building which had been long abandoned, and belonged in fact to an age of quite different habits. Tattershall, as far as it is left, is just a Norman keep treated in a Gothic manner, with octagon turrets at the angles and heavy machicolations between. There were other buildings forming part of the house, which exist no longer, but there can be little doubt that the builder of Tattershall had been struck by the effect of some of the Norman castles, and wished to do something of the same kind in the style of his own day. Warkworth Castle is another interesting example of a kind of reminiscence of the ancient Keep, but in a more modern manner; the plan is divided up into rooms in a somewhat ingenious fashion, whereas Tattershall retains the old plan of one apartment on each story, with recesses and passages in the thickness of the wall (though better managed than in the Norman buildings); and the exterior outline of Warkworth, with its semi-octagon projections on each face, is very picturesque, and quite novel for its time. After a chapter, with some interesting illustrations, on mediæval domestic features, such as windows, fireplaces, etc., we come with the XVIth century to the dawn of the Italian influence:

> "The early steps in the change of design are of great interest. They appear at first infrequently and tentatively in insignificant ornament; then rather more freely; after a time they affect prominent features such as cornices; then the pediment appears; the pointed arch gives way to the semicircular; windows become squareheaded; classic plasters are introduced, sparingly at first, but afterwards with more freedom; symmetry of disposition in the plan of the house becomes more frequent. Yet beneath all these Italian adornments the body of the house is of the old English type."

Horham Hall is given as an example of the house of this date; in the plan the hall still remains the central feature, and in its exterior treatment we come on an early example of the great mullioned window, the whole height of the appartment, which, as later at Kirby and elsewhere, was to become, with such fine and broad effect, the outward architectural expression of the hall. In many of the Elizabethan and Jacobean exteriors there is what may be called a studied and cultured picturesqueness, a blending of what might be thought opposite graces of style, which is hardly found in any other period of English architecture.

With the advent of Palladianism in house architecture came also what Mr. Gotch calls "the influence of the amateurs." Reduced to Palladian rules, architecture became a kind of elegant accomplishment. Anyone who had got up the Palladian system of orders and proportions and had a little natural taste could design a respectable façade according to that programme; and hence it came about that designing became a matter of external effect without much regard to the convenience of the interior arrangements. Instead of the plan suggesting the design, the plan was made to fit into it. Hence arose those square or parallelogram plans, divided up symmetrically into large saloons, while the minor matters of comfort and convenience in a house were left to take care of themselves. Bedrooms were hardly thought of in the scheme; they could be got in somehow and divided off in the upper stories; the main object was the production of a series of staterooms on the ground floor, controlled in their arrangement by the symmetrical design of the elevations. This principle of house planning was not confined to large mansions; it invaded also the ordinary street house. The houses of a century or more since, in such streets as Wimpole-street, Harley-street, and Gower-street, all provide large and dignified sitting-rooms and entertaining rooms, and everything else is sacrificed to that object. There still is recognised, however, the survival of the ancient "hall," descended from Norman times, forming the central feature of the manor-house plan, and now the central feature of the Georgian plan.

An interesting exception during the Palladian period is Boughton House in Northamptonshire, built under French influence by an owner who wished his house to be a kind of Versailles in miniature. It is in better taste than Versailles, however, nor did the owner, or his architect, make the mistake made at Versailles of projecting the centre of the façade; the house is on the ⌐ plan. It is a pity the plan of it is not given in the book, for comparison with some of the others that are illustrated.

Buildings like Blenheim and Castle Howard are palaces rather than dwelling-houses; comfort and convenience were sacrificed to stately effect, and wings which balanced architecturally represented interior apartments of complete diversity of purpose and importance. Yet it is impossible not to feel a certain admiration for this large stateliness of plan. If an owner chooses to live a life a state rather than one of domestic comfort, Castle Howard at least gives a magnificent expression of this choice, and from its own standpoint is not to be despised. It is at all events good to look at, and impressive to the spectator; and if the owner preferred palatial stateliness to comfort it was his own affair.

Digitized by Google

We hope the book will be read by general readers as well as by architects. For the latter it is a useful historical *résumé* of an important chapter in English architecture; it is very fully illustrated, and, wherever possible the author has dated the illustrations. But it is a book perfectly comprehensible to the general reader, and ought to give a new interest to the subject of the English house, in showing the historical connexion of its plan with the buildings of a period when an Englishman's house was literally his castle; or rather, perhaps, as the author puts it, when his castle was his house.

The Lives of the British Architects, from William of Wykeham to Sir William Chambers. By E. Beresford Chancellor, M.A., F.R.Hist.Soc. Pp. 323. London; Duckworth & Co.; 1909. 7s. 6d.

It was a good idea to collect into one conveniently-sized volume some short biographical account of those English architects whose names emerge from among the number (probably pretty large) who designed buildings, perhaps often good ones, without acquiring any special reputation as architects. Indeed, even in regard to those recorded here, it is curious how much uncertainty there is in regard to the actual deeds of many of them, and the amount of the claim which they really had in regard to the merits of any special building. Nor can one say that the record, except for two or three great names, is a very brilliant one. Take out Inigo Jones, and Wren and Hawksmoor, and there is not much in the story to evoke enthusiasm. We are not actually grouping Hawksmoor as an equal of the two others; he had not what we may call the fine sanity of Wren, and he never had the same great opportunities; but it may be doubted whether he was not, in one sense, a more imaginative and ideal creator in architecture than Wren. The latter, as Professor Lethaby so delightfully put it, "saw exactly what could be done with the Renaissance box of bricks," but Hawksmoor had a box of bricks of his own, which was not exactly according to pattern. His St. Mary Woolnoth is an actually original conception, which cannot be referred to any precedents. We think the author underrates him.

Whether one could add William of Wykeham as a fourth to the great architects of the book depends on what view one takes of Wykeham's actual part in the works connected with his name. It is true that he had originally been a surveyor, but it is doubtful whether his transformation of Winchester nave was not mainly the case of the man in the parable—"I say unto another 'Do this,' and he doeth it." The initiating idea was his, no doubt, but it may be questioned whether either on this or other works he acted the part of architect in the true and full sense of the word.

Apart from these, there is not much to arouse very strong interest in the names and works of the list in which Vanbrugh, Gibbs, Robert Adam, and the younger Dance are the most prominent. Vanbrugh indeed excites interest, not so much from his architectural achievements by themselves as for the largeness and picturesqueness of his whole life and character. He was a man more remarkable than any of his own buildings; and though as architect he was nothing like the equal of Hawksmoor (to say nothing of the two greater men), we think that he too is underrated by the author. Vanbrugh was bad in detail, he was somewhat eccentric; he could not plan, and he was possessed by megalomania (not a bad form of possession, however, for an architect); but, after all, he had ideas, and the desire to achieve something beyond the scholastic or the commonplace. Taken all round, he is a far more interesting figure than Gibbs and Chambers, with their correct and carefully designed academic work; certainly more so than Robert Adam, whose charming but frigid detail might be defined as representing "boudoir classic."

The book is valuable and will be of interest to architects as a collection of facts which appear to have been verified with care; but we cannot think the critical faculty shown in the book is very high, and the style in a literary sense is rather dull. We can see no adequate reason for exalting James at the expense of Archer; James was one of the correct school; there is far more of the modelling of a large hand in Archer's church tower at Birmingham than in that of St. George, Hanover-square; and it is quite out of date now to bring up again the old gibes about Archer's Westminster Church, which have been repeated by one writer after another. Any unprejudiced judge of late Renaissance work must recognise that Archer's church is really a remarkable and original work, that there is nothing essentially absurd in the four angle towers, and that the façades are powerfully-treated work of their class. Referring, by the way, to the neighbouring towers of Westminster, we may say that we feel satisfied that they are from a design of Wren's, though not carried out by him; and that they are not nearly so bad as it is the fashion to think; as the work of a Renaissance architect, with no natural feeling for Gothic, they really fill their position far better than might have been expected under the conditions.

The chapters on Inigo Jones and Wren give as much information as could be got within the scale of the book, and are very well done. The portrait of Inigo Jones forms the frontispiece to the book. Jones among English architects is somewhat like Leonardo among Italian painters; he has a reputation which no one questions, and yet which is out of all proportion to his known and executed works; he is a genius recognised not so much for what he did as for what he is known to have been capable of doing. The real benefit which Inigo Jones did to English architecture (which is hardly hinted at in the book) is that he first communicated to the rising Renaissance style something of the grandeur and nobility of the Italian manner, and in this way influenced to some extent Wren and his immediate successors, though the sacred fire went out in the following generations; neither Gibbs nor Chambers have any of it. Far more of a genius than either was George Dance the younger, whose great work, Newgate, is just mentioned, without any apparent recognition of its architectural importance and significance.

The book is one, however, which many architects will be glad to have; one in fact which English architects in general ought to have, as a record. To readers who are not architects we recommend it as a careful repertory of biographical fact, which can be read as such without taking it as a guide to the criticism of architecture.

The Mediæval Hospitals of England. By Rotha Mary Clay. Pp. 342. (London: Methuen & Co. 1909. 7s. 6d. net.)

Scattered throughout the length and breadth of the country are a number of buildings or groups of buildings, many in a good state of preservation, that with others now destroyed played in the Middle Ages an important part in the daily life of the nation. Originating in early days with houses that were intended primarily for hospitality to the wayfarer, the system eventually extended to the provision in or near most towns and villages of any importance of institutions, not only for the wayfarer and pilgrim, but for the sick, infirm, and destitute, and a large number—Miss Clay has found records of about 200—were devoted to the reception and care of lepers. During the period that the terrible scourge of leprosy was rife very stringent rules were laid down for the protection as far as possible of the community from infection, and although all cases were not so dealt with, the founding of the lazar-house, as it was called, and the partial if not always complete isolation of the leper helped to some extent towards the lessening and ultimate disappearance of the disease in England. For a large amount of information on this subject, and to the chapters dealing with the founders, benefactors, and dedications of these hospitals, their inmates, constitution, and funds, the relation they bore to Church and State, and the reasons that contributed to their ultimate decline and reduction in numbers, we must refer the reader to Miss Clay's interesting pages. We may, however, in passing quote the general definition of the Mediæval "Hospital" given in the introductory chapter. "It was an ecclesiastical, not a medical, institution. It was for care rather than for cure; for the relief of the body when possible, but pre-eminently for the refreshment of the soul."

A chapter—though a comparatively short one—is devoted to the description of the hospital dwellings; some ground plans are given and illustrations, and throughout the work are a number of plates, some photographs of existing buildings, others reproductions of drawings and engravings of examples, some of which have now been destroyed.

Fortunately, although the number may not be large, we still have some of these buildings in a comparatively good state of preservation, and sufficient evidence that, although in many cases of simple character, they were not lacking in interesting architectural detail. The planning of these institutions varied. The simplest, and perhaps the early, form was that of a "hall" with a chapel at the east end, all under one roof—resembling some of the infirmary halls attached to the monastic foundations—still preserved with but little alteration in the interesting hospital of S. Mary, Chichester. The Domus Dei at Portsmouth, where the chapel is now incorporated with the Garrison church, was similar. At S. Nicholas, Salisbury, both hall and chapel are divided into two aisles by an arcade down the centre, with two altars at the east end, and Miss Clay suggests that the three altars mentioned as having existed at St. Bartholomew, London, points to these having possibly been a centre and two side aisles, with an altar at the end of each. At S. Mary Magdalene, Glastonbury, the "hall" is subdivided by walls forming separate rooms, each with stairs to rooms over, and a passage down the centre. A still later and larger development of the type is seen at the Bede House at Stamford. The Savoy Hospital in London was cruciform on plan, and another well-known building—group of buildings forming two quadrangles—is at S. Cross, near Winchester. Mention should also be made of a type exemplified by the beautiful buildings at Ewelme and Coventry, arranged round a quadrangle and narrow courtyard respectively, and resembling more in character and planning the almshouses of later date.

What little ornament there was on these buildings was probably centred chiefly on the chapel, and the window tracery is a prominent feature in the Maison Dieu at Dover and in the chapel windows at S. Petronilla, Bury St. Edmunds, and S. Mary the Virgin, Newcastle-on-Tyne. A chapel of later date attached to the leper hospital of St. Bartholomew in the Cowley-road, near Oxford, is still in good preservation—an illustration is given of it from an old engraving. Transitional work with considerable enrichment existed in the now destroyed chapel of S. Mary Magdalene, Winchester, and at Gateshead is a good Early English front. Indeed the architectural work of these buildings—although it has been to some extent done by Mr. Dollman—is worthy of a separate and carefully drawn series of illustrations, and we are glad to hear that this work is receiving attention. If well carried out it cannot fail to be of considerable architectural value.

Digitized by Google

Two appendices are given, Appendix B being a carefully compiled list of the foundations prior to 1547; the bibliography of the subject with references to other sources of information, and lastly a full index. The work is a valuable addition to the series of "Antiquary's Books."

The Cathedrals and Churches of Belgium. By T. Francis Bumpus. Pp. 295. (London: T. Werner Laurie. 1909. 6s.)

Being easy of access and concentrated within a comparatively small area, the cathedrals of that part of the Netherlands now the kingdom of Belgium are probably as well known as those of other continental countries. The churches in districts which abut on the frontiers of France and Germany naturally show evidences of the architectural influences of those countries—the lofty choir at Tournai approximates more to the work of the former, the "hall" type of church found in Germany has no doubt influenced the design of such churches as those at Liége (St. Croix) and the abbey church at Lobbes, while St. Martin at Courtrai shows a combination of the two. The long windows in the almost universal apsidal termination of the large churches of the country is again no doubt a feature derived from Germany. Simplicity in planning and in vaulting, the great similarity in the columns of the arcades, the use of brick and stones of varying colours in combination, and the beauty of the towers may also be noted. Double western towers are rare, although they occur at St. Gedule, Brussels, and were planned (with spires), though only one was completed, at Antwerp, but the single western tower is very general, and at Malines, Ypres, and St. Jacques, Antwerp, assumed grand proportions. Neither were finished, but in their incomplete state they are very fine—that at Malines rises to the height of 350 ft., and it is calculated that the design of the spire, if completed, would have carried it nearly 300 ft. higher. Only six of the mediæval rood screens of importance remain, of which that at Lierre is perhaps the most graceful, but if the Renaissance screens that have so largely been introduced are but poor substitutes for the work they replace, there is much beautiful detail in some of them and in the choir stalls and other fittings of contemporary date that is worthy of study. The same painstaking care and thoroughness shown in Mr. Bumpus's former books on the North German and Scandinavian cathedrals and churches applies also to this volume, and it is certain to be of great assistance to those who require a sure guide to the interesting churches of this corner of Europe. The illustrations, chiefly from photographs, give a good general idea of the buildings described; of some, such as the beautiful screen at Lierre, a larger and more detailed view might with advantage have been given, but the excellence of the subject-matter—we would especially draw attention to the first two chapters—is more than a recompense for any shortcomings in the illustrations.

Relics and Memorials of London City. By James S. Ogilvy. Pp. 256. (London: George Routledge & Sons, Ltd.; New York and Toronto. 1910. 25s.)

We gather from his preface that the author would rest the reputation of this work upon the illustrations rather than the text. Yet he need feel no misgiving on the score of the latter, for he gives much information which is not easily to be found. Discoursing volubly by the way, he takes us into various quarters of the city, recalling scenes and episodes of, as he says, "a city of shrines—a place of memories." What Mr. Ogilvy writes of the Rolls Chapel, namely, that it was rebuilt by Inigo Jones, and that Dr. Donne preached the consecration sermon, really relates to the Chapel of Lincoln's Inn; the error may be traced to Pennant, and we ourselves have ascertained in the Bishop of London's Registry that there is no record there of the consecration of the Rolls Chapel. It appears, too, that Mr. Ogilvy wrongly identifies Nos. 85-6-7, Fetter-lane (illustrated by him and now doomed), with the famed White Horse coaching Inn, for the White Horse, at Nos. 88-90, being then a lodging-house for "casuals," was, together with the coach-yard and Nos. 1-12, Norwich-court, pulled down eleven years ago, and Nos. 85-7, formerly appertained, we believe, to (old) Barnard's Inn.

Several of the sixty-four coloured plates present the enhanced effects of sunshine in the early morning. Some views will, we dare to say, be unfamiliar to many—those, for example, of the tower, largely built of flints, of Elsing Spital in London-wall; Aldgate Ward School, with its lilac and fig-trees, a charming little picture; St. Bride's well; the Watling and Bell taverns in Bow-lane and Cornhill; the Jacobean "Great House" of the Moravians, and the XVIth century timber houses and their gardens in Neville's-court, Fetter-lane; "Wren's House" (an old Ward School) in Botolph-lane, Eastcheap; and a source of the River Fleet, in Caen Wood. Samuel Wyatt's Trinity House forms a happily chosen contrast with Tower-hill, and the White Tower rising above the foliage of Trinity-square. There is a good picture of St. Paul's, as seen from Fleet-street, at dawn, with St. Martin's spire nearly effacing the north bell-tower. In order to show the church as well the drawing of St. Mary-le-Bow is taken from a near standpoint in Bow Church-yard; the consequent foreshortening of the upper stages of the steeple has a curious effect; in recompense we have the pretty view of Fish Street-hill, showing the Monument, and the tower of St. Magnus, with its octagon lantern and swelling leaden cupola bearing a slender spire—one of Wren's most graceful compositions.

We should mention, too, Mr. Ogilvy's drawings of Newgate; the churches of All Hallows, Barking, St. Michael Paternoster Royal, St. Olave, Seething-lane, and Charter-house; and the XVth-XVIth century wood and plaster houses in Cloth Fair where one would fain identify the home in his childhood of Inigo Jones.

Memorials of Old Sussex. Edited by Percy D. Mundy. Pp. 297. (London: George Allen & Sons. 1909. 15s.)

Out of a total of nineteen chapters into which this volume is divided, only eight are not wholly or partly devoted to the description and illustration of architectural work.

The Saxon work in the churches and the castles in the country are the subjects of two interesting chapters by Mr. J. Tavenor-Perry. Mr. P. M. Johnston gives a careful account of the wall-paintings still existing, and of many that unfortunately have been destroyed in quite recent years. Other chapters deal with the monastic remains, the Saxon church at Bosham, the brasses, and domestic work, and separate accounts of the city of Chichester, and the towns of Winchelsea and Rye. There are numerous excellent illustrations—photographs of Bodiam Castle and the Alard tombs at Winchelsea Church among others, some drawings by Mr. Johnston of the mural paintings at Hardham, a ground-plan to a good scale of Bodiam Castle, and a reproduction from a rubbing of the brass of Margaret de Camoys at Trotton, once enriched with a number of enamelled shields.

We notice two errors. The De la Warr chantry at Boxgrove Priory Church is described (p. 109) as being on the south side of the nave; it is, however, under the south arcade of the Presbytery. In a foot-note on p. 278 reference is made to a font at *Norton* Fitzwarren, Wilts; this should be *Stanton* Fitzwarren, Norton Fitzwarren being in Somerset. Papers on the Celtic antiquities, the Downs, Forests, and literary associations combine, with those already described, in making a volume full of interesting reading.

Manuscript and Inscription Letters. By Edward Johnston; with 5 Plates by A. E. R. Gill. (London: John Hogg. 1909. 3s. 6d.)

This publication, described as "for schools and classes and for the use of craftsmen," is a portfolio of sixteen plates containing examples of script writing, as well as one or two alphabets which may serve as models for type-founding, and three photographs of examples of cut letters in Hopton Wood stone by Mr. Gill.

The pages of examples for script lettering contain useful suggestions as to the style of pen to be used, and the method of using it. One plate gives a plan for a manuscript book, showing how the writing may be placed on the page to have the best decorative effect; and another gives a reproduction of a title-page with border, drawn with a pen by E. Johnston and engraved on wood by Noel Rooke; an excellent example of simple but effective page design.

Of Mr. Gill's three stone-cut inscriptions, one is in raised letters of simple square section, the other two are incised letters with a V section. The latter are preferable for a permanent inscription, as there are no angles or edges that can be chipped or broken off, and incised letters can be cleaned out any time if required. The plate of incised capitals is a model of what such lettering should be. The publication is excellent throughout, as a guide to those who wish to acquire a good and artistic style in script writing.

Scumbling and Colour Glazing. By Andrew Millar. Pp. 86. (London: The Trade Papers Publishing Co., Ltd. 1909.)

Scumbling consists in wiping off, or brushing out, portions of a last coat of paint so that parts of the under-coat are revealed. Graining is a form of scumbling, but Mr. Millar says that the object of his little book is "to show how a fine series of colour effects may be produced by the ordinary house painter, although he may not be competent to execute the fine and cunning craftsmanship of the grainer, or even of the lower skilled worker." We cannot feel much enthusiasm for a craft which is recommended on the ground that it can be pursued by those who have very little intelligence or skill, but we have no doubt that there are many who will be glad to avail themselves of the information contained in the book. Scumbling is very well represented by sixteen slips showing "Matsine" applied to painted surfaces.

Glazing consists in covering a surface which has been painted with an opaque paint with a thin, transparent coat of another colour. Thirty-two varnished slips representative of glazing are given in the book; and in each case the glazed slip is placed beside another slip showing the appearance of the undercoat before the glazing colour and varnish were applied. The book will be very helpful to painters who have to undertake scumbling or glazing.

Oxford and Cambridge. Delineated by Hanslip Fletcher. Pp. 290 and 61 Plates. (London: Sir Isaac Pitman & Sons, Ltd. 1909. 21s.)

The two great groups of ecclesiastical and domestic buildings that constitute the two universities at Oxford and Cambridge will always prove a fascinating subject for the architect and artist, and if, as in many cases in this book, the plates are of buildings and of points of view with which we are familiar, the sixty-one full-page drawings by Mr. Hanslip Fletcher are none the less welcome. Some in line, others a combination of line and wash, the majority are very effectively drawn and reproduced, and there is more than one charming pen drawing in the text. The letterpress consists of an introduction by Mr. J. Willis Clark, and a series of concise notes on the history, buildings, and *alumni* of each college, contributed either by a

Digitized by Google

member of the college or by some authority to whom the subject is well known. The work forms an artistic gift book, and will no doubt have a wide circulation.

Memorials of Old Staffordshire. Edited by Rev. W. Beresford. Pp. 271. (London: Geo. Allen & Sons. 1909. 15s.)

In comparison with many other counties Staffordshire is not architecturally rich, but it is far from being devoid of interest, as is proved by the chapters devoted to the description of the castles, churches, and monastic institutions included in this volume. In the first named are Tutbury, Cavershall, Alton, Chartley, and the house at Boscobel. Chartley, with its associations of the latter days of Mary Stuart before the final scenes at Fotheringhay; Boscobel, one of the hiding-places of Charles II. after the battle of Worcester. Of the twenty-four monastic institutions formerly within the boundaries of the county, the remains at Dieu-la-cres and Croxden are the most important, the latter with ruins of an interesting Cistercian church. The Cathedral at Lichfield is of course the most important building among the churches, but the chapters on the towers and spires, on the five so-called "Royal Free Chapels," and the illustrations of the rich Norman work at Tutbury and Gnosall show that the church work is of considerable interest. The paper on the rise and progress of the art of pottery in North Staffordshire and that dealing with the close connexion of Dr. Johnson with Lichfield will be found not the least interesting among the non-architectural portions of the work. The photographic illustrations are in all cases remarkably clear and well reproduced.

Erosion of the Coast and its Prevention. By F. W. S. Stanton, A.M.Inst.C.E., F.S.I. Pp. 68. (London: St. Bride's Press, Ltd. 1909. 3s.)

This convenient little book deals in simple language with the difficult problems raised by the continual attack of the sea upon many portions of the British coast-line. The author discusses the nature of the forces which cause erosion, pointing his remarks by allusions to the changes which have taken place along the shores of England and Wales. The difficulty of providing adequate means of protection is almost entirely financial, and it is probable that no general movement in the direction of coast defence will take place unless inaugurated under State auspices. Mr. Stanton fully admits this argument, and urges the constitution of a central authority whose duties should cover the enforcement of laws made from time to time and the compilation of data for the benefit of those undertaking coast defence works. The book is well illustrated by plans and diagrams, and concludes with an appendix on the past and present condition of the Thames Estuary.

A Treatise on Masonry Construction. By Ira O. Baker, Professor of Civil Engineering University of Illinois. Tenth edition, rewritten and enlarged. Pp. 732. (London: Chapman & Hall, Ltd. 1909. 21s.)

In its original form Professor Baker's work was justly recognised throughout the world as the most valuable and complete treatise on masonry construction ever written. Successive editions included new matter for the greater part on pages interpolated between those of previous issues. At last we have an edition thoroughly revised and rewritten to such an extent as to constitute almost a new book. The following are some of the more important subjects now introduced or more fully treated:—Sand-lime bricks, iron-ore cements, reinforced concrete, concrete building blocks, theories of earth pressure on retaining walls, the elastic arch. New data have been incorporated throughout the text and new illustrations wherever necessary. This new edition deserves the highest praise, and we are certain that it will receive a hearty greeting from a large proportion of those already possessing copies of preceding editions, and from engineers and architects generally.

The Elements of Mechanics of Materials. By C. E. Houghton, Associate Professor of Mechanical Engineering, New York University. Pp. 184. (London: Archibald Constable & Co., Ltd. 1909. 7s. 6d.)

Intended simply as a text-book for schools and technical colleges, this book is of somewhat limited application. Almost every teacher of the subject has his own favourite treatise, and it may be doubted whether the present book will displace any others in regular use. It does not appear to us as a work of any utility to the engineer or architect who has completed his collegiate education, or one that can be recommended to those following an independent course of self-instruction.

A Concise Treatise on Reinforced Concrete. By Charles F. Marsh, M.Inst.C.E. Pp. 213. (London: Constable & Co., Ltd. 1909. 7s. 6d.)

Embodying the subject-matter of a course of lectures delivered by the author at the City and Guilds of London Technical College, this treatise deals with reinforced concrete in more convenient form than the larger work written with the collaboration of Mr. W. Dunn, although not covering the whole of the subject. We are sorry to find that Mr. Marsh continues to use the notation which makes his other writings so difficult to follow, especially for architects who are familiar with the symbols adopted in the Report of the Joint Committee on Reinforced Concrete. The book is well arranged, clearly written, and admirably produced.

Dustless Road Tar Macadam. By J. Walker Smith, City Engineer, Edinburgh. (London: Charles Griffin & Co., Ltd. 1909. 10s. 6d.)

Considering the importance of tar macadam as a palliative of the road dust nuisance, there is ample scope for a treatise devoted to the materials and methods of construction best suited to modern forms of macadam bound or treated with tar and kindred products. Mr. Walker-Smith has attacked the subject in a very businesslike manner, and we feel sure that his work will receive a warm welcome from county and municipal engineers and highway authorities throughout the country.

The Elementary Principles of Graphic Statics. By Edward Hardy. Second Edition, revised and enlarged. Pp. 200. (London: B. T. Batsford. 1909. 3s.)

Addressed to students of building and machine construction, the first edition of this treatise achieved thoroughly deserved success. The present issue has given the author an opportunity of introducing additional matter of importance relating to the reaction of walls and bending moments under oblique thrust, the effect of wind pressure on queen post trusses and pitched roofs generally, and to various points in constructive work. We can recommend this work as a trustworthy guide and one readily followed even by the beginner.

Proceedings of the Incorporated Association of Municipal and County Engineers. Vol. XXXV. 1908-9. (London: E. & F. N. Spon, Ltd. 1909.)

Among the numerous papers printed in this volume those of most general interest are "Reinforced Concrete in Engineering Structures," by Mr. C. S. Meik, M.Inst.C.E., a good review of the subject including data as to the actual cost of works executed by the author; "English Rivers: Their Uses and Control," by Frank Rayner, A.M.Inst.C.E., a short paper advocating the systematic improvement and management of rivers so as to facilitate navigation and land drainage; "Geology as Applied to Municipal Engineering," by J. Julian, B.E., this being a communication of value to architects as well as to the class specially denoted by the title.

Notes on Building Construction

ARRANGED TO MEET THE REQUIREMENTS OF THE SYLLABUS OF THE BOARD OF EDUCATION, SOUTH KENSINGTON.

PART I.—With 695 Illustrations... ... ... **10/6** Net.

PART II.—With 496 Illustrations... ... ... **10/6** Net.

PART III.—Materials. With 188 Illustrations ... ... **18/-** Net.

PART IV.—Calculations for Building Structures. With 597 Illustrations ... ... **13/-** Net.

"The work remains, as we said it would become when the first edition of the first part was published in 1875, the best text-book on the subject extant. For nearly thirty years we have used it, and never found it wanting. It was and is the one text-book which the student of building construction cannot possibly do without."—English Mechanic.

"For students preparing for any of the professional examinations these volumes are of great value, as they form a compendium of the science of construction applied to building, and for general reference the architect will find them of service."—Building News.

"Each volume is furnished with appendix and index—the latter got up on a liberal scale and apparently with excellent results. From the foregoing it will be seen that the work is comprehensive in character; by its republication in enlarged and revised form the proprietors have done a wise and useful thing, and there can be no doubt they will in due time come in for well-merited reward."—Building Industries.

LONGMANS, GREEN, & CO., 39, Paternoster Row, London.

London: Printed for the Proprietors of "The Builder" by Horace Cox at Windsor House Printing Works, Bream's-buildings, E.C., and [illegible] at the Office of "The Builder," No. 4, Catherine-street, Strand, W.C.—December 25, 1909.

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Princeton University Library
32101 079221303